COMPENDIUM

A COMPENDIUM OF ABSTRACTS 2018/2019

Research Projects and Publications of Oral Health Personnel Ministry of Health Malaysia

Oral Health Programme
Ministry of Health Malaysia
November 2020

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FOREWORD
BY THE PRINCIPAL DIRECTOR OF ORAL HEALTH
MINISTRY OF HEALTH MALAYSIA

I am delighted to be able to write a few words of introduction to this 20th Compendium of Abstract of the Oral Health Programme, Ministry of Health Malaysia (MOH). This publication presents a total of 176 research abstracts undertaken by the oral health personnel, MOH, which were reported to the Oral Health Programme, MOH between the year 2018 and 2019.

This compendium highlights an array of research areas ranging from varying disciplinary. Another challenge would be the dissemination, which has been acknowledged as an important component of the research process. Out of these 173 research abstracts published, 87.5% (154) of research papers were presented at various scientific conferences locally and internationally. Creating a sound dissemination strategy for a particular oral health research project will lead to increased awareness of the research and therefore, maximize the impact that the research can have in improving the oral health outcomes of the patients, clinicians and policy makers for evidence-based decision making, or any stakeholders that will benefit from it.

The prurience for knowledge shall continue into the road of success to perpetuate clinical and public health research in the country. Courageous support from all level of management is pivotal to boost oral health research efforts in Oral Health Programme. The COVID-19 pandemic which hit worldwide in December 2019 necessitates the dental professionals to understand the risks of disease transmission through dental settings. As such, increase research efforts in COVID-19 oral health related research is deemed necessary at this juncture.

I wish to extend my heartfelt gratitude to all oral health personnel whose work are featured in this Compendium, as well as to all others who have contributed exceptionally well to put this Compendium together. Congratulations to all of you for skivving in the oral health of the nation.

Dr. Noormi binti Othman
Principal Director of Oral Health
Ministry of Health Malaysia

EDITORS' NOTE

This Compendium of Abstracts 2018/2019 is a compilation of research abstracts that were reported to the Oral Health Programme, Ministry of Health in year 2018/2019. These research outputs were gathered from the Health Systems Research (HSR) projects, oral and poster presentations at both local and international scientific meetings, universities dissertations, published scientific papers and various research projects conducted by oral health personnel.

As in past years, the Oral Health Programme reserves the right and discretion to edit and modify these abstracts for grammar, length and clarity and to standardize formats in compliance to the requirements of this publication.

Research projects conducted by the dental specialists are categorized by area of dental specialties respectively.

Research projects or presentations which are not reported to the Oral Health Programme in 2018/2019 are not included in this publication.

The Editor
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RESEARCH
IN
DENTAL PUBLIC HEALTH

1. EFFECTIVENESS OF GINGIVAL HEALTH INTERVENTION PROGRAMME AMONG 13-YEAR-OLDS SCHOOLCHILDREN IN TANGKAK, JOHOR

Syafiqah Nadhirah I, Muhammad Khairul Syafiq A, Lee NH, Hafiza T

Introduction: In 2018, a Dedicated Team was established in Dental Clinic, Hospital Tangkak, Johor to conduct a study among secondary schoolchildren which aimed to determine the effectiveness of intervention programme on improvement in gingival health status and its correlation with sociodemographic factors, oral care practice, knowledge and behaviour. **Methods:** A cross-sectional intervention study technique was conducted using purposive sampling involving 34 schoolchildren aged 13 years old with GIS score 3 from 2 schools in Tangkak district. The intervention programme were in the form of oral health talk, tooth brushing demonstration and practice, dental check-ups and scaling. Gingival Index for Schoolchildren (GIS) was used to evaluate students' gingival health status. Following 3 months of the intervention, the schoolchildren were reviewed. Schoolchildren whose GIS score below 3 were considered with improved gingival health status. Self-administered questionnaires which include items on socioeconomic status, oral hygiene practice, knowledge and behaviour were distributed to the schoolchildren as well. Data were analysed using Microsoft Excel 2016 and SPSS version 25 **Results:** The study showed 82% (n=27) schoolchildren had improved gingival health status, while 18% (n=7) had showed no improvement following the intervention. Chi-Square Test shows statistically significant difference between gingival health status and behaviour (p=0.006), practice (p=0.035) and knowledge (p=0.018). **Conclusions:** 82% of schoolchildren presented with improved gingival health status after the intervention. There was statistical significance on perception, practice and knowledge.

Keywords: : Gingival status, GIS score, Schoolchildren, Knowledge, Practice

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2. EFFECTIVENESS OF TW1ST PROGRAMME AMONG *KOLEJ KOMUNITI LEDANG* STUDENTS, JOHOR

Koh CW

Introduction: TW1ST programme (Transformation With 1 Smile Together) is one of the oral health promotion initiatives that was first held in 2018 at Kolej Komuniti Ledang in conjunction with Oral Health Day. The programme was organised to increase awareness among students on the importance of taking good care and maintaining good oral health. This study aimed to assess Oral Health Knowledge, Practice and Attitude (KPA) of TW1ST Programme participants after oral health promotion activities and to assess the effectiveness of TW1ST programme that were held at Kolej Komuniti Ledang during TW1ST Programme in 2019. **Methods:** A total of 40 students were randomly selected to participate in this study. The questionnaires to assess students' oral health knowledge, practice and attitude (KPA) were distributed to the students prior to promotion programme. Meanwhile, post-test questionnaires to assess KPA were re-administered 2 weeks after the TW1ST programme. In addition, feedback forms were given after the programme to evaluate the effectiveness. Data were analysed using Microsoft Excel 2013 and SPSS Version 25. **Results:** Mean scores for correct answers on oral health knowledge, practice and attitude sections were 15.2, 20.2, 25.6 in the Pre-test group which improved to 29.8, 29.0, 34.2 in Post-test group respectively. The difference between Pre and Post-test was statistically significant ($p<0.05$) using t-Test: Paired Two Sample for Means. Prevalence of 97.5% students agreed that this programme achieved its objective. **Conclusions:** Oral health promotion in Kolej Komuniti Ledang was associated with positive changes on students Oral Health Knowledge, practice and attitude. In conclusion, TW1ST programme is effective.

Keywords: : TW1ST, promotion, questionnaire, knowledge

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3. CHANGE IN SMOKING BEHAVIOUR BEFORE AND DURING RAMADAN: A PRELIMINARY STUDY

Siti Khadijah M

Introduction: Muslims all around the world fast during the month of Ramadan, a sacred month which is the ninth month of Islamic Calendar. Interestingly, many Muslims are able to restrain their smoking habit while fasting from dawn to sunset for the whole month. It is of interest to study the smoking behavioural change and nicotine addiction level among Malay male smokers living in Batu Pahat district during the holy month of Ramadan. This study aims to observe the change of smoking habit among Muslim Malay males working in various sectors who were smokers, before and during Ramadan. **Methods:** This was a cross-sectional study involving smokers who lived in Batu Pahat district with a turnout of 37 respondents. Participants answered questionnaires online given in Google Form format. Respondents were expected to complete the questionnaires 10 days prior to Ramadan (pre-Ramadan), first 10 days of Ramadan (early Ramadan) and after 2 weeks of Ramadan (mid Ramadan). The outcomes measured were changes in the Fagerstrom Test for Nicotine Dependence (FTND) score and the number of cigarettes smoked during the period mentioned above. Paired t-test was used to examine changes and the significance level was set at $P < 0.05$. **Results:** The overall FTND scores and number of smoked cigarettes were significantly reduced for both period of early and mid-Ramadan. However, the *p* values for FTND and number of cigarettes taken were observed to be lower in early Ramadan [*P*(FTND) = 0.000068, P(cigarettes) = 0.0004] in comparison to mid Ramadan [*P*(FTND) = 0.000092, *P*(cigarettes) = 0.006]. In the behavioural change model, maintenance stage is very challenging. At this stage, people basically portray great determination to resist temptations that may lead them to return to their original bad behaviour which is smoking in this context. This is shown in the reduction of FTND scores and number of smoked cigarettes during early Ramadan. However, failure at this stage will cause relapse after which; subjects will resume smoking, especially towards the later part of Ramadan. There is evidence to suggest that mandatory religious obligation is associated with improving the likelihood of quitting smoking altogether. **Conclusions:** The reduction in FTND scores and cigarettes smoked at early Ramadan period was higher than during mid-Ramadan. Muslim male smokers displayed stronger willpower to quit smoking at initial phase compared with the later part of Ramadan. Concerted effort to promote and motivate via spiritual practice is adjunct to the success of our smoking cessation program. is effective.

Keywords: Ramadan, fasting, smoking

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4. SCHOOLCHILDREN'S ORAL HEALTH PRACTICE AND DENTAL CARIES STATUS: A PRELIMINARY STUDY PRIOR TO IMPLEMENTING THE SCHOOL-BASED FLUORIDE MOUTH RINSING PROGRAMME (S-FMR)

Rathmawati A, Asmani AR

Objectives: To determine dental caries status and its associated factors and oral health practice among school children in Kota Bharu, Kelantan, preliminary to School-Based Fluoride Mouth Rinsing Programme (S-FMR). **Materials and Methods:** A cross-sectional study was conducted among Standard Two school children in Kota Bharu, Kelantan. Children with kidney diseases and swallowing disorders, who will also be excluded in the S-FMR, were excluded from the study. Dental caries assessment tool used was DMFT/dft index, while children's socio-demographic characteristics and oral health practice were collected through a schoolchildren questionnaire. Data were analyzed using IBM SPSS version 24.0. Descriptive analysis and multiple linear regression were used and the significant level was set at $P < 0.05$. **Results:** Of 163 Standard Two schoolchildren examined, the majority were Malays (99.4%). The mean age (SD) of the children was 7.8 (0.30) years]. A high majority of schoolchildren affected with dental caries [90.8% (95% CI: 85.4, 94.3)] with a mean dft score of 4.7 (3.24) and mean DMFT score of 0.2 (0.56). The mean (SD) oral health practice score was 64.2% (13.25). Only 58% of the children brushed their teeth twice-daily. Chocolate drink, tea/coffee and formula milk were rated as the usual bedtime drinks. About 60% of the children have had frequently sugary foods/drinks at least once daily, between meals during weekdays and weekends. The use of fluoridated toothpaste was significantly associated with DMFT score ($P = 0.033$) and had formula milk as bedtime drink was significantly associated with the dft score ($P = 0.048$). **Conclusion:** Dental caries experiences and prevalence among the school children were high, of which deciduous teeth were found to be more affected by dental caries. This findings showed that oral health practice by the schoolchildren should be assessed prior to the S-FMR implementation, particularly on tooth brushing frequency and use of fluoridated tooth paste.

Keywords: School children, fluoride mouth rinsing, dental caries and oral health practice.

Poster presentation at 10th Asian Conference of Oral Health Promotion for School Children (ACOHPSC) on 20-21 September 2019 at The Wembley – A St. Giles Hotel, Penang.

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5. CHILDREN'S ORAL HEALTH: KNOWLEDGE OF PARENTS IN BATU PAHAT, JOHOR

Nusaibah MK

Introduction: Dental caries is the greatest oral health problem in children. Early childhood caries was found to affect 71.3% of 5-year-olds (NOHPS 2015). Parents' knowledge about child's oral health will have a significant influence on their children's oral health status. This study aims to evaluate parent's oral health knowledge of their children and its relationship to socioeconomic status. **Methods:** Self-administered questionnaires were distributed among parents who visited Maternal and Children Health Clinic (KKIA) in Batu Pahat, Johor. A total of 130 respondents were randomly selected from 9 clinics in Batu Pahat. The questionnaires include parents' age, gender, educational level, and their financial status followed by 10 questions related to parents' knowledge on oral health. Data were analysed using SPSS software SPSS 17.0 (SPSS, Inc., Chicago, IL, USA). **Results:** The mean age of the parents was 32.54 years with a majority 73.1% (n=95) mothers while 26.9% (n=35) were fathers. The mean knowledge score among the respondents was 6.51 (±1.31). The mean knowledge score was higher among father with 6.6 (± 0.98) as compared to mother 6.47 (±1.41), which was not statistically significant (p=0.67). Furthermore, mean knowledge for parents from B40 was 6.4 (±1.43) and parents with higher income was slightly higher which was 6.71 (±1.01). This data was also not statistically significant (p = 0.19). **Conclusion:** From this survey, parent's oral health knowledge on their children oral health is low with no difference among fathers/mothers and parent's income. The oral health knowledge of mothers and fathers were not significantly associated with income.

Keywords: knowledge, parents, children oral health

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6. DENTAL OUTPATIENT WAITING TIME: HOW APPROPRIATE IS THE TARGET?

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Introduction: Outpatient waiting time is established as one of the Key Performance Indicator (KPI) in all primary dental clinics in the Ministry of Health Malaysia (MOH). The standard set value was 86% of the patients will be seen by dentists within 30 minutes. Since its implementation, Selangor has never achieved the target. The timeframe has been revised to 60 minutes since January 2019. Statistical Process Control (SPC), a method to monitor and analyze work process, is a useful tool to relook the current evaluation mechanisms for waiting time. **Objectives:** To identify the best achievable waiting time for dental outpatients and to assess whether the new indicator is achievable. **Methods:** Secondary data analysis was performed. Six dental clinics in Selangor with complete computerized waiting time data were selected using convenient sampling methods. A total of 7058 patients in the selected clinics whom were treated in December 2018 were included in the analysis using the SPC chart. Control charts for a percentage of patients seen within various stipulated times were plotted, and upper and lower control limits were determined. **Results:** On average, 51.6%, 62.2%, 70.2% and 77.6% of the patients were seen within stipulated target of 30, 40, 50 and 60 minutes respectively. Correspondingly, the range of upper control limits (UCL) for each target were 59.5% to 60.6%, 69.9% to 70.9%, 77.5% to 78.5% and 84.3% to 85.2%. The UCL of 60 minutes was nearest to the standard of 86%. **Discussion and conclusion:** The findings suggest that the new KPI is set achievable. The study indicates SPC is a useful tool to set the standard for monitoring of waiting time based on clinics' performance. Continuous improvement strategies and initiatives need to be put in place by the individual clinic to achieve the target and improve the oral healthcare services.

Keywords: Dental Outpatient, Waiting Time

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7. EVALUATION OF ANAK ANGKAT SINAR MUTIARA PROGRAMME FOR TODDLERS IN NEGERI SEMBILAN

Munalizaini M, Maznah MN, Zakiah M

Introduction: *Anak Angkat Sinar Mutiara* Programme (AASMP) for toddlers is an intervention programme which was started in 2014 in Negeri Sembilan that involved the adoption of high-risk 6 months old toddlers by the dental officers and dental therapists. The toddlers were seen every 6 monthly until they were aged 4 years old whereby Lift the Lip, application of fluoride varnish to the children and Anticipatory Guidance (AG) to the parents were performed. This study aimed to evaluate the success of the AASMP in reducing caries prevalence among pre-schoolers. **Material and Methods:** This cross-sectional study utilising retrospective data of AASMP (2014 cohort and 2015 cohort) and a Conventional Oral Health Programme (COHP) i.e. toddlers attending *Permata Negara* and TASKA who were not given regular FV application and not given AG to the parent. The caries prevalence in 2-3 years old and 3-4 years old children in both groups were compared and the Chi-Square test was used to determine a significant association of caries status of toddlers between AASMP and COHP programme. **Result:** The caries prevalence of 2-3 years old toddlers of AASMP 2014 cohort was significantly lower (4.5%) as compared to similar age toddlers under COHP (9.0%, P≤0.05). Similarly, the caries prevalence of 3-4 years old (AASMP 2014 cohort) and 2-3 years old (AASMP 2015 cohort) were significantly lower than their counterparts under COHP i.e. (11.17%, 21.26%, P ≤0.001), (8.41%, 16.17%, P≤0.001) respectively. **Conclusion:** AASM is an effective ECC preventive intervention in addressing high caries prevalence among the younger children in which the toddlers and families/parents are seen frequently for oral health intervention and oral health guidance/counselling.

Keywords: *Anak Angkat Sinar Mutiara* Programme, Toddlers, Dental Caries, Fluoride Varnish

Won Best Oral Presentation at Negeri Sembilan Oral Health Scientific Conference 2019 (N9OHSC) on 29-30 June 2019 at Klana Resort, Seremban, Negeri Sembilan.

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8. EVALUATION OF *KOTAK* PROGRAMME IN JOHOR BAHRU DISTRICT

Sharifah Khairiah SH, Noor Fadzilah S, Mohd Syafiq N, Teo SHY

Introduction: Majority of the smokers start smoking before adulthood. A key goal of tobacco control is to increase smoking cessation among young adults because quitting at an early age decreases the risks of inflicting more serious health problems. Smoking cessation programme that have behavioural support increase cessation rates depending also on the health professional's experience. This study aims to determine the prevalence of smoking and the smoking cessation among secondary schoolchildren in Johor Bahru district after cessation and intervention done by mobile dental teams in year 2018 utilising the KOTAK (Kesihatan Oral Tanpa Asap Rokok) programme. **Methods:** All secondary schoolchildren who had been examined by mobile dental teams of Johor Bahru district were included in this study. Smoking habit data were obtained from smoking intervention screening form of schoolchildren aged 13 to 17 years old. **Results:** Of 93,961 secondary schoolchildren in Johor Bahru district being examined, 1.61% (n=1506) were found had used tobacco in any form. Schoolchildren of aged 17 years showed the highest prevalence of smoking habit. Among the active smokers, only 1504 had been referred for smoking cessation and intervention. Only 4.36% stopped smoking while 9.30% decided not to stop smoking after undergoing smoking intervention programme for less than 3 times. However, 38.08% of the schoolchildren stopped smoking while 47.53% still continue smoking after undergoing smoking intervention programme for 3 times or more. **Conclusions:** The smoking prevalence among secondary schoolchildren in Johor Bahru was high among 17 years-olds. A substantial proportion of schoolchildren continue smoking even after undergone the intervention programme indicate a need for long-term intervention evaluation.

Keywords: smoking cessation, secondary schoolchildren, smoking intervention screening

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Dr. Noor Fadzilah
Dr. Samuel Teo Hsien Yaw
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9. EVALUATION OF THE *DOKTOR MUDA* PROGRAMME ON THE ORAL HEALTH OF SECONDARY SCHOOLCHILDREN IN KELANTAN

Siti Kamilah MK

Health Promoting School (HPS) concept is a strategy for health promotion by the World Health Organization (WHO). In Malaysia, a similar concept was introduced in 1980s known as the *Doktor Muda* Programme (DMP) spearheaded by the Ministry of Health (MOH) and Ministry of Education (MOE). DMP was effective to promote oral health in primary schoolchildren. In 2015, DMP was introduced in secondary schools. However, no evaluation has been conducted on its impacts on oral health. **Objectives:** (i) to compare the impacts of DMP between schoolchildren attending DMP schools and schoolchildren attending non-DMP schools after 6 months in terms children's oral health knowledge (OHK), oral health attitudes (OHA), oral health behaviours (OHB), oral health status (OHS) (oral hygiene, gingival health, caries incidence), and oral health-related quality of life (OHQRoL); (ii) to determine the associated factors for schoolchildren's OHK, OHA, OHB, OHS, and OHRQoL; and (iii) to explore the process implementation of DMP in terms of *Doktor Muda* (DM) selection, training, DMP strengths and weaknesses, and suggestions for improvement from the perspectives of the DMs. **Method:** This study utilised a mixed method study design with 2 phases. Phase 1 was a quasi-experimental study involving Form 1 schoolchildren (12-13 years) in Kota Bharu and Pasir Mas Districts, Kelantan in 2018. The intervention group (IG) comprised DMP schools and the control group (CG) comprised non-DMP schools, matched by location. The sample size for the IG and CG was 270 and 265, respectively. Study tools included a validated questionnaire, O'Leary plaque index, the Gingival Index for Schoolchildren (GIS), the International Caries Detection and Assessment System (ICDAS), and the Malay Child Oral Impacts on Daily Performances (Malay Child-OIDP) index. Baseline data were collected prior to the DMP intervention, and again after 6 months. In Phase 2, focus group discussions (FGD) were conducted among DMs from the DMP schools. Quantitative data were analysed using SPSS software using descriptive, univariate and multivariate analyses. The qualitative data were transcribed verbatim and analysed using the framework method analysis. **Results:** The baseline and follow up response rate was 97.6% and 90.9%, respectively. There were no significant between-group differences in mean OHK and OHB increment scores after 6 months. However, the mean OHA increment score was significantly higher in the CG (p<0.001) after 6 months. Both groups had a significant decrement in mean plaque score after 6 months but no between-group difference was observed. The mean increment in score of GIS in the IG was significantly higher compared to the CG (p<0.001) after 6 months. A significantly lower proportion of schoolchildren in the IG experienced caries increment compared to schoolchildren in the CG after 6 months (p<0.05). In terms of OHRQoL, a lower proportion of schoolchildren in the IG experienced an increment in mean OIDP total score than schoolchildren in the CG after 6 months but no between-group difference in mean OIDP increment scores.

The associated factors for OHK increment are gender and school location; for OHA increment are location, gender, type of school and OHK; for plaque score is school location; for GIS increment is type of school; for cavitated caries (tooth) is OHA increment; for cavitated surfaces are mother's education level and OHA increment; for OIDP increment is OHK increment; and for at least 1 OIDP present are gender, mouth-rinsing behaviours, flossing frequency, and cavitated caries increment. From the FGDs, DMs perceived that their appointment was made by teachers, training was quite insufficient, with mixed feedback on support and materials provided. However, DMs perceived the programme improved their OHK and OHB including that of their peers. Recommendations for improvement included a dedicated health advisor, increase number of DMs, and longer time for DMP activities. **Conclusion:** The DMP in secondary school has some positive impacts on caries and OHRQoL after 6 months. Further improvements in DMP implementation are recommended to improve the effectiveness of DMP on schoolchildren's oral health.

Keywords: *Doktor Muda* Programme, oral health knowledge, oral health attitudes, oral health behaviour, oral health-related quality of life

Presented at Kelantan Research Day 2019 organized by Clinical Research Centre Kelantan on 14 November 2019 at Dewan Serbaguna, Blok B, Kuarters Hospital Raja Perempuan Zainab II, Kota Bharu, Kelantan.

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10. EXPLORING THE EFFECTIVENESS OF THE TOBACCO ENDGAME PROGRAMME IN JOHOR

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Objectives: To evaluate individual risk to diseases related to tobacco smoking and to study the effectiveness of 5A Ask, Advise, Assess, Assist & Arrange technique (5-As) in the tobacco cessation services. **Methods:** A prospective pilot study was conducted for 6 months. Oral health personnel were involved in dissemination of information on health risks associated with active and passive smoking to schoolchildren, antenatal mothers, outpatients, trainee teachers and public. They also intensified tobacco cessation services. Fagerstrom test for nicotine dependence (FTND) was conducted. Carbon monoxide level readings in lungs and blood using smoking analyser were taken. **Results:** Nine tobacco cessation campaigns were conducted. Two schools were involved in these campaigns. Carbon monoxide levels in lungs and blood of 419 civilians were tested. Results revealed that 115 men and 6 women were smokers. In the smoking group, 13 (11.3%) men and 2 (33.3%) women had low risk levels, 17 (14.8%) men had moderate risk levels, whereas 85 (73.9%) men and 4 (66.7%) women had high risk levels towards diseases related to smoking. Fourteen smokers, who were willing to quit smoking, participated in the 5-As for tobacco cessation. From this sample, 2 (14.3%) and 12 (85.7%) respondents were in moderate and high risk categories respectively. Mean FTND score before intervention was 5.21 (s.d 1.805) which dropped to 4.36 (s.d.1.692) after intervention. Wilcoxon signed rank test displayed a significantly lower FTND score after the intervention ($p<0.008$). **Conclusion:** 73.9% male and 66.7% female smokers had high risk levels to diseases related to tobacco smoking. Findings from this pilot study demonstrated positive behavioral changes in respondents' smoking habit after utilising the 5-As intervention. It would therefore be pertinent to recommend the use of 5-As in the smoking cessation program for schoolchildren, in tandem with the Malaysian Endgame goal to be a tobacco-free nation by 2045.

Keywords: Smoking cessation, 5A intervention, endgame

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11. FACTORS INFLUENCING SMOKING BEHAVIORS AMONGST MALE ADOLESCENTS IN KUANTAN DISTRICT

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Objectives: The aim of this study was to determine the prevalence and factors that influence smoking behavior among male adolescents in Kuantan, Pahang. **Methods:** A cross-sectional study was conducted in October 2006 among Form Four male students in Kuantan District. Three hundred and twenty three students were randomly selected from eight secondary schools. A self-administered questionnaire which include smoking status, socio demographic characteristics, knowledge on smoking, intrapersonal factors and attitude towards smoking was distributed to the respondents. Data were analysed using Stata software. **Results:** Almost half (45.8%) of male students smoked and half were Malays. Students from lower socioeconomic status were more likely to smoke (58.8%). Among smokers, 34.5 % of students smoked since their primary school and majority (91.7%) smoked ten cigarettes or less per day. Half of them (53.4%) bought loose cigarettes and majority (81.7%) used their pocket money. Multivariate analysis revealed factors that significantly associated with smoking were being in Non-Science Stream classes (OR=3.92, 95 % CI= 2.10, 7.32), peers' smoking (OR=6.07, 95 % CI= 2.32, 15.92) and attitude towards smoking (OR= 21.93, 95 % CI= 9.71, 49.51). However, having just good knowledge on smoking was not reported as an influencing factor. **Conclusion:** The prevalence of smoking among male secondary school student in Kuantan was fairly high. Those from Non-Science Stream classes, peers' smoking and attitude towards smoking were significantly associated with high smoking prevalence.

Keywords: smoking behavior, adolescent, peers' smoking

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12. FIVE YEARS TREND OF DENTAL AMALGAM FILLINGS AMONG DENTAL OFFICERS IN BATU PAHAT, JOHOR

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Introduction: Dental amalgam has been used for over 150 years for the treatment of dental cavities and is still used in Malaysia due to its excellent mechanical properties and durability. However, as dental amalgam is neither tooth-coloured nor adhesive to remaining tooth tissues, its use has been decreasing in recent years and the alternative tooth-coloured filling materials have become increasingly more popular due to aesthetic demand. This study aims to obtain information and analyse the usage of amalgam filling compared to tooth-coloured filling materials in current government dental setting. **Methods:** Retrospective data of PG207 over the period of 2015 - 2019 from all nine government dental clinics in Batu Pahat district were used. Data included fillings done by dental officers only, exclusively for permanent posterior teeth. The types of restorations were categorised as tooth-coloured materials (composite, GIC, RMGIC) and amalgam filling. Results: In total, 48,419 posterior restorations were done in 4 years with a mean of 12,104.8 ± 2,026.0. Of that, only 4,406 (9.1%) was amalgam (mean 1,101 ± 78.3). There was a constant reduction in amalgam used for posterior fillings from 1,138 out of 9,456 in 2015 (12.0%) to merely 7.1% (1,015 of 14,370 fillings) in 2018. As of until September 2019, only 562 of 12,495 posterior teeth were restored with amalgam (4.5%). **Conclusions:** There was two-fold reduction in amalgam used for posterior filling over 4 years period from 12.0% (2015) to 7.1% (2018) in Batu Pahat Dental Clinic. Notably, further reduction was observed in 2019 (4.5%). This minimization trends is in pursuit with the Minamata Convention on Mercury in global phase-down of amalgam.

Keywords: dental amalgam, permanent posterior teeth, mercury-free

Oral presentation at the 2nd Johor Oral Health Research Conference 2019 "Probe the Evidence" on 20 – 21 November 2019 at INTAN Kampus Wilayah Selatan (IKWAS) Kluang, Johor.

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13. ORAL HEALTH AND NUTRITIONAL STATUS OF CHILDREN WITH CEREBRAL PALSY IN NORTH EASTERN PENINSULAR MALAYSIA

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Aims: To investigate the oral health and nutritional status of children with cerebral palsy (CP) in North Eastern Peninsular Malaysia. **Methods and Results:** Oral health assessment included dental caries and dental plaque maturity scores (DPMS) while the nutritional assessment included children's height-for-age Z-score (HAZ), body mass index-for-age Z-score (BAZ), mid-upper-arm circumference (MUAC), nutrient intake, cariogenic food frequency (CFF) and daily sugar exposure (DSE). Ninety-three children with CP were recruited. The prevalence of caries was 81.7% (95% CI: 72.7%-88.3%). The median (IQR) of the DMFT and dft scores were 0.5 (4.0) and 3.0 (8.0), respectively. Most of the participants had acid-producing plaque (90.3%), severely stunted (81.4%), and 45% were severely thin with acute malnutrition. Intakes of calcium, iron, zinc, vitamin A, vitamin D and total fat were below 77% of the Recommended Nutrient Intakes for Malaysian children (RNI 2017). Nine types of cariogenic foods/drinks were consumed moderately, and DSE indicated that 45% of the children were at moderate risk of dental caries. **Conclusion:** Untreated dental caries, severe stunting and thinness were prevalent, and cariogenic foods/drinks were consumed moderately suggesting a moderate risk of caries. Therefore, controlling cariogenic food intake is crucial, but monitoring daily nutrient intake is needed for the optimum growth of children with CP.

Keywords: Children with cerebral palsy, nutritional status and oral health.

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14. ORAL HEALTH KNOWLEDGE, ATTITUDE AND BEHAVIOURS AMONG SECONDARY SCHOOL STUDENTS IN KUALA NERUS, TERENGGANU, MALAYSIA

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Objectives: The purposes of this study were to assess the level of oral health knowledge, and to obtain an overview of the attitudes and behaviours among secondary school children in Kuala Nerus, Terengganu, Malaysia. **Materials and methods:** A cross-sectional study was conducted from October 2018 to February 2019 in Kuala Nerus, Terengganu using self-administered questionnaires. A total of 235 secondary school students from 10 schools, aged between 13 to 17 years were randomly selected from the enrolment list given by the schools in order to participate in this study. **Results:** The mean oral health knowledge score was 6.66 with no significant difference between male and female students. Most of the students regardless of gender and age had poor knowledge about dental plaque but agreed that dental caries can affect aesthetics. Many students were driven to visit dentists due to dental pain. Almost half of the students visited dentists within the duration of 6 months. 60.43% of students brushed their teeth more than twice per day and about 40% of students spent 2 minutes for toothbrushing. Almost all students (98.7%) used toothpaste (with or without fluoridated toothpaste) for toothbrushing. Female students consumed sweet food more frequently while male students had soft drinks more often. **Conclusion:** Overall, the oral health knowledge and behaviours of the secondary school children in Kuala Nerus were still below satisfactory level, while attitudes were acceptable. Improvement in dental education is needed in order to enhance their oral health knowledge. However, better oral health knowledge does not necessarily lead to good dental behaviours. Further studies should be done to find out other factors that could influence dental behaviours.

Keywords: Oral health knowledge, attitude, behaviours, secondary schoolchildren

Oral presentation at National Oral Health Research Conference 2019 on 24-25 April 2019 at Eastin Hotel, Kuala Lumpur.

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15. ORAL HEALTH STATUS OF 5-YEARS-OLD PRESCHOOL CHILDREN: THE STATE OF KEDAH FINDINGS

Nama Bibi SAK, Khairol Niza A, Ting TP, Habibah Y, Natifah CS , Hasni MZ, Azura A, Rozihan MH, Yaw SL

Introduction: This poster presentation focused on findings on the oral health status and caries treatment needs of 5-years-old preschool children in Kedah, a subset findings of the National Oral Health Survey of Preschool Children (NOHPS 2015). **Objectives:** The objectives of the survey were to determine the prevalence and severity of dental caries, the prevalence of caries treatment need and oral cleanliness. **Methodology:** A multistage stratified sampling technique was performed at National level. Similarly the standardization and calibration training session of the examiners were also being carried out at national level. During the calibration conduct of the survey, examiners randomly selected and re-examined 5% of children to check for intra-examiner variability. Data were recorded in the Clinical Survey Form adopted from WHO and data entry was done using Microsoft Access 2013 format. Data were cleaned and Complex Sample Analysis using SPSS Version 20 was done to generate prevalence estimates with 95% CI. **Results:** Kedah state represent 4.6% of weighted (wt) sample size. The number of 5-year-old respondents from Kedah kindergartens was 1,049 (wt=12,420) with response rate of 92.4%. The prevalence of dental caries was 78.4% with mean dft=5.49 (5.14-5.85) and mean DMFT=0.004 ([-0.001]-0.008). Mean d=5.25, mean f=0.24, mean D=0.004, mean M & F=0. About 66% and 0.3% require dental treatment for deciduous and permanent teeth respectively. 64.7% need restorations and 13.7% need extractions for carious deciduous teeth. Majority of the children (65.7%) had little plaque. **Conclusion:** About 4 in 5 children had dental caries. Decayed (d) component remains high while filled (f) component is low, indicating continuing unmet caries treatment need. There was not much improvement in oral cleanliness among preschool children. It is recommended to strengthen preventive activities earlier in the toddlers group and to promote oral health literacy among young parents, ante-natal mothers and caregivers on maintaining of good oral health.

Keywords: 5-year-old preschool children, oral health status, caries treatment need

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16. PERIODONTAL KNOWLEDGES AND AWARENESS AMONG PATIENTS IN KULAI DENTAL CLINIC, JOHOR

Siti Aminah A, Chia CL, Nurbaiti MR, Nur Syariza AJ

Introduction: Periodontal diseases have become one of the global major oral health burdens in Malaysia. According to NOHSA 2010, 9 out of 10 Malaysian adults had periodontal disease. Hence, standard operating procedure for management of periodontal conditions in primary oral healthcare clinics was introduced in 2018 to identify periodontal health status of patients attending primary oral healthcare clinics by using Basic Periodontal Examination (BPE) as screening tool. Main objectives of this study were to assess patients' self-awareness and knowledge towards periodontal disease based on their self-experience and to assess patients' perceived knowledge and practice levels regarding periodontal health. **Methods:** A total of 121 adult patients aged 18 years and above who were randomly screened for periodontal status in Kulai Dental Clinic in 2019 were included in this study. Data were collected through a self-administered questionnaire with close-ended questions, which were already used and validated in AIMST University. **Results:** The awareness level towards periodontal health was low among patients in relation to symptoms causing periodontal problems. Majority of subjects noticed dental calculus (66%) and gingival bleeding (48%) as periodontal changes. Only 24 subjects (20%) correctly answered knowledge-related questions. This indicates poor periodontal health knowledge of the patients. A total of 39 patients (32.2%) had positive oral care practice even though they had poor knowledge level. **Conclusions:** This study clearly demonstrates that most of our participants had poor awareness towards periodontal health. There was significant relationship between patients with poor periodontal knowledge and lack of awareness. Majority of patients practice good oral hygiene care without proper knowledge. Therefore, reinforcement of oral health education is important in order to improve the awareness and maintain correct oral care practice among patients.

Keywords: Type II Diabetes, HbA1c, periodontal disease, risk factors, BPE

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17. PILOT STUDY- ABILITY OF SK BUKIT KALAM STUDENTS IN FT LABUAN MAINTAINING ORALLY FIT 6 MONTHS AFTER DENTAL INTERVENTION

Ashqinn DDA, Salim R, Nigel KJ, Shailaja KG, Naimah M, Afiqah H, Sharon SK

Introduction: Poor oral health can negatively impact a child's quality of life. Despite of receiving dental care and completion of dental treatment by all schoolchildren in FT of Labuan through School Mobile Dental Team, a need for dental treatment continually increased. This follow up cross-sectional study aimed to determine percentage of 8-11 year-old schoolchildren in SK Bukit Kalam maintaining orally fit 6 months after the completion of dental treatment. **Methods:** The schoolchildren were examined for the gingivitis, undiagnosed dental caries and compromised restorations. **Conclusions:** Hypothetically, 60% of students at SK Bukit Kalam can maintain orally fit 6 months after completion of dental treatment. It was apparent that 60% of students at SK Bukit Kalam can maintain orally fit 6 months after completion of dental treatment. Thus, improve the oral health status of students of SK Bukit Kalam.

Keywords: Pilot, Primary School Students, Oral Health Status

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18. READABILITY AND SUITABILITY OF ORAL HEALTH EDUCATION PAMPHLETS PRODUCED BY THE MINISTRY OF HEALTH MALAYSIA

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Introduction: Printed health education materials can only be effective if they are readable and suitable for the target audience. This study examined the readability and suitability of oral health education (OHE) pamphlets produced by the Oral Health Program (OHP), Ministry of Health (MOH) Malaysia. **Methods:** The Khadijah Rohani's Readability Formula (KRRF) and Suitability Assessment of Materials (SAM) instrument were used to assess the readability and suitability of the pamphlets respectively. All 23 Bahasa Malaysia pamphlets retrieved from the official portal of OHP on the 31st January 2019 were assessed for suitability. However, only five pamphlets were found to be eligible for readability assessment because the KRRF, the single formula available for Bahasa Malaysia text is applicable only for materials with 300 words or more. The readability is interpreted based on the level of formal education in Malaysia. **Results:** All pamphlets achieved superior suitability rating with a minimum and maximum score of 75% and 95% respectively. However, a few pamphlets did not fulfil SAM superior and adequate criteria for the following factors and were rated not suitable: did not include summary (73.9%), have few or no headers (4.3%), did not use captions to explain graphics (17.4%), and did not provide interactive learning (21.7%). Readability of the pamphlets eligible for assessment ranged from primary six to secondary three. **Conclusions:** OHE pamphlets produced by the MOH are readable by most Malaysians. Most pamphlets are generally suitable for the intended audience although a few performed poorly in several areas.

Keywords: Health education, oral health, pamphlets, readability, suitability, suitability assessment of materials, Malaysia

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19. STUDENTS' EXPERIENCES WITH ORAL HEALTH EDUCATION ACTIVITIES IN SECONDARY SCHOOL ORAL HEALTH PROGRAMME: A QUALITATIVE STUDY

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Introduction: Oral health education is a key element in oral healthcare for school children with the goal to improve knowledge, which may lead to adoption of favourable oral health behaviours that contribute to better oral health. Health education messages in schools were delivered by the dental teams yearly as part of incremental school programmes. **Objective:** This study was to explore the students' experiences with the oral health education activities at school and their suggestions for improvement. **Methods:** A qualitative study was conducted using focus group discussions (FGD). Four focus groups were recruited involving purposely selected 29 16-year-olds secondary schoolchildren in Kedah. Seven to eight participants were assigned in each and the discussions lasted between 30 to 45 minutes. Group discussions were carried out at school premises using open-ended questionnaire which were audio-taped, transcribed verbatim and analysed manually. **Results:** Generally, all participants agreed that brushing techniques was the main content of oral health education received during primary school ("We were told to brush our teeth correctly since standard one"...R29. Participants experienced oral health education in the form of health talks (lectures) in their secondary schools. In an effect to improve oral health education delivery at schools, most of the students recommended that it should be conducted as an interactive session involving small group of students and using an audio-visual aids. **Conclusion:** The finding of the study revealed that oral health education activities by the dental teams were being accepted by the students as a medium to gain knowledge on oral health messages. However, they suggested that the mode of delivery to be modified and made more attractive to suit the expectations of the present-day students.

Keywords: Oral health education, oral health programme, qualitative

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20. TEETH FOR LIFE: TRENDS OF ELDERLY AGED 60 WITH 20 OR MORE NATURAL TEETH (2005 -2017)

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Introduction: Older people present with higher number of missing teeth and lower number of remaining natural teeth. Studies have shown that tooth loss are associated with reduction in physical, psychological and social function as well as the ability to chew. Elderly with 20 and more natural teeth had better OHRQoL compared to elderly having less than 20 natural teeth. Over the years, the Ministry of Health (MoH) are committed to provide oral healthcare services at all stages of life so as to ensure better OHRQoL are achieved by the aging population. This report describes the trends of elderly Malaysian age 60 years old with 20 and more natural teeth, average number of natural teeth and edentulism from year 2005 to 2017. **Methods:** Service data were obtained from the e-reporting Health Information Management System (HIMS) Ministry of Health. These impact indicators were monitored annually. **Results:** There is increasing proportion of 60 years old with 20 and more natural teeth from 30.6% (2005) to 41.4% (2017). Similar trends were seen on the average number of natural teeth from 13 (2005) to 16.9 (2017). On the contrary, edentulism status are reducing each year from 16.0% (2005) to 8.2% (2017). **Discussion:** There is a steady improvement of proportion of elderly age 60 years old with 20 and more natural teeth. However, data is limited to elderly seen by the primary oral healthcare in MoH. The National Oral Health Target of 60% of 60 years old with 20 and more natural teeth by 2020 is still far reaching.

Keywords: 60 years old, 20 and more teeth, edentulism

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21. AN ASSOCIATION BETWEEN OF GENDER, ETHNICITY AND LOCATION OF SECONDARY SCHOOLCHILDREN AND DENTAL CARIES IN JEMPOL, NEGERI SEMBILAN

Liang HL, Afiza H, Muhammad Zulkefli R

Introduction: Dental Caries remains a major oral health problem among children. The key to caries management is prevention from young. Hence, the aim of this study was to determine an association between gender, ethnicity and location (urban/ rural) with dental caries among the secondary school children who receiving incremental dental care in Jempol District, Negeri Sembilan. **Material and Methods:** This 4 years retrospective cohort study consists of all secondary schoolchildren in Jempol of 4 years started in 2013. Each child's caries experience was recorded annually using Oral Health Survey (World Health Organization) criteria. Logistic regression was performed to analyse the association between gender, ethnicity, and location of residence (rural/urban) with dental caries. Significant level was set below 0.05. **Results:** The respondents consisted of 942 school children. Results showed significant association between dental caries with gender and ethnicity. However, it was not significantly associated with location of residence. Females were 1.39 times more likely to develop new caries than males (95% CI: 1.06-1.83). Compared to the Indian ethnic group students, the odds of developing new caries was 2.54 times higher for Malay (95% CI: 1.65-3.92) and 1.32 times higher for Chinese students (95% CI: 0.77-2.26). **Conclusion:** This study shown that dental caries is associated with gender and ethnicity but not with location of residence. The finding of this study can use to identify the risk group early in life and oral health services can be delivered tailor to their needs.

Keywords: Dental Caries, Oral Health Problem, Caries Prevention, Incremental Dental Care

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22. THE EFFECTIVENESS OF SECOND VISIT INTERVENTION IN INCREASING PERCENTAGE OF MAINTAINING ORALLY FIT (NTR) STATUS AMONG STUDENTS OF SMK SRI KUKUP, PONTIAN, JOHOR

Nur Fazireen N, Irna I

Introduction: No treatment required (NTR) achievement is one of the key performance index (KPI) under the surveillance of oral health programme and acts as quality objective for Johor State Oral Health Department. Since 2016, secondary schools under Serkat Dental Clinic had never achieved the target set and were the lowest percentage in Pontian district. Therefore, second visit intervention was done in Sekolah Menengah Kebangsaan (SMK) Sri Kukup in 2018 to help improve NTR percentage amongst schoolchildren. This study was conducted to determine the effectiveness of second visit intervention to increase NTR percentage amongst schoolchildren of SMK Sri Kukup. **Methods:** SMK Sri Kukup was selected to undergo second visit intervention. Form 1 to Form 4 students who received scaling treatment in 2018 were shortlisted and recalled for the second visit. Students were examined and those found to have calculus underwent scaling again. Comparison of NTR data was collected from the first incremental visit in 2018 and in 2019. **Results:** The percentage of NTR in SMK Sri Kukup in 2019 shows an increase to 74.8% from 66.8% in 2018. Compared to SMK Teluk Kerang which only recorded a NTR percentage of 68.1% in 2019 compared to 66.7% in 2018. The increase of NTR percentage in SMK Sri Kukup showed an escalation of 8% compared to SMK Teluk Kerang with 1.4% rise. The total number of scaling treatment given at SMK Sri Kukup also showed a decrease of 44.28% compared to 26.28% in SMK Teluk Kerang. **Conclusion:** The increase in the percentage of NTR was noticeable for SMK Sri Kukup which had second visit intervention compared to SMK Teluk Kerang which did not have any intervention. This step can be introduced to help in increasing percentage of NTR amongst schoolchildren.

Keywords: maintaining orally fit, NTR, KPI, incremental school visit

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23. THE EFFICACY OF ORAL HEALTH AND NUTRITION PACKAGE FOR CEREBRAL PALSY (ON-CP PACKAGE) MODULE IN IMPROVING THE ORAL HEALTH AND NUTRITIONAL STATUS OF CHILDREN WITH CEREBRAL PALSY IN KELANTAN

Rathmawati A, Normastura AR, Ruhaya H

Objective: To evaluate the efficacy of Oral Health and Nutrition Package for Cerebral Palsy (ON-CP Package) Module in improving the parents'/caregivers' oral health (OH) knowledge, attitude and practice (KAP), dental plaque maturity, dental caries experiences, nutritional status and dietary pattern of the children with CP in Kelantan. **Materials and methods:** A community intervention study, using the ON-CP Package Module, with the quasi-experimental design was done on children with CP aged 5-17 years registered at Community-Based Rehabilitation Centers in Kelantan, and their parents/caregivers. The sample size was 48 for each intervention (IG) and control group (CG). OHKAP was captured using the OHKAP questionnaire. Dental plaque maturity score (DPMS) of the children was determined using GC Tri Plaque ID Gel®. Caries experiences were determined using DMFT/dft index. Assessment of nutritional status involved the height-for-age, body mass index-for-age Z-score, mid-upper-arm circumferences (MUAC), 24-hour diet recall, cariogenic food frequency (CFF) and daily sugar exposure (DSE) scores. Statistical analysis was done using IBM SPSS version 24.0. Descriptive analysis and repeated measures ANCOVA were used. Significant level was set at $P < 0.05$. **Results:** Total pairs of 93 children with CP and their parents/caregivers (IG = 45, CG = 48) were recruited. Mean (SD) age of the children in IG and CG were 11.9 (4.77) and 12.1 (5.04) years, respectively. More than half of the parents/caregivers with secondary education level and the median (IQR) monthly income in the IG and CG were RM1300 (975) and RM1425 (1763), respectively. Comparisons between pre- and post-intervention results show significant increases of OH knowledge scores ($P = 0.001$), KAP scores ($P = 0.002$) and tooth surfaces with acquired pellicle ($P = 0.005$) in the IG compared to the CG. There were also significant decreases of DPMS ($P = 0.007$), CFF ($P = 0.001$) and DSE ($P = 0.045$) scores in the IG compared to the CG. No formation of new caries was found in the IG. Despite no significant differences, improvements in MUAC, energy intakes and reduce sugar intakes were observed in the IG. **Conclusion:** ON-CP Package Module was effective in improving the OHKAP which promotes the decrease in DPMS, increase in nutritional status, as well as control the caries development, CFF and DSE of the children with CP.

Keywords: Children with cerebral palsy, KAP, oral health and nutritional status.

Research Report Submitted in Partial Fulfilment of the Formative Assessment for the Research Project Course (GGA 609) Doctorate in Dental Public Health Program, Universiti Sains Malaysia.

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24. THE IMPACT OF SUPERVISED TOOTH BRUSHING DRILL IN IMPROVING THE ORAL HEALTH STATUS OF SCHOOLCHILDREN. A THREE-YEAR RETROSPECTIVE STUDY

Aun KV, Azhani I

Introduction: Several studies indicate that daily tooth brushing drill (TBD) using fluoride toothpaste reduces caries if the practice is commenced early and becomes a routine. **Objective:** The purpose of this study is to assess the impact of daily supervised TBD by teachers on the oral health status of school children in terms of mean DMFT and net caries increment after three years implementation. **Methods:** This is a retrospective cohort study involving 7 to 9-year-old primary schoolchildren (n=52) in Sekolah Jenis Kebangsaan Cina Pangkalan Bukit, Muar District. Supervised TBD by teachers was performed daily after lunch time for all schoolchildren using fluoridated toothpaste in 2015 (baseline) to 2018. Sociodemographic and oral health status data were extracted from the Oral Health Clinical Information System (OHCIS). Analysis of the oral health status of the schoolchildren after 3 years implementation of the supervised TBD was performed using SPSS version 22. **Results:** The lowest mean DMFT was among the 8-year-olds (0.15 in 2018 compared to 0.08 in 2015) and net caries increment was 0.07. The 7-year-olds reached a mean DMFT of 0.24 in 2015 compared to 0.12 at baseline. While the highest mean DMFT was among the 9-year-olds (0.41 in 2018 compared to 0.06 in 2015) and net caries increment was 0.35. However, there were no significant findings on mean DMFT at baseline and after 3 years implementation within and between the age groups (p value > 0.05). **Conclusion:** This study showed that supervised TBD by teachers had positive impact in reducing caries among school children.

Keywords: tooth brushing drill, primary schoolchildren, caries increment

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25. THE IMPACT OF UNRESTORED DECIDUOUS TEETH ON ORAL HEALTH RELATED QUALITY OF LIFE (OHRQOL) AMONG PRESCHOOL CHILDREN IN PONTIAN, JOHOR

Sabrina Julia MJ, Nasruddin J

Introduction: SUnrestored deciduous teeth caries among preschool children remains one of the most prevalent childhood dental conditions. This condition may impact on quality of life among preschool children and their families. **Objective:** The purpose of this study was to assess the prevalence of early childhood caries (ECC) and to assess the impact of unrestored deciduous teeth on oral health related quality of life (OHRQoL) among 5-6 years old preschool children in Pontian District, Johor. **Methods:** This was a cross-sectional study, conducted on randomly selected 5-6 years old preschool children attending KEMAS preschool in Pontian District, Johor. Parents / guardians of 283 children answered the validated Malay-ECOHIS. A simple oral examination was performed to evaluate unrestored and restored deciduous teeth and dmft was recorded. OHRQoL was measured through Malay-ECOHIS items based on parents / guardians perceptions of the children's impacts on OHRQoL. OHRQoL impacts were further dichotomised into 'low impact' and 'high impact'. Data was analysed by descriptive analysis, independent t-test and ANOVA. **Results:** Caries prevalence among the 5-6 years old preschool children was 69.6% with mean dmft 3.0 (SD=3.5). Malay-ECOHIS score ranged from 0 – 32 with a mean score of 3.75 (SD=4.9). Parents / guardians reported more impacts on child's OHRQoL than that of family impacts. Distribution of 'high impact' OHRQoL was very low. In each domain, impacts on OHRQoL in children with unrestored deciduous teeth showed no significant difference with children who had restored teeth. **Conclusion:** Prevalence of dental caries was high at 69.6%. The impact of unrestored deciduous teeth among 5-6 years old preschool children was found to have significantly low level of negative impact on OHRQoL of the children and their families. This showed that unrestored deciduous teeth in preschool children did not cause major problems to children and their families. The present study may be taken as further supporting evidence that a preventive care intervention approach in dealing with deciduous teeth caries may be a better and cheaper option than active restorative intervention approach in preschool children.

Oral presentation at the National Oral Health Research Conference 2019 on 24-25 April 2019 at Eastin Hotel, Kuala Lumpur.

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26. THE PREVALENCE OF ORTHODONTIC TREATMENT NEED IN SCHOOLCHILDREN IN WP LABUAN: A PILOT STUDY

Nurfarieza J, Ngu JKL, Nurul Izzati Z, Teh WQ, Ashwini S

Aim: To find the prevalence of orthodontic treatment need (IOTN 4 &5) of schoolchildren in Labuan. **Materials and Method:** A number of 97 students (43 boys and 54 girls) samples were conveniently selected from SMK Lajau, Labuan. A cross-sectional survey of dental health component (DHC) of the Index of Orthodontic Treatment Need (IOTN) and malocclusion problems were investigated by clinical examination. The examination was performed by a single calibrated examiner using mouth mirror, probe, millimeter ruler with patients seating on a portable dental chair under adequate lighting. **Results:** Levels 4 and 5 of orthodontic treatment need according to DHC of IOTN of the sample were presented in 30.90% and 3.09% respectively. A grade 1 IOTN score which indicated normal occlusion was observed in 24.7% of the sample. Grade 2 and grade 3 IOTN which indicate little need and moderate need for treatment were observed in 15.5% and 30.9% respectively. **Conclusion:** High percentage of schoolchildren who need orthodontic treatment (IOTN 4 & 5) was found in this study. This necessitates proper education and motivation to undergo orthodontic treatment.

Keywords: IOTN, schoolchildren, pilot study, Labuan

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27. EFFECTIVENESS OF KOTAK (KESIHATAN ORAL TANPA ASAP ROKOK) PROGRAMME IN KEDAH: 3 YEARS EVALUATION

Jamaliah O, Fauziah A

Introduction: *"KOTAK"* (*Kesihatan Oral Tanpa Asap Rokok*) Programme was one of the national health promotion programmes towards achieving national strategic plan for smoke free generation (end game) to less than 5% smokers by 2045. In state of Kedah, this on-going programme was started in 2016. **Aim/Objective:** To determine smoking status of schoolchildren in Kedah over the period of 2016 to 2018 and their participation in smoking cessation intervention. **Methodology:** This is a retrospective study involving all schoolchildren in Kedah. They were screened for signs and symptoms of smoking and further categorized into 4 categories namely active smoker, former smoker, passive smoker and non-smoker. Brief advice was given to all schoolchildren on the risk of smoking and the benefit of being free from tobacco. Active smokers were referred to participate in an advanced intervention programme for cessation of the habit. Advance intervention was conducted by trained personnel using non-pharmacological approach. The three years data was gathered retrospectively and descriptive analysis was done on prevalence of active smokers, students who participated in the intervention and who attempted to quit the habit. **Results:** Almost 100% of primary and secondary schoolchildren were screened in the KOTAK Programme since 2016. The prevalence of active smokers among primary schoolchildren in 2016 and 2017 was similar at 0.3% and reduced to 0.1% in 2018. Among the secondary schoolchildren, the prevalence of active smokers was 4.5%, 4.1% and 3.6% in 2016, 2017 and 2018 respectively. The prevalence of primary schoolchildren involved in intervention in 2016 was low (2.8%) and increased to 77.6% in 2017 and 87.3% in 2018. A similar remarkable increasing trend of participation in intervention was observed among the secondary schoolchildren over the three years period; respectively in 2016 (9.9%), 2017 (52.6%) and 2018 (85.7%). Percentage of students attempted to quit smoking has increased from 2016 until 2018 for both primary and secondary schoolchildren. **Discussion:** Decreasing in prevalence of smoking among schoolchildren over the period of three years highlights a good sign towards smoke-free nation by 2045. There is an increasing number of students participated in the smoking cessation intervention as well as students attempted to quit smoking introduced through KOTAK Programme since it was implemented in 2016. **Conclusion and Recommendation:** The prevalence of smoking among schoolchildren in Kedah has declined from 2016 to 2018. It is recommended to follow-up the schoolchildren that attempt to quit until 6 months to confirm the success of the action taken.

Keywords: KOTAK, Kedah, School Children

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28. EFFECTIVENESS OF "TELL, SHOW, DO" APPROACH AMONG SELECTED PRIMARY SCHOOLCHILDREN WITH GINGIVAL INDEX SCORE: 3 IN KULAI DISTRICT, JOHOR

Aqilah AB, Nur Syariza AJ, Narmatha G

Introduction: Periodontal disease is one of the most prevalent oral among schoolchildren. The National Oral Health Plan sets a target of 95% healthy periodontium for 12-year-old schoolchildren by the year 2020 (NOHP). **Objective:** To determine effectiveness of "Tell, Show, Do" approach among primary schoolchildren with GIS Score: 3 in Kulai District, Johor. **Methods:** This was a cross sectional study involving 9-12 years-old schoolchildren with GIS Score: 3. A total of 134 primary schoolchildren of GIS Score: 3 were examined for gingival health status using Gingival Index Score. Prior to commencement of this study, written consents were obtained from the Teacher-in-charge of the class. A structured questionnaire on oral health behaviour was also distributed to the schoolchildren involved. Two subsequent evaluation visits were performed within a month and three months following first visit for GIS Score examination. **Results:** Of 135 schoolchildren with GIS Score: 3, the majority were females (53.3%, n=72) while 46.7% (n=63) males. Following the evaluation visits, the prevalence of schoolchildren with GIS Score: 0 increased from 53% to 61.2%. In relation to oral health behaviour, most of the schoolchildren brushed at least two times daily (50%) and majority used horizontal tooth brushing technique (57%). **Conclusions:** The 'Tell-Show-Do' approach in oral health care benefits most of the schoolchildren improving gingival health care. Continuous monitoring of the situation is needed to achieve sustainability of the improvement.

Keywords: Periodontal disease, Gingival Index Score, Tell-Show-Do

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29. TODDLER ORAL HEALTHCARE PROJECT

Munirah P, Noormi O, Rozihan MH, Nursharhani S

Introduction: Toddlers are one of the major target group under the primary oral health care programme of the Ministry of Health. Due to the growing number of toddlers with increasing need for dental care in Selangor. The delivery of a comprehensive oral health services by Selangor Oral Health Division (SOHD) to the toddlers, especially in private facilities was limited. **Issues:** In 2018, SOHD covered about 226 TASKAs (29.7%) of the total registered TASKAs with Persatuan Pengusaha TASKA Selangor. The financial, human resources and time constraints contributed to the lower coverage of TASKAs by the SOHD. The main objective of this project is to increase toddlers coverage in private TASKAs by private dental practitioners. **Implementation methods:** This project is planned in collaboration with the Malaysian Dental Association (MDA), the Malaysian Private Dental Practitioners Association (MPDPA), Persatuan TASKA Selangor, private company and private dental practitioners. Private dental practitioners will choose the TASKAs from the list provided. SOHD personnel provide training in terms of screening and oral health promotion activities refer the toddlers to dental clinic if required. They need to collect data from the activities and submit to SOHD for the compilation, data analysis and subsequent monitoring. **Results/Outcomes:** At the beginning, only one private dental clinic is interested to join this project. To date, 2 dental practicioners from the clinic have done the activities at two TASKAs. 33 toddlers have been screened and 12 of them have been refered for further treatment. **Discussions:** This project will assist to improve oral health status among toddlers. There is no financial involvement from SOHD in this project. SOHD is going to present this project to Malaysia Dental Council (MDC) for Continuing Professional Development (CPD) claim points. **Conclusion:** This collaboration and integration project will be implemented comprehensively throughout Selangor upon approval of Program Kesihatan Pergigian, Kementerian Kesihatan Malaysia.

Keywords: Toddler, Oral Healthcare

Poster presentation at the Health Promotion Scientific Symposium on 1-2 October 2019 at National Institute of Health (NIH) Setia Alam, Selangor.

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30. TOOTH BRUSHING BEHAVIOURS AND DENTAL ABRASION AMONG WALK-IN PATIENTS IN MARANG, TERENGGANU

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Objectives: The objectives of the study were to determine the relationship between tooth brushing behaviours and dental abrasions among the walk-in patients in Marang, Terengganu. **Methods:** This cross sectional study had involved 130 patients (66 men; 64 women) whom participated in the questionnaire based study. The targeted abrasion patients' population aged from 18-80 years have been reported to Klinik Pergigian Marang or Wakaf Tapai. The subjects have been assessed using specific intra-oral charting called Knight&Smith Tooth Wear Index TWI) Scoring on various tooth surfaces. Followed by that the patient was required to answer the questionnaire which included demographic details and common factors attributed to dental abrasion. **Results:** Abrasion was recorded almost proportionate between the men (50.8%) and women. 13,670 surfaces were examined in 3424 teeth. Surfaces with tooth wear scored were 1844. Fifty-four patients who have brushed their teeth with an unspecific manner. Whereas, 111 subjects have used medium or hard typed toothbrush. More than 90 patients believed in aggressive brushing. **Discussion:** Most subjects were unsure of the correct brushing technique hence they have practiced multi directional or unspecific way. On top of that, more than half of the respondents uses medium and hard typed of tooth brush and this consequently have worsened the degree of abrasion. Surprisingly, three-fourth of the subjects believed in aggressive tooth brushing in order to remove plaque from tooth surfaces. This has ingrained inadvertent oral care habit which is also known as vicarious learning. **Conclusion:** Dental abrasion has increased with poor tooth brushing behaviour therefore is crucial to educate the patients the correct manner.

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RESEARCH IN ORAL & MAXILLOFACIAL SURGERY

31. A-5 YEAR REVIEW OF MANDIBULAR CONDYLE FRACTURES IN HOSPITAL KAJANG, SELANGOR

Sharifah Munirah AI, Aezy Noorazah O, Muhammad Amir Firdaus WH, Noor Nadia MS, Alia NMJ

Aim: This study was conducted to investigate the etiology, incidence, pattern, management and outcomes of mandibular condyle fractures cases treated in Hospital Kajang, Selangor. **Methodology:** This was a retrospective and descriptive study over a period of 5 years between January 2013 and December 2017. A total of 1,845 patient's records for oral maxillofacial trauma were reviewed. Among these patients, 184 were reported with mandibular fracture and among those, 64 had mandibular condyle fractures. **Result:** The mandibular condyle fractures cases were mainly caused by motor-vehicle accidents. Commonly involved in males than females and those who aged between 16 and 40 year olds. The management of these fractures were mainly influenced by patient preference, financial situation and the presence of occlusal derangement. **Conclusion:** The mandibular condyle fracture is a common incidence and early treatable fracture surgical repair is not always necessary and usually depends on patient function and deformity.

Keywords: Mandibular condyle fracture, Hospital Kajang, Oral maxillofacial trauma.

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32. A 10 YEARS RETROSPECTIVE STUDY OF ORAL CANCER CASES IN ORAL MAXILLOFACIAL SURGERY DEPARTMENT, QUEEN ELIZABETH HOSPITAL, KOTA KINABALU, SABAH, MALAYSIA

Han FS, Lim CM, Wong LV, Marzuki ZA

Purpose: This retrospective study aims to present a 10 year overview of oral cancer at Oral Maxillofacial Surgery Department, Queen Elizabeth Hospital. **Methods:** All patients with histologically confirmed malignant oral lesions from 2005 till 2016 were enrolled. Data were extracted with a standardized data collection form, which included patient's demographic background, habits practiced, clinical and histopathological features, types of treatment, reasons patients refused treatment and management outcome. Kaplan-Meier method was used to analyze the 5-year survival time and rate. **Results:** Squamous cell carcinoma (SCC) was the most common oral cancer. It has a slight female predilection and was found mostly in patients with a mean age of 60±14.22-years-old and among the Dusun ethnicity. Majority of patients (74.8%) showed no functional deficit and few (12.6%) had pre-malignant lesions. Most of the SCC was found in stage IV (59.1%) and tongue was the common site (49.9%). One third of (37.4%) of patients received surgical excision and half of them underwent neck dissection. The 5-year overall survival rate was 50.9% and the survival time for those patients who received surgery, palliative management, concurrent chemo-radiotherapy and refused treatment were 77, 15, 12 and 30 months respectively. **Conclusions:** SCC and salivary gland malignancy were the two most common oral malignancies in this 10 year cohort. The five year survival outcome for SCC was poor when patients presented at stage IV. Surgery remained the treatment of choice and survival expectancy was significantly prolonged with surgical intervention.

Keywords: Oral cancer, oral malignancy, survival rate, Queen Elizabeth Hospital

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33. A DESCRIPTIVE STUDY OF ORAL LICHEN PLANUS AND ORAL LICHENOID REACTION IN PAHANG

Joanne Goh PE, Abdul Rahim A, Khairulzaman A

Oral lichen planus (OLP) is a chronic autoimmune, mucocutaneous disease affecting the oral mucosa mainly idiopathically. As for Oral Lichenoid Reaction (OLR), lesions are histologically and clinically similar to OLP though with particularity that in these cases the underlying cause is identifiable. This study aims to obtain the demographic data of patients with OLP and OLR as there is no data in Pahang regarding this condition. This retrospective, descriptive cross sectional study will involve retrieval of clinical record data from existing Oral Pathology and Oral Medicine (OPOM) patient records of the year 2014-2017 from HTAA (Hospital Tengku Ampuan Afzan) Kuantan and HoSHAS (Hospital Sultan Haji Ahmad Shah), Temerloh. Of 55 patients' records, 36(65.5%) were females and 19 (35.5% males with the mean age of 47.6. Among those, the majority 67.3% (n=37) were Malays, 10.9% (n=6) were Chinese, Indians 18.2% (n=10) and 3.6% were others races (n=2). The majority (42 patients) presented with reticular form at the buccal site of mucosa. As for the treatment modalities, 7(12.7%) patients are using adjunct treatment only, 38 (691%) patients taking topical steroids and adjunct and lastly 10 (18.2%) patients were on topical, systemic and adjunct treatment. This study elucidates the demographic data of OLP/OLR patients in Pahang, which has similar patterns to other studies. However, it is noted that the sample size is small hence this study should be regarded as a pilot study and may serve as groundwork for future researches.

Keywords: Oral Lichen Planus (OLP), Oral Lichenoid Reaction (OLR)

Presented at East Coast Research Day 2019 on 8-9 October 2019 at Taman Tamadun Islam, Kuala Terengganu, Terengganu.

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34. A GIANT SUBLINGUAL EPIDERMOID CYST EXCISED BY INTRAORAL APPROACH: A CASE REPORT

Nur Hafizah HZ, Sharifah TA, Nury Y, Ajura AJ

Introduction: Epidermoid cysts represent less than 0.01% of all oral cavity cysts. Most occur at the mouth floor but are very rare, normally shows squamous epithelial lining with fibrous wall with no skin appendage. We defined a giant epidermoid cyst located in sublingual region, mimicking plunging-ranula and discussed its surgical treatment. **Case report:** A 17-year old boy presented with history progressive swelling since childhood of sublingual region with dysphagia, progressive snoring during sleep, speech disturbances, occasional shortness of breath and orthopnea. Clinical evaluation showed double chin appearance, with visible and palpable firm and hard mass swelling of sublingual region, with no signs of inflammation, and swallowing was limited. There was minimal tongue displacement and fall posteriorly, tongue movement was limited anteriorly and no mucosal abnormalities. **Discussion:** The gold standard treatment method for epidermoid cysts is surgical excision. Surgical approach varies depending on localization and size of the cyst. Epidermoid cysts may be removed with intra-oral excision and large cysts may be excised both with internal and external approaches. If the cyst is too large to remove, cyst content is evacuated and may be dissected after its volume is lessened. Marsupialization may be another treatment option for very large cysts. Epidermoid cyst measuring 6.5 x 6 cm and weighing 93gr was excised with intra-oral approach as a whole in our patient. **Conclusion:** Sublingual epidermoid-cysts are very rare findings in oral cavity. In such cases, surgical excision remains the only treatment. The lesions above the mylohyoid muscle are approached intraorally and preferred for cosmetic purposes.

Keywords: sublingual epidermoid cyst

Oral presentation at the 23rd Annual General Scientific Meeting 2019 Malaysian Association of Oral and Maxillofacial Surgeons on 22 – 24 March 2019 at Hyatt Kuantan Regency.

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35. A RARE CASE OF MULTISYSTEM LANGERHANS CELL HISTIOCYTOSIS IN AN ADULT WITH PATHOLOGICAL FRACTURE OF MANDIBLE: A CASE REPORT

Khoo SE, Mukhriz H, Yuen KM

Introduction: Langerhans cell histiocytosis (LCH) is a rare proliferative disease which is rare among adults, with an estimated 1-2 cases per million adult populations. LCH may involve multiple organs, however in the maxillofacial region, it often affects the skull and jaws including the oral soft tissue. The etiology and pathogenesis of LCH is unclear. **Case report:** We present a case of a 28-year-old Malay male presented with a complaint of pain in the left lower jaw. He had undergone multiple tooth extraction due to mobility and pain. Clinically the oral mucosa around the extraction socket were inflamed and ulcerative. OPG showed multiple punched out radiolucencies on the maxilla and mandible. Histopathological examination (HPE) and computed tomography (CT) reported it as LCH. Patient was referred to haematologist and was planned for systemic chemotherapy, however he defaulted his follow-up. He was presented to us again about a year later with a pathological fracture at the symphysis region. He was then admitted under the Haematology Unit and underwent chemotherapy. On the last review, OPG showed spontaneous unification of the fractured mandible and overall significant reduction of the radiolucent lesions.

Keywords: Langerhans cell histiocytosis (LCH), Histocytosis X, Eosinophilic granuloma, Floating Teeth, Periapical lesion, Osteolytic Lesion, Pathological fracture, Spontaneous union

Presented at National Oral Health Research Conference 2019 on 23-24 April 2019 at Eastin Hotel, Kuala Lumpur.

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36. A RARE TUMOUR OF THE FACE: PRIMARY MUCOUS / MUCINOUS CARCINOMA AT LEFT INFRAORBITAL REGION

Nur Izzah CMH, Ahmad Kamal TZ

Background: Primary mucous / mucinous carcinoma is a rare tumour that is a subtype of sweat gland carcinoma and associated with high recurrence rate following simple excision. **Objective:** To report a case of an elderly gentleman with primary mucous/mucinous carcinoma of the skin at the left infraorbital region. **Case summary:** A case of 69-year-old Malay gentleman who was presented with a painless lump on his left infraorbital region for a 1-year duration which was slowly increasing in size. Patient's past medical history and general condition were not remarkable. Clinically, the lump was round, firm with the smooth surface, translucent yellow-reddish in colour, 2 centimeters in diameter, movable with intact vision and normal eye opening. **Methods:** Incisional biopsy was done and histopathological examination was consistent with a primary mucous carcinoma. Wide excision of the tumour was carried out and the defect was reconstructed with local rotational flap. **Results:** Computed Tomography imaging reported no evidence of nodal and distant metastasis. Histologically show nest of tumor cells appear to be floating within a pool of mucin. The tumour cell consists of bland basaloid epithelium with vesicular nuclei and amphophilic cytoplasm with an inconspicuous intercellular outline. The tumour cells are strongly positive for CK7 and negative for CK20. **Conclusion:** A primary mucous/mucinous carcinoma can be mistaken for a benign tumour due to its clinical presentations and underreported cases. Simple excision of the tumour is highly associated with high rate of recurrence.

Keywords: Primary mucinous / mucous carcinoma, rare skin tumour, local rotational flap

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37. A REVIEW OF MANDIBULAR CONDYLAR FRACTURES IN HOSPITAL KAJANG, SELANGOR – MANAGEMENT AND TREATMENT OUTCOME

Sheela R, Aezy Noorazah O, Sharifah Munirah AI

Introduction: Condylar fractures are one of the common fractures of the mandible. As mandibular fractures may impair aesthetics and function, an appropriate treatment is required to reconstruct the function. Despite this, its treatment still remains controversial. **Objective:** This is a retrospective study aimed to evaluate the management and treatment outcome of patients who sustained mandibular condyle fractures and being treated in Hospital Kajang, Selangor over a period of two and half years between January 2017 to June 2019. **Methods:** All patients with mandibular condylar fractures and complete clinical records from a period of 30-365 days post treatment were included in this study. Patients with incomplete data and had transferred to another centre were excluded from this study. The patients were treated either with open surgery via retromandibular approach, endoscopic assisted repair, closed reduction or conservative management. The parameters assessed were mouth opening, occlusion, chin deviation on mouth opening, temporomandibular joint disorders, facial nerve weakness and inferior alveolar nerve reduced sensation. The data obtained was subject to descriptive analysis. **Results:** There were a total of 44 patients presented with mandibular condylar fractures with a total of 51 fractures. Data only being retrieved from 27 patients whom had complete data with a total of 30 fractures. However, of these, 3 patients underwent open surgery via retromandibular approach, 6 had endoscopic assisted repairs, while 10 and 8 patients had closed reduction and conservative management respectively. All the four methods of open surgery have a higher prevalence of males and cause of injury by road traffic accidents. Differences in the outcomes assessed was minimal. **Conclusion:** There were minimal differences in terms of function experienced by the patients who were subjected to various type of treatment of condylar fracture and the outcomes assessed are relatively satisfactory to the patient. However, it was recommended to embark in a study with longer time frame for further assessment.

Keywords: mandibular condylar fracture, open surgery, endoscopic assisted repair, closed reduction, conservative management.

Oral presentation at the 2019 Malaysia-China Conjoint Conference of Oral and Maxillofacial Surgery: ''Navigating the Future in Oral and Maxillofacial Surgery'' on 17-18 August 2019 held at Hospital Canselor Tuanku Muhriz, Cheras, Kuala Lumpur.

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38. A REVIEW ON ORTHOGNATHIC SURGERY IN HOSPITAL SULTANAH AMINAH, JOHOR: A DECADE EXPERIENCE

Nor Adilah MN, Chua MH, Rosliza P, Ma BC

Introduction: Orthognathic surgery is the state of art today. It can have dramatic changes on many aspects of life by improving the quality of life of patients in terms of enhanced oral function, facial esthetics and well-being. This was a 10 years retrospective review on orthognathic surgeries performed at Hospital Sultanah Aminah, Johor Bahru. This review summarize total orthognathic cases performed, types of surgery, total blood loss intra-operatively, duration of hospitalisation, duration of operation and operation complications. **Methods:** The orthognathic surgery cases performed from 2009 to 2018 were retrieved from anolog medical records. A total of 55 bimaxillary osteotomies and 60 bilateral sagittal split osteotomies cases were included in this study. Bimaxillary osteotomy cases comprised of Le Fort I osteotomy and bilateral sagittal split osteotomy of the mandible. Data were collected from their analog medical records. **Results:** Among those in the bimaxillary osteotomy cases category, there were 26 males and 29 females, predominantly with Chinese ethnicity and mean age of 24. Of these, the majority (n=49) had Class III skeletal deformity with median operation duration and hospitalization were 4.5 hours and 4 days respectively. More than half (61%, n=34) had a neurological deficit. In bilateral sagittal split osteotomy category, there were 21 male and 39 female patients, Chinese predominantly, with a mean age of 25. Of the 60 patients, majority (n=49) had Class III skeletal problem. Median operation duration was 2.5 hours; median duration of hospitalisation was 3 days. In this category, 62% (n=37) of patients had neurological deficit. **Conclusion:** The majority of patients who underwent orthognathic surgeries had Class III skeletal pattern, dubbed as the most unacceptable skeletal deformity with common complication was paraesthesia of lower lip and chin.

Keywords: orthognathic surgery, clinical audit

Oral presentation at the 2nd Johor Oral Health Research Conference 2019 “Probe the Evidence” on 20-21 November 2019 at INTAN Kampus Wilayah Selatan (IKWAS), Kluang, Johor.

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39. AN AUDIT ON PATIENTS' WAITING TIME WITH THE USAGE OF MODIFIED TRAY-ATTACHED WHEEL CHAIR AS A DENTAL CHAIR IN ORAL AND MAXILLOFACIAL SURGERY DEPARTMENT, HOSPITAL KAJANG, SELANGOR

Muhamad Azim CA, Muhmmad Amir Firdaus WH, Aezy Noorazah O, Sharifah Munirah AI

Introduction: Patients' waiting time had increased due to shortage of dental chair in the department. Oral and Maxillofacial Surgery Department (OMFS) Hospital Kajang has introduced tray-attached modified wheel chair as a dental chair to minimize the problem. **Methods:** Wheelchair is modified and tray is attached to it. The tray-attached wheelchair is used as a dental chair to examine and review patients. Prospective study on patients' waiting time without the presence of tray – attached and with the presence of tray – attached wheelchair was done for 2 weeks. **Results:** By using tray attached wheelchair can slightly reduce the patients' waiting time. With the tray-attached wheelchair average waiting time is about 22.65 mins. Without the tray-attached wheelchair the average of waiting time is 25.49 mins. Average difference about 3 minutes. **Conclusions:** Use of tray-attached wheelchair reduced patients' waiting time for clerking new case, suture to open (STO), review, oral toilet and wound toilet can be done.

Keywords: Wheelchair, Waiting Time

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40. ANTERIOR SLIDING HEMITONGUE FLAP: A TREATMENT OPTION FOR POSTERO-LATERAL TONGUE DEFECT

Siti Nur Hidayah Y, Aezy Noorazah O, Mohammad Adzwin Y, Sharifah Munirah AI

Introduction: Oral cancer is one of the most common cancers. In Asian countries, the incidence of tongue cancer remains significantly high. Squamous cell carcinomas of the tongue often arise at midlateral or at posterior base of the tongue. Reconstruction of the posterior tongue defect following posterior hemiglossectomy poses a challenge to the surgeon. Various options of reconstruction often result in distortion and impaired function of the tongue. **Case Report:** This report presents an anterior sliding hemitongue flap which was performed on 70-year-old lady. She was diagnosed with squamous cell carcinoma of the right postero-lateral tongue. The tumor measures about 2.5 cm x 1.5 cm with everted margin and indurated. Wide tumour resection and a selective bilateral neck dissection was performed. The postero- tongue defect was reconstructed with above method. **Discussion:** Resection of a T2 tongue tumor with the sliding anterior hemitongue flap provided near normal functional and aesthetic outcomes. Speech is intelligible and articulate. Deglutition is normal, as is the control of saliva and food in the posterior cavity.

Keywords: Oral cancer, tongue cancer, hemitongue flap, squamous cell carcinoma.

Oral presentation at 1st Joint Specialist Conference 2018 "Dental Specialties: Together Towards A Successful Tomorrow" on 9-11 March 2018 at Hotel Istana Kuala Lumpur.

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41. BLOOD LOSS IN ORTHOGNATHIC SURGERY

Gerald J, Sivakama Sunthari K, Rusdi AR, Muhamad Ropi M, Nur Zahirah AR, Kam CE

Background: Patients undergoing Orthognathic Surgery may experience abundant blood loss and may require blood transfusion. The objective of this study is to determine the factors that may affect the intra-operative blood loss in a Malaysian population. Thus we may be able to predict the need for blood preparation for the surgery. **Material and methods:** This retrospective study included 50 patients that underwent four types of Orthognathic procedures; Bimaxillary Osteotomy, Bimaxillary Osteotomy with Genioplaty, Maxillary Osteotomy and Mandibular Osteotomy from 2014 – 2018 at our Centre. The parameters considered were the age, gender, duration of the surgery, BMI and the position of Inferior Neurovascular bundle. These parameters were analyzed using SPSS. **Results:** 50 patients were analyzed of which 20 (40%) were males and 30 (60%) females with mean age of 23 ± 7.6 years. The mean blood loss was 587.0 ± 283.89mL. There were no difference in intra-operative blood loss between the genders, type of surgery and BMI. Using the Fisher's Exect test, there is a significant difference with the duration of surgery (x^2 =5.980, p =0.048) and the position of Inferior Neurovascular bundle (x^2 =16.884, p < 0.01). Pearson Correlation shows duration of surgery is moderately correlated with the intra-operative blood loss (r=0.320, p=0.023). **Conclusions:** There is a positive correlation between duration of surgery and estimated blood loss and the position of Inferior Neurovascular bundle was associated with the intra-operative blood loss.

Keywords: Orthognathic Surgery, Blood Loss

Won 1st Place for Poster Presentation under Research Category presented at the 23rd Malaysian Association of Oral & Maxillofacial Surgeons (MAOMS) Annual General Meeting 2019 "Pushing Frontiers, Broadening Horizons" on 22-24 March 2019 at Hyatt Regency Hotel, Kuantan, Pahang.

Dr. Gerald Joseph
Dr. Sivakama Sunthari Kanagaratnam
Dr. Rusdi bin Abd Rahman
Dr. Muhamad Ropi bin Mamat
Dr. Nur Zahirah binti A Rahim
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42. CALCITONIN NASAL SPRAY AS AN ALTERNATIVE THERAPY FOR CENTRAL GIANT CELL GRANULOMA OF THE JAW: A CASE REPORT

Vethanayaki K, Sivakama Sunthari K, Rusdi AR, Muhamad Ropi M, Gerald J

Introduction: Central giant cell granuloma (CGCG) is a benign intraosseous lesion of the jaws that is found predominantly in children and young adults. CGCG is a relatively uncommon pathological condition accounting for less than 7% of all benign lesions of the jaws. The regular treatment includes aggressive enucleation curettage, peripheral ostectomy or resection, which may be associated with loss of teeth and, in younger patients, loss of tooth germs. A number of alternative nonsurgical approaches have been advocated in current years for the management of CGCG. Calcitonin administration has been one of the therapies used. **Case report:** This is a case report of an 11-year-old boy who first presented at another clinic with right facial swelling and initially treated as a dental abscess which later proven to be CGCG following an incisional biopsy. Series of conventional surgical therapy with recurrence noted. Subsequently under Oral and Maxillofacial Surgery (OMFS) we embarked on the suggestion of non-surgical therapy using calcitonin. **Discussion:** In view of the hospital pharmacy policy, we were obliged to use the salmon based nasal spray calcitonin 200 units per day for this patient instead of the subcutaneous calcitonin injection. There was improvement seen in the size of lesion and radiographic changes within 6 months of usage. The purpose of this report is to show the positive outcome of the therapy and to support the initiation of subcutaneous calcitonin injection for this patient.

Keywords: Central Giant Cell Granuloma, calcitonin nasal spray

Poster Presentation at Negeri Sembilan Oral Health Scientific Conference 2019 (N9OHSC) on 29-30 June 2019 at Klana Resort Seremban, Negeri Sembilan.

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43. DEVELOPMENT AND VALIDATION OF THE MALAY DIAGNOSTIC CRITERIA FOR TEMPOROMANDIBULAR DISORDERS (DC/TMD)

Mohd Khairul AMT, Muzaffar A, Kathreena K, Zamros Yuzaidi MY, Siti Mazlipah I, Adrian Yap UJ

Introduction: The health status questionnaires measuring Oral Health Related Quality of Life has increased tremendously over the years. The Diagnostic Criteria for Temporomandibular Disorders (DC/TMD) was developed in 2014 and has been extensively used worldwide for Temporomandibular Disorders research and clinical settings. However, for this tool to be used in Malaysia culture, the tool has to be modified from the source version through a formal cross-cultural adaptation process. This study aims to develop and validate a Malay version of DC/TMD tool through established guidelines so that it can be used as a TMD diagnostic protocol among Malaysian population who are majority Malay language speakers. **Methods:**The DC/TMD was translated into Malay language using a forward-backward method. The finalized translated version was given to a total of 252 subjects which consist of 165 non TMD individuals and 87 TMD patients. The psychometric properties of 2 domains which were Graded Chronic Pain Scale (GCPS) and Jaw Functional Limitation Scale (JFLS) were assessed through internal consistency reliability, test-retest reliability and validity test. The literature on this topic was also reviewed. **Results:** The Cronbach's alpha for both domains demonstrated good internal consistency of the items (GCPS = 0.95, JFLS = 0.97) while the intraclass correlation coefficient for test-retest reliability was 0.98 for GCPS and 0.99 for JFLS. There were 3 types of validity test that were conducted namely, concurrent validity, construct validity and discriminant validity. All validity association were found statistically significant with good positive correlation except for the association between GCPS and 3 items of Malay version of Oral Health Impact Profile (M-OHIP) which were poor negative correlation. Nine out of twelve construct validity hypotheses were confirmed which 75% of the results were in correspondence with the itemized hypotheses. A specific OHIP tool for TMD (OHIP TMD) is recommended for more sensitive result to be used in the future. **Conclusion:** The Malay version of DC/TMD is a reliable and valid instrument for assessing TMD among Malay language speakers in Malaysia. A further study is recommended to collect more data for better supportive evidence.

Keywords: DC/TMD, cross-cultural adaptation, Malay version

Oral presentation at the 22nd Malaysia Association of Oral and Maxillofacial Surgeon Annual Scientific Meeting 2019 on 22-24 March 2019 at International Islamic University of Malaysia (IIUM), Kuantan, Pahang.

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Department of Dentistry,

Ng Teng Fong General Hospital
National University Health System, Singapore
Adjunct Principal Investigator –
National Dental Centre Singapore, SingHealth, Singaporen

44. GRADUAL SOFT TISSUE STRECTH FOLLOWING ABBE-ESTLANDER FLAP RECONSTRUCTION

Gurpreet KMSS, Ahmad Kamal TZ

Introduction: Abbe-Estlander flap is a unique flap used to recontstruct medium to large commissural lip defect secondary to tumor ablation without any significant cosmetic deformity. However, this flap will cause microstomia and limitation of mouth opening that may required secondary revision. **Objective:** We reported a case of post reconstructed Abbe-Estlander flap managed conservatively using gradual mouth opening exercise resulted in improvement of mouth opening. **Case summary:** A case of 43 years old Bangladesh man who was presented with painless white lesion at left upper lip since 8 months. Patient's past medical history and general condition was not remarkable. Clinically, the mouth opening was normal and the lesion was indurated and measured about 4cm (width) X 3cm (height) with palpable submental lymph node. Orthopantomogram and chest radiograph didn't revealed any significant abnormality. Incisional biopsy revealed Basal Cell Carcinoma. Wide excision of tumor at left upper lip was done and the defect was reconstructed with Abbe-Estlander flap. Baseline mouth opening was limited at 20mm after upper lip reconstruction. **Methods:** Mouth opening exercise using wooden spatula was performed twice a day on post-operative day 1 at a rate of 1-2mm increase in mouth opening every day. These protocol was continued until acceptable mouth opening reached at 32mm on post-operative day 7. **Results:** Small wound gapping was noted on post-operative day 7 with intact flap. Secondary resuturing was done uneventfully. Mouth opening exercise was maintained at 32mm and patient was able to tolerate orally without the need for secondary revision to restore function. Conclusion: This case illustrated the possibility of stretching the soft tissue of the flap by mean of gradual mouth opening exercise without any significant compromised on the flap.

Keywords: Abbe-Estlander flap, limitation of mouth opening, gradual mouth opening exercise

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45. HARD MASS ON GUM: A CASE REPORT

Mohd Azizul MA, Sivakama Sunthari K, Sutina K, Muhammad Ropi M

Introduction: Ossifying fibrous epulis (OFE) is a benign tumour of untreated fibrous epulis. It is caused by chronic irritation toward gingival margin owing to trauma or calculus. The tumour is usually slow-growing in size and painless. In the early stages, it can be treated by removing its source or causes of the irritation. However, attaining a certain size, the lesion would not subside even though the causes were removed especially when the tumour become ossified. **Case Report:** We reported a case of painless tumour on the upper right gum which presented for about 4 years. The patient is 64 years old Malay male with no known medical illness or drug allergy. The tumour was painless and slowly growing in size and caused discomfort and interference while eating. On examination, the tumour was irregular in shape, pinkish, hard in consistency, non-tender upon palpation and sessile. **Conclusion:** The exact cause of OFE remains unknown. Chronic irritation towards gingival tissues may stimulate mesenchymal cell of origin and proliferate in pyogenic granuloma. Long term irritation of the periosteal and periodontal membrane causes metaplasia of connective tissue which results in bone formation. Surgical excision and removal of the causes are recommended treatment. Recurrence rate is low but can reoccur if there is persistent irritation toward gingival margin.

Keywords: Ossifying Fibrous Epulis, Benign Tumour

Poster presentation at Negeri Sembilan Oral Health Scientific Conference 2019 (N9OHSC) on 28-30 June 2019 at Klana Resort Seremban, Negeri Sembilan.

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46. HIGH PERCENTAGE OF UNNECESSARY UNILATERAL IMPACTED 3rd MOLAR CASES SENT FOR ORTHOPANTOMOGRAM (OPG)

Nurul Aqasha AW, Nur Salsabila S, Nabilah MY

Introductions: Impacted third molar tooth may cause multiple complications. To get a proper diagnosis, a detailed history must be taken, followed by clinical examination & radiological investigations. An OPG is an extraoral x-rays, panoramic of the lower face which displays all teeth on a single film. Intraoral Periapical (IOPA) radiograph is the commonest intraoral x-ray showing the whole tooth. **Aims and Objectives:** Reduce percentage of patient with unilateral impacted 3rd molar cases sending for OPG x-ray, prevent unnecessary radiation exposure to the patient. **Selection of Opportunities for Improvement:** Received complaint from Radiology department because of sending too many patients for OPG –X-ray. **Key Measures for Improvement:** To decrease workloads in Radiology and OMFS departments, avoid unnecessary radiological radiation exposure during examination. **Process of Gathering Information:** A prospective study done in 6 months. Sample size was determined by systematic random sampling. A simple data collection tools facilitated the analysis and presentation of result. **Analysis and Interpretation:** A sample size of 116 impacted cases taken pre remedial action – all were sent for OPG x-ray. Sample size of 75 impacted cases were taken post-remedial action – 6 cases sent for OPG, 26 cases sent for IOPA x-ray in June 2018, 6 cases sent for OPG, 37 cases sent for IOPA x-ray in July 2018. Factors contribute for cases send for OPG x-ray: 1.Operator preference. 2. Not following guidelines. 3. Shortage of manpower. 4. Patient incoorperation. **Strategy for Change:** Provide workflow, CME and training, questionnaire to all doctors and dental surgery assistants. **Effects of Change:** Improve knowledge on radiographic investigations in handling impacted wisdom teeth cases and to correlate clinical assessment between OPG and IOPA radiograph. **The Next Step:** To achieve higher percentage in deduction of impacted wisdom tooth cases sent for OPG. **Value Added Features:** We learned that success clinical audit can be achieved by proper plan & good team work. Implementation of CME, tools SOP, and workflow had value added to clinical improvement and service delivery.

Oral presentation for clinical audit at the Karnival Inovasi Jabatan Kesihatan Negeri Selangor 2019 on 5 - 6 November 2019 at National Institute of Health, Setia Alam, Selangor.

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Dr. Nur Salsabila Binti Saadon
Dr. Nabilah Binti Mohd Yaakob
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47. INTRALESIONAL STEROID INJECTION OF LOCALISED LANGERHAN'S CELL HISTIOCYTOSIS: A CASE REPORT

Nooraini M, Diyana AH, Hazelina M, Sivakama Sunthari K

Introduction: Langerhan's Cell Histiocytosis (LCH) formerly known as Histiocytosis X or eosinophilic granuloma is a rare disease with unknown etiology. It is characterized by abnormal or excessive Langerhans cells. It could be presented locally, as isolated lesions or systemically. Treatment of LCH varies according to the clinical presentation of the disease. Localized LCH is usually benign and heals spontaneously within months to years. If treatment is required, the disease can be controlled by local measures such as surgical curettage, low dose radiotherapy or intralesional injection of corticosteroids. **Case Report:** A patient presented with localized LCH in the mandible is responding to intralesional steroid injection with regression of lesion by radiographic presentation. The same patient who developed another lesion at another region of the mandible, also responsive to intralesional steroid injection. No comparison with different treatment modalities was possible as the disease is rare. **Conclusion:** Intralesional steroid injection was found to be effective in treating localized LCH.

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48. INTRAORAL PSORALEN ULTRAVIOLET A (PUVA) IRRADIATION IN TREATING PATIENTS WITH ORAL CHRONIC GRAFT VERSUS HOST DISEASE: A CASE SERIES

Ahmad Anas A, Khairunniza T, Nur Shazwani AM, Nooraini M, Hazelina M, Sivakama Sunthari K

Introduction: Graft Versus Host Disease (GVHD) is a common and serious complication following Allogenic Haematopoetic Stem Cell Transplantation (AHST). There are two forms of GHVD, acute or chronic. In acute GVHD (a-GVHD) the symptoms appear within 100 days after transplantation while in chronic GVHD (c-GHVD) the symptoms occur after 100 days post-transplantation. Both forms may cause varying degrees of deterioration on the patient's quality of life. GVHD causes a variety of clinical syndromes typically involved the liver, digestive organs, and skin. In chronic graft versus host disease, oral manifestations may occur up to 90% of the post-transplantation cases. Symptoms of oral c-GVHD includes erythema, ulceration, mucosal atrophy, leukoplakia, perioral pain, and xerostomia. **Case Series:** Three cases of c-GVHD were referred to the Oral and Maxillofacial Surgery Clinic by the Haematology Department Hospital Ampang from 2017-2018. All three patients who developed oral manifestations of c-GVHD were treated with Psoralen and Ultraviolet-A (PUVA) therapy as part of the management. These patients have shown significant reduction in symptoms and improved oral intake and quality of life. **Conclusion:** Intraoral PUVA therapy provides promising outcomes in treating patients with oral c-GVHD. Oral lesions improvement can be achieved after several sessions of PUVA therapy and can significantly improve patient's symptoms, oral intake and quality of life.

Keywords: Graft Versus Host Disease, Psolaren and Ultraviolet-A

Poster presentation at the 7th Selangor Research Week 2018 on 1 - 5 October 2018 at Shah Alam Hospital, Selangor

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49. KIMURA'S DISEASE: A CASE REPORT

Vijainthimalar S, Sharifah Tahirah AJ, Mohd Nury Y

Introduction: Kimura's disease is a rare chronic inflammatory condition of uncertain etiology which has affinity for the Asian population. It primarily involves the head and neck region, presenting as deep subcutaneous masses and it's often accompanied by regional lymphadenopathy and salivary gland involvement. **Case report:** We report a case of Kimura's disease in 34 years old Kadazan male who presented with bilateral cheek swelling and lymphadenopathy. Clinical presentation was suggestive of kimura's disease and microscopic examination following biopsy of the lesion and peripheral blood eosinophilia and elevated serum immunoglobulin E (IgE) level allowed us to make a definitive diagnosis. **Discussion:** Peripheral blood eosinophilia and elevated serum immunoglobulin E (IgE) level are characteristic features and the microscopic picture reveals lymphoid proliferation with eosinophilic infiltration. Histological characteristics of Kimura's disease help to differentiate it from angiolymphoid hyperplasia with eosinophilia and help to recognize from hypersensitivity, drug reaction and bacterial infection. **Conclusion:** Treatment of Kimura's disease often sought for symptomatic relief and cosmetic concerns. Therapeutic modalities for kimura's disease include surgical excision, radiotherapy and various immunomodulation agents. Most cases have favourable initial responses to treatment, but relapse occurs at high rate as 60%-100%.

Keywords: Kimura disease, E (IgE), Eosinophilia

Poster presentation at the 1st Joint Specialist Conference 2018 "Dental Specialties: Together Towards A Successful Tomorrow" on 9-11 March 2018 at Hotel Istana Kuala Lumpur.

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50. LEONTIASA OSSEA, A RARE MANIFESTATION OF RENAL OSTEODYSTROPHY – A CASE REPORT

Sathya SS, Yew CC, Yuen KM

Introduction: Leontiasis Ossea (LO) is a term used to describe the clinical appearance of patients with enlarged facial bones, giving a leonine appearance. It is a rare manifestation in patients with renal osteodystrophy (RO), a disorder of bone metabolism in patients with chronic kidney disease (CKD). In patients with CKD this is due to altered bone metabolism in relation to hyperparathyroidism. **Case report:** This case report highlights the appearance of LO as a manifestation of RO in 40-year-old female patient with tertiary hyperparathyroidism (HPT) secondary to end stage renal failure (ESRF). Her facial appearance had been affecting her daily life in terms of aesthetics and function. There was some resolution of the facial enlargement post parathyroidectomy. **Conclusion:** The clinicians and surgeons must be aware on the importance of diagnosis incorporating clinical, biochemical, radiological and histopathological findings.

Keywords: leontiasa ossea, renal osteodystrophy

Won 2nd place for Poster Presentation presented at the 1st Joint Specialist Conference 2018 "Dental Specialties: Together Towards A Successful Tomorrow" on 9-11 March 2018 at Hotel Istana Kuala Lumpur.

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51. MAGGOTS AND MAXILLA: A CASE SERIES

Peh GT, Chen LS

Introduction: Myiasis is the infestation of live human and vertebrate animals with dipterous larvae which feed on the feed on the hosts dead or living tissue, liquid body-substances, or ingested food. In the maxillofacial region, myiasis can be generalised into two types: Cutaneous myiasis and oral myiasis. Our case series describe 3 cases managed in Department of Oral and Maxillofacial Surgery in Hospital Tengku Ampuan Afzan, Pahang from July 2017 to May 2019. **Case report:** This case series aim to discuss the presentation, diagnosis and management of myiasis affecting the oral cavity and maxillofacial region. The first case describes an 81-year old female who is medically fit and healthy but has a habit of scratching her face, leading to untreated wound that is infected with maggots. The second case describes a 64 year old male who is diagnosed with well differentiated squamous cell carcinoma of the left cheek, with superimposed myiasis of the fungating mass. The third case is of a 21 year old female with underlying cerebral palsy who presented with generalized upper lip swelling, which turns out to be oral myiasis. In all 3 cases, the standard treatment of manual removal of larvae performed and antibiotic was given to prevent secondary infection. Gauze soaked with turpentine was packed into the infected site, leading to the suffocation of maggots and causing the maggots to surface above the cavity. Doing so, enabled the clinician to identify and remove the maggots using tweezers. This procedure was repeated over the course of several days to ensure that the site was free of larva. During follow up, satisfactory healing in all patients with no recurrence of myiasis was assessed. This case series demonstrates that adequate wound debridement is sufficient to treat Myiasis without complications.

Keywords: Myiasis, orofacial myiasis

Presented at East Coast Research Day 2019 on 8-9 October 2019 at Taman Tamadun Islam, Kuala Terengganu, Terengganu.

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52. OPTIMIZING STABILITY OF SEGMENTAL LE FORT 1 OSTEOTOMY IN UNILATERAL CLEFT LIP AND PALATE PATIENT USING COBALT CHROMIUM PALATAL BAR: A TECHNICAL NOTE

Syed Yusoff ASAF, Firdaus H, Zainal AAR

Le Fort 1 osteotomy is a common procedure in cleft orthognathic surgery. However, the stability of the segmentalized maxillary bone components remains a major issue as it contributes to the long term successful surgical outcome. Based on the literature, the unilateral cleft anterior segment has the tendency to relapse back due to the high soft tissue tension and lack of rigidity of the device used for example acrylic splint or an archbar to maintain the surgically corrected maxillary arch position and alignment. An eighteen year old Malay male presented with a repaired left unilateral cleft lip and palate came complaining of anterior open bite on the left cleft side. He underwent unilateral segmental Le Fort 1 osteotomy on the cleft segments and the arch was stabilized with a customized Cobalt-Chromium (Co-Cr) palatal bar and stainless steel wire. Post-operative 1 year and 8 months later shows good healing with no relapse. Our novel technique of using Co-Cr palatal bar provide adequate post-operative support and can be applied by surgeons in segmental cleft orthognathic surgeries.

Keywords: Le Fort 1 osteotomy, unilateral cleft lip and palate, chromium palatal bar

SYASA Fattah, F Hariri, Zainal Ariff AR: Optimizing Stability of Segmental Le Fort 1 Osteotomy in Unilateral Cleft Lip and Palate Patient Using Cobalt Chromium Palatal Bar: A Technical Note. Mal. J. Oral Maxillofac. Surg. 2017; 15: 42–45.)

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53. PLEOMORPHIC ADENOMA IN BUCCAL MINOR SALIVARY GLANDS: A CASE REPORT

Dewi NK, Lee JJK

Introduction: Pleomorphic adenoma is a well-known benign neoplasm which commonly occurs in the parotid glands. It also affects other major glands such as the submandibular and sublingual glands. Minor salivary glands may also be affected by this type of neoplasm, but the phenomenon is very rare. The incidence of pleomorphic adenoma in parotid glands has a higher potential to become malignant. **Case report:** A case of a 28-year-old male with clinical presentation of right cheek swelling for 10 years is discussed. Computed tomography shows a non-aggressive subcutaneous right maxillary soft tissue lesion, with normal parotid gland and no bony invasion. Histopathological examination revealed a well circumscribed and encapsulated benign salivary gland tumour of epithelial and myoepithelial cells which has been interpreted as pleomorphic adenoma on right buccal mucosa. The palate is the most widely reported site for pleomorphic adenoma in minor glands. Risk of recurrence of pleomorphic adenoma is high, depending on many factors. A well excised tumour is generally associated with a low recurrence rate. The most common clinical differential diagnosis of this lesion are a dermoid or epidermoid cyst and pleomorphic adenoma of the parotid gland. Pleomorphic adenoma of an accessory parotid gland may also be included; however, it is atypical. **Conclusion:** This report serves to emphasize the importance of including pleomorphic adenoma of buccal minor salivary glands in the differential diagnosis of buccal or cheek swellings.

Keywords: pleomorphic adenoma, buccal minor salivary glands

Poster presentation at Malaysia International Dental Exhibition and Conference 2019 (MIDEC 2019) on 11-14 July 2019 at Kuala Lumpur Convention Centre, Kuala Lumpur.

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54. POSSIBLE PREDICTOR IN DETERMINING DIFFICULTY OF SURGERY IN MESIOANGULAR IMPACTION OF MANDIBULAR THIRD MOLAR

Ahmad Kamal TZ, Khairulzaman A

Introduction: Prediction of the difficulty of surgery of removal of the impacted mandibular third molar (MTM) can be really challenging. Our study aimed to introduce a simple measurement method in identifying the factor that may become a possible predictor in determining the difficulty of surgery. **Methodology:** A prospective observational study was conducted at two Oral & Maxillofacial Surgery Departments, namely Hospital Sultan Haji Ahmad Shah, Temerloh and Hospital Kuala Lipis involving 55 patients with mesioangular impaction of MTM and approved by Medical Research Ethics Committee (MREC). The measurement of occlusal surface angulation (OSA) will be categorized into mild degree (OSA< 30°), moderate degree (OSA 30°- 60°) and severe degree (OSA > 60°). On the other hand, the measurement of distal bone impaction will be categorized into mild impaction (<3mm), moderate impaction (3-6mm) and severe impaction (>6mm). Subsequently, the duration of surgery perceived as difficulty of surgery and surgical technique employed will be compared with the OSA and distal bone impaction descriptively using SPSS version 24. **Results:** Majority of the patients in this study were Malays (80%) and female (60%). The mean age of the patient involved was 25.7 years old (SD=5.06). No association can be generated between OSA and distal bone impaction, with the difficulty of surgical removal of mesioangular impacted of the MTM. The assumption for Chi-Square test was not met for this data. Despite that, a descriptive analysis found that severe degree of OSA (>60°) reported having longer tooth extraction time, 20 cases (62.5%). Similarly, 24 cases (75%) required difficult technique when OSA degree >60°. **Conclusion:** The OSA may serve as possible predictor to determine the difficulty of surgery in the future validation study with a significant effect.

Keywords: Mesioangular Impaction, Occlusal Surface Angulation

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55. PROGNOSTIC FACTOR ANALYSIS OF ADVANCED ORAL SQUAMOUS CELL CARCINOMA IN A 10-YEAR COHORT FROM JANUARY 2005 TO DECEMBER 2014

Ling JZH, Han FS, Lim CM

Introduction: This study aims to present a 10-year retrospective prognostic factor analysis of late stage oral squamous cell carcinoma (OSCC) seen in an oral and maxillofacial surgery (OMFS) clinic within a tertiary hospital of Malaysia. **Methods:** 182 patients with pathologically confirmed advanced OSCC treated in a tertiary hospital had their complete clinical and follow-up data recorded. The 5-year survival rate was calculated using Kaplan-Meier analysis. Positive contributing factors among groups were identified with Simple Cox Regression analysis and further analysed with Multiple Cox Proportional hazard regression model to examine the interaction between them. **Results:** The overall mean survival time was 47.90 months with a 37.5% average 5-year survival rate. Our univariate analysis showed that stage IV OSCC, lymph node category N2 and the presence of perineural invasion were risk factors affecting prognosis individually ($p < 0.05$). Multivariate analysis found neck node status and perineural invasion as significant predictive factors. **Conclusion:** Neck node status and perineural invasion were the true factors affecting prognosis of late stage of OSCC disease. The risk of death was increased by 8.8 times when lymph node category is N2.

Keywords: Oral squamous cell carcinoma, late stage, prognostic factors, survival rate.

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56. QUALITY OF LIFE ASSESSMENTS IN MAXILLOFACIAL TRAUMA PATIENTS- A SYSTEMIC REVIEW

Chen Loong Soh , Peh Ge Tan

Maxillofacial trauma is a life changing event as patients often suffer from physical and functional defects post trauma. In recent years, it has come to light that maxillofacial trauma also causes emotional and psychological consequences. The aim of this systematic review was to evaluate the quality of life of patients who sustained maxillofacial trauma and to assess the tools used to analyse quality of life and psychological changes in maxillofacial trauma patients. A review of literature was carried out and 30 articles are included. The results indicate that patients that experienced maxillofacial trauma had reduced quality of life but quality of life improved after treatment, with degree of improvement depending on severity of injury. There is a lack of consistency in the questionnaires used for analysis of quality of life and a validated questionnaire should be created to address this issue. More studies using comparable groups and quality of life among different cultures can be considered for further research.

Keywords: quality of life, oral and maxillofacial trauma

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57. STANDARDS OF CARE BY MULTIDISCIPLINARY TEAM FOR CLEFT LIP AND PALATE PATIENTS IN MALAYSIA (A PILOT STUDY)

Umar K, Zakiah MR, Siti Mazlipah I, Khairul Bariah CA, Marzuki O, Tan HL

Introduction: The management of cleft lip and palate (CLP) patients are complex and require coordinated care of multidisciplinary team (MDT). In Malaysia, cleft combined clinic (CCC) only available in small numbers and mostly situated in urban centers. To date, there were limited number of research conducted to investigate standards of care for CLP patients among CCC in Malaysia. **Objective:** To investigate the standards of care provided for management of cleft lip and palate (CLP) patients in Malaysia in comparison to the recommendations made by Clinical Standards Advisory Group (CSAG) 1998. **Methods:** This is a cross sectional questionnaire-based survey. The self-administered postal questionnaires were sent to three universities. The questionnaire comprises of few components that was related to the cleft team services which include overall cleft services, team formation, team members, clinical sessions, infrastructure and audit practice. **Results:** It was found that the composition of each cleft team varies through the MDT model in every center. Oral & maxillofacial surgeon (OMFS) and orthodontist were the only specialties that attended most of the CCC in all cleft teams. All centers provided complete treatment for cleft patients starting from baby until adulthood. There was variation in surgeons that involved in primary lip and palate repair while alveolar bone graft (ABG) surgery was done mainly by OMFS. None of the cleft team used database for their record keeping and actively involved in clinical audit program. **Conclusions:** Management for CLP patients among university hospital in Malaysia was provided through a MDT model care as recommended by CSAG with some of the recommendations fulfilled by the cleft team. However, improvement are needed especially in the area of forming a database for record keeping and having a routine clinical audit program.

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58. SURGICAL REMOVAL OF ECTOPIC CYSTIC LOWER THIRD MOLAR VIA EXTRA-ORAL APPROACH: A CASE REPORT

Nurul Aqasha AW, Sharifah Tahirah AI, Mohd Nury Y

Introduction: Extraoral disimpaction of ectopically placed third molar is an exceptional surgical procedure. Though ectopic impacted third molar more often an accidental clinical finding when asymptomatic but may present an idiopathic facial pain. The prevalence of ectopic tooth is 1% in the general population, and patient morbidity increases with concomitant cystic lesion. **Case report:** A 40-year-old male presented with pain on his right lower jaw region. Episode of pain was sharp and intermittent, no swelling and not associated with difficulty of mouth opening. Clinical examination revealed neither facial asymmetry nor palpable submandibular lymph nodes. Intraoral examination showed healthy oral mucosa and missing maxilla and mandibular third molar. An Orthopantomogram (OPG) X-ray revealed an ectopically placed right third molar inferior to Inferior Dental Nerve with a radiolucency area on the crown region. Probably indicative of development of a dentigerous cyst. **Discussion:** There are three surgical approaches to remove the impacted lower third molar are three; they are intraoral, extraoral and endoscopically assisted. Extra oral approach is used in cases where teeth placed high in the ramus, neck of the condyle, or at the lower border of the mandible. This allows good exposure, less amount of bone removal and good orientation of the impacted tooth which prevents inadvertent fracture of the mandible. However, there will be minimal external scar and risk to damage the facial nerve branches. **Conclusion:** Extraoral removal of ectopic impacted mandibular third molar provides the operator with good surgical field. A conscientious handling of inferior dental nerve, extra oral soft tissues and skin will invariably recover without any morbidity.

Keywords: ectopic cystic lower third molar, extra-oral approach

Oral presentation at the 23rd Malaysian Association of Oral & Maxillofacial Surgeons (MAOMS) Annual General Meeting 2019 "Pushing Frontiers, Broadening Horizons" on 22-24 March 2019 at Hyatt Regency Hotel, Kuantan, Pahang.

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59. SURGICAL TREATMENT FOR RANULA: A CASE SERIES

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Introduction: Ranula is a cystic swelling located on the floor of mouth which categorized as oral ranula or plunging ranula. Various treatment modalities had been used to manage this occurrence with its complication described. **Objective:** This study reported the treatment for ranula and to analyze the best surgical methods to treat ranula. **Methods:** The documents of relevant clinical details and pathology report of five patients that had been treated at Oral Maxillofacial and Surgery Department, Sultan Abdul Halim Hospital, Ministry of Health, Malaysia over the period of five years (2014-2018) were analyzed. All patients had been informed regarding to this study, as well as consent was taken for academic purposes of publication. **Results:** Five patients were treated for ranula. Two patients were treated with intraoral excision of ranula with removal of sublingual gland achieved complete resolution. One patient had required intraoral marsupialization of ranula achieved resolution. One patient without surgical intervention had attained spontaneous resolution. One patient developed plunging ranula after 1 year of intraoral excision of ranula with removal of sublingual gland. The lesion achieved complete resolution after extraoral excision plunging ranula with removal of submandibular gland. We did not encounter any complications in our case series except for recurrence. **Conclusions:** Observation for four months is allowed for oral ranula. Marsupialization and excision with sublingual gland removal are the preferable surgical management of oral ranula. Plunging ranula is best treated by excision with removal of the offending gland. 2 years of follow-up period for monitoring is recommended for both oral and plunging ranula.

Keywords: Ranula, surgical treatment

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60. THE PATTERN OF ORAL AND MAXILLOFACIAL INJURIES IN HOSPITAL AMPANG: A 10-YEAR STUDY

Rina Revathi S, Tan LY, Nur Shazwani AM, Leong YH, Hazelina M, Sivakama Sunthari K.

Purpose of study: The aim of this study was to analyse and describe the pattern of maxillofacial injuries presenting to the Oral & Maxillofacial Surgery Department, Hospital Ampang from year 2008 to 2017. **Materials and Methods:** Clinical records of facial injury cases, from 2008 to 2017, including demographic, aetiology, fracture and injury sites and treatment were collected and analysed. **Results:** In total, 1297 facial injury cases were documented, the majority aged 20 - 29 years. Most cases were among male and Malays. The main cause was road traffic accidents, among those, the majority were motorcyclists. The types of injuries mainly seen were soft tissue injuries, bony fractures and dentoalveolar fractures. **Conclusion:** Motor-vehicular accidents is the main aetiological factor causing maxillofacial injuries. There is a need for measures to be taken on prevention, in high risk groups, to reduce road traffic accident related maxillofacial injuries.

Keywords: Oral and Maxillofacial injuries, Hospital Ampang

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61. THE PREVALENCE OF MAXILLOFACIAL INJURIES IN ORAL AND MAXILLO-FACIAL SURGERY DEPARTMENT HOSPITAL RAJA PERMAISURI BAINUN IPOH, PERAK

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Introduction: Like many developing countries, the most predominant cause of trauma in this country is motor vehicle accident, and males are most often involved. It has been shown that Malaysia had one of the highest fatality risks in the world resulting from MVA. A study conducted in Hospital Seremban Malaysia in the year 2011 revealed that 79.2% of patients sustaining maxillofacial injuries were men. There is an overall lack of information regarding maxillofacial injuries in Ipoh, particularly by Hospital Raja Permaisuri Bainun (HRPB), which is the state hospital. **Objective:** To report on the demographics of the patients, etiology, types of injuries, frequency of presentation, site distributions, & modalities of treatment. To describe the most common site of maxillofacial fractures. To estimate the cost of surgical plates & screws in Open Reduction Internal Fixation as a treatment modality. To provide a statistical analysis that can help as a reference point for healthcare planners to reduce or prevent such injuries in the future in a target group. **Methodology:** A retrospective study was carried out using hospital records of all patients who sustained oral & maxillofacial injury at Hospital Raja Permaisuri Bainun, Ipoh between years 2009-2013 totaling 1429 records. Only patients of the ages 16 and above, seen in our department, were included in this study. Cases whereby the definitive treatment was provided by some other department or center were excluded. Information related to demographics, etiologies of trauma, types of injuries & facial fracture along with its anatomical sites were analyzed. This study also looks into the modalities of treatment provided as well as some aspects of the costs involved. The data was analyzed using the SPSS software. Etiology of oral & maxillofacial injuries examined in this study includes motor vehicle accident (MVA), pedestrians, assault, falls, sports injuries, occupational/industrial accidents and others. The classification for the facial fractures used the AO CMF Classification as well as looking generally at Mandible fractures, Le Fort I, II, III fractures, zygomatic complex fractures and Naso-ethmoidal/Orbital/Frontal fractures. **Results:** We noted that a huge number of males (78.3%) experienced maxillofacial injuries compared to females (21.7%). By ethnicity it was commonly seen among the Malays (51.6%), followed by the Indians (20.6%) and Chinese (18.0%). The most common cause of maxillofacial injuries was MVA (75.3%), followed by falls (11.4%), then assault (7.6%). The majority of the number of people who sustained maxillofacial injuries was of the age groups 21-30 (33.6%). The 2nd highest majority was of the age groups 16-20 (25.2%). More than one third (36.4%) of the patients had experienced facial fracture, 95.1% had sustained soft tissue injuries, and 32.5% of them had sustained dentoalveolar injuries. Among those with facial fractures (n=520), the most common type of fracture noted were mandible fractures, 424 cases (81.5%). Symphysis/Parasymphysis of the mandible fracture were the most

commonly encountered. Palatal fractures were the least encountered. 58.1% of those with facial fractures had undergone Open Reduction Internal Fixation (ORIF). The Mean duration of IMF as an adjunct after ORIF was 15.06 days and the mean duration for patient undergone closed reduction or IMF alone was 30.27 days. Additional costs o plates and surgical screws during ORIF could cost anywhere between RM188-3368. The mean cost of the surgical plates and screws for a patient undergoing ORIF was RM870.99. **Conclusion:** Motor vehicle accidents are a major cause of maxillofacial injuries. Legislations for road safety should be enforced to further curb motor vehicle accidents, which can improve healthcare as well as reduce healthcare costs. This study recommends an awareness program on maxillofacial injuries be conducted, targeting males of the age groups 16-30.

Keywords: Maxillofacial Injuries, Trauma

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62. TRAUMATIC SUPERFICIAL TEMPORAL ARTERY PSEUDOANEURYSM: A CASE REPORT

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Introduction: Pseudoaneurysm or false aneurysm of the Superficial Temporal Artery (STA) is a ballooning of the arterial wall as a result of total or partial rupture of the vessel. A pseudoaneurysm involves one fibrous layer of the STA while in contrast true aneurysm involved all three vessel layers, the initima, media and adventitia. This condition is infrequently seen with fewer than 200 cases have been reported in literature. It is reported up to 92% of pseudoaneurysm of STA are of traumatic origin but other causes may also contribute such as congenital, arteriosclerotic and iatrogenic. In most cases the diagnosis can be made through complete history and physical examination however, Computed Tomography (CT) angiogram enables the surgeon to finalise diagnosis and identify the vessel in which the aneurysm is located. Complete excision of the pseudoaneurysm with ligation of the proximal and distal portions of the vessels is the recommended and treatment of choice. **Case Presentation:** A 20-years-old male sustained multiple facial bone fractures after motor vehicle accident. On follow up visit two weeks after injury, patient presented with pulsatile mass on right temporal region measuring 2cm x 2cm in dimension. On examination, there was pulsation upon digital pressure and bruit was noted. CT angiogram performed and diagnosis was pseudoaneurysm of right STA. **Conclusion:** Although pseudoaneurysm of STA is an infrequent occurrence, this condition should be considered as a differential diagnosis of a mass in the temporal region especially following traumatic injury. Usually clinical examination is sufficient to confirm the diagnosis while CT angiography may assist to evaluate the mass and to rule out other possible intracranial or other lesions in the vicinity. Simple elective excision and ligation of the pseudoaneurysm can be done under local or general anaesthesia and is normally curative.

Keywords: Pseudoaneurysm, Superficial Temporal Artery

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63. TREATMENT OF ORAL SUBMUCOUS FIBROSIS USING SPLIT SKIN GRAFT AND A POLYETHYLENE STENT : A PROSPECTIVE STUDY

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Oral submucous fibrosis (OSMF) is an insidious chronic disease affecting any part of the oral cavity and sometimes the pharynx, leading to stiffness of the oral mucosa and causing trismus and inability to eat. When there is marked limitation of mouth opening due to said fibrosis, the choice of treatment is surgical. Various treatment modalities exist, with varying results. The aim of this study was to evaluate the split skin graft held in place with a polyethylene stent for the treatment of oral submucous fibrosis. 15 prospective patients from June 2011 to December 2012 diagnosed clinically with oral submucous fibrosis were recruited for this study. All patients were treated surgically using the same surgical technique of fibrotomy followed by split skin graft along with a poly-ethylene stent. Preoperative and postoperative mouth opening measurements at 1 week and after a minimum of 6 months were evaluated by measuring the inter incisal distance. Mean follow up was 9.8 months with a minimum of 6 months. Mean preoperative mouth opening was 12.9 mm (6–20 mm). Intraoperatively mean mouth opening was 37.9 mm (36–41 mm). After 1 week mean mouth opening was 35.8 mm (31–40 mm). At 6 months follow up, mean mouth opening was 33 mm (20–40 mm). Fibrotomy followed by split skin graft along with a polyethylene sheet stent and sufficient postoperative physiotherapy is a simple, cost effective and viable treatment modality for oral submucous fibrosis.

Keywords: Oral submucous fibrosis, split skin graft, polytheylene stent

Presented at Pahang Research Day 2018; 1st Place for Poster Category

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64. WHY DID YOU CUT MY TONGUE? A CASE REPORT OF OBSTRUCTIVE SLEEP APNEA

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Introduction: Obstructive sleep apnea is a type of a sleep disorder that is characterized by multiple episodes of persistent upper airway obstruction during sleep which results in markedly reduced (hypopnea) or totally absent (apnea) of airflow at the upper airway tract. The obstructed airway can be contributed by many medical conditions or anatomical abnormalities which causes the airway to collapse during sleeping. There are many treatment options in treating patients with obstructive sleep apnea including both medical and surgical interventions that have been recommended to widen the narrowed upper airway or to eliminate the airway resistance in obstructive sleep apnea patients. Surgical interventions are mainly to address the excess soft tissue or any discrepancies in the facial skeletal pattern. **Case report:** We report a case of a patient who had been diagnosed with obstructive sleep apnea through a formal sleep study analysis. The patient presented with a Class II skeletal pattern with a hypoplastic mandible. Instead of treating her skeletal discrepancy, we established a good therapeutic outcome by addressing her tongue via volumetric tongue reduction with minimal post-operative complications. Patient affirmed that her sleep-related symptoms and other parameters have greatly improved after the surgical procedure. **Conclusion:** We believe that tongue reduction surgery plays a role in a patient with obstructive sleep apnea.

Keywords: Obstructive Sleep Apnea, Hypopnea, Apnea

Won 2nd Best Winner for Oral Presentation presented at Negeri Sembilan Oral Health Scientific Conference 2019 (N9OHSC) on 28-30 June 2019 at Klana Resort Seremban, Negeri Sembilan.

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65. WISDOM TOOTH SURGERY COMPLICATION-LOCAL ANAESTHESIA VS GENERAL ANAESTHESIA

Fathenah H

Introduction: This study aims to compare the complication rates arising from surgical removal of lower third molars (L3M) under general anaesthesia (GA) versus local anaesthesia (LA) in the Oral and Maxillofacial Surgery (OMFS) Department, Hospital Sultanah Nora Ismail (HSNI), Batu Pahat, Johor, Malaysia. **Methods:** This is a retrospective clinical audit of patients who underwent L3M removal under LA or GA from 1/1/2013 to 31/3/2018, with recorded complications such as surgical site infection (SSI), wound breakdown, severe pain, trismus, retained tooth structure, nerve injury and dry socket evaluated at different time intervals. **Results:** A total of 313 patient with 375 L3M were included in this study (male: 160, 51.1%; female: 153, 48.9%) with an age range of 18 to 40 years (mean=27.43 years). Out of 79 L3M that were removed under GA (34.2% were classified as mild, 65.8% were moderate impaction), whereas from the 296 L3M were removed under LA, 31.4% were mild impaction, 63.9% moderate and 4.7% severe. Preoperative antibiotics were given in all L3M removal under GA, while only 23 out of 296 L3M removal under LA had antibiotics prescribed. Findings showed that 15.2% of L3M removal under GA and 16.6% under LA were associated with complications. Generally, patient with GA had lesser complications, however only SSI outcome was significant (p= 0.034). **Conclusions:** L3M removal under LA may have a higher risk of SSI when compared to GA. This raises the possibility that a single prophylactic antibiotic dose may prevent SSI in LA procedures.

Keywords: lower third molars, general anaesthesia, local anaesthesia

Oral presentation at the 2nd Johor Oral Health Research Conference 2019 “Probe the Evidence” on 20-21 November 2019 at INTAN Kampus Wilayah Selatan (IKWAS), Kluang, Johor.

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RESEARCH
IN
PAEDIATRIC DENTISTRY

66. A CASE REPORT: MANAGEMENT OF ORAL SELF-MUTILATION IN A CHILD WITH CEREBRAL PALSY USING CUSTOMIZED BITE GUARD

Mazni Fatihah MZ, NurulNazra MA

Introduction: Self-injurious behaviors (SIB) is defined as intentional harm to one's own body without suicidal ideation [1]. It usually occurs as neuropathologic chewing in patients of mental retardation, comatose status, psychotic problem, poisoning, or character disorders. SIB involving the oral cavity is often observed in patient with Cerebral Palsy particularly in the spastic and dystonic type. The prevalence has been reported to be between 7.7% to 22.8% in the developmentally disabled group, including cerebral palsied patients. Depending on the severity and duration of the self-inflicted oral trauma, numerous approaches that range from conservative to invasive have been reported to manage this condition. **Case Report:** This case report describes a young child patient with cerebral palsy and epilepsy who repeatedly bite on her lower lip and tongue due to hypertonicity of masticatory muscle and repetitive involuntary jaw movement. This caused non-healing ulcerations on lower labial mucosa and tip of tongue. An oral removable bite guard was designed and fabricated to shield the bite and subsequently allow healing and prevent future injury through protection of the injured area. Denture adhesive and cement was used to improve retention of the appliance in the mouth. However, this appliance was not tolerated well by the patient due to its instability especially during spastic motion and tongue flexure. Lip lesion was noted to be persistent with poor healing as the patient constantly bite on the lower lip. The paediatric neurology team who has been managing this patient noted about her condition and had increased the dosage of an anti-spastic agent in attempt to reduce the hyperactivity of masticatory muscles. Following the alteration of medication, improvement in the hypertonicity and dystonia of the masticatory muscles were seen, but the lip lesion was getting worse from a recent lip biting event. Hence, a new impression was taken to refabricate another bite guard, using a material named Erkoflex, which is commonly used to make soft mouthguard or bite splints. The design was similar to the previous appliance, except that both upper and lower splint were mounted together to produce a "locked" bite, hence limiting the mandibular movements. It also has an extended flange to act as buccal shield to separate the teeth from the buccal mucosa and deflect away the lips. The patient was able to tolerate this new splint as less instability and dislodgements were observed. Instructions were given to wear the appliance for as long as possible to address her lip lesion and allow resolution. Patient was compliant to it and healing of lesion was observed in the following weeks. **Discussion:** SIB encompasses a wide range of behaviors, but usually occurs as tongue and lip biting. The management of such self-inflicted oral trauma varies depending on the medical history of the patient, the etiology of the behaviour, and the severity, frequency, and method of inflicting injury. Non-invasive approach has been advocated due to its simplicity and inherent non-invasive, reversible nature of the prosthesis. An ideal appliance would not just allow healing

of the traumatic lesions but should possess adequate stability to prevent unintentional frictional trauma. However, retention and stability can be difficult to achieve due to resisting movement and unfavourable oral cavity features. In this case, hypersalivation, repetitive jaw movement and inadequate number of teeth had adversely affected the retention and stability of the bite guard. Various techniques and designs have been described in the literature, but not many reported methods to overcome the issue of poor retention. Thus, the clinician should be able to identify those problems and design appropriate customized appliance that is able to address those shortcomings. In this case, a switch to another design of appliance was warranted as the initial appliance failed to function. Careful registration of oral anatomy and bite helped in producing a well-fitted appliance and avoid excessive vertical dimension. Excessive vertical dimension may instigate more SIB and, in general, may not be tolerated by the patient. This second appliance was better tolerated by patient. Although the full coverage of splint on the teeth surfaces and mucosa may predispose to fungal infection and hinder oral hygiene care, emphasis has been given to the parents regarding the need for daily removal of the splint to allow cleaning and toothbrushing. Regular follow-ups and adjustments of the appliance were planned. This appliance remained functional and successfully met its purpose of guarding the bite hence allowed healing of the traumatic lesions. **Conclusion:** Neurodevelopmental impairment resulting in the demonstration of self-mutilation presents an enormous challenge to address effectively. Oral appliances represent a conservative solution for oral trauma secondary to self-mutilation and an alternative to more invasive approaches. They are not just the initial solution for treatment of oral trauma but can serve as a preventive device against injury to the teeth and oral mucosa. If these methods are unsuccessful, physical restraints, extractions of the offending teeth, and orthognathic surgery can be attempted.

Keywords: Oral Self-mutilation, Cerebral Palsy, Bite Guard

Poster Presentation at the Kelantan Research Day 2018 on 16th October 2018 at Crown Garden Hotel Kota Bharu, Kelantan.

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67. A DILEMMA IN DIAGNOSING MAXILLARY OSTEOMYELITIS IN A 7-DAY-OLD INFANT

Wan Asmat M, Chevyndra C, Rashima A, Shamina MS

Introduction: Infantile maxillary osteomyelitis is a rare clinical entity and is characterized by a high mortality rate. It is further categorized as acute, subacute and chronic depending on the onset of symptoms. It could involve multiple structures in the head and neck region and most of the occurrence manifest as diffuse swelling. Abscess in the hard palate especially in the newborns is unwanted and triggers a huge diagnostic dilemma among clinicians. The management of this lesion can be challenging, as it is clueless in locating the source of infection intraorally that would lead to the misdiagnosis and false reporting. **Case Report:** A presentation of palatal abscess and multiple fistulas with yellowish pus exudate from oral and left nostril in a 7 days old newborn with left conjunctivitis. Pus was drained out through the sinus opening. Bacteria cultures revealed Staphylococcus aureus growth. Computed Tomography Scan reported two hypodense collections within palatal mucosa inferior to the hard palate. IV Augmentin was administered for two weeks. Two weeks post treatment review showed the patient was fully recovered. **Conclusion:** Newborns presenting with intraoral pyogenic infection warrant precise and quick judgement in diagnosis, management, and parental reassurance as they may deteriorate faster as compared to adults. Multidisciplinary approach is vital to ensure successful treatment outcome for the patient.

Keywords: Maxillary Osteomyelitis, Neonatal, Palatal Abscess

Poster presentation at the 5th Malaysian Association of Paediatric Dentistry (MAPD) Biennial Scientific Conference & Trade Exhibition 2019 on 12 – 14 April 2019 at Hotel Weil, Ipoh, Perak.

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68. A RARE CASE OF ANEURYSMAL BONE CYST: A CASE REPORT

Chan YP, Suhailiza S, Shanthini Devi S

Introduction: Aneurysmal bone cyst (ABC) is a rare non-neoplastic lesion of the bones, occurring commonly in the long bones and spine. However, 1.9% of ABC occurs in the jaws with preponderance for the body, ramus and angle of the mandible. It is characterized by a rapid growth pattern with resultant bony expansion and facial asymmetry. Although ABC is a benign lesion, it can behave aggressively due to rapid growth and osteolytic capacity. **Case report:** This is a case of ABC involving the mandible that remained unresolved for about 2 years. A 14-year-old boy was referred for evaluation of a persistent swelling on the mandible which was expanding rapidly for the past 9 months. He was seen by both primary dental and medical practitioners who carried out clinical examinations and investigations without resolution of the condition. Patient presented with a symmetrical face with Class III skeletal profile. Examination showed a diffuse, firm swelling involving the whole mandible. Intraoral findings revealed a bony firm expansion bilaterally with yellowish discharge from posterior teeth. Additionally, multiple mandibular teeth had root resorption and mobility. Radiographic examinations showed an expansile, multi-septated and multi-lobulated lytic lesion involving bilateral body, angle, rami, coronoid and condylar processes of mandible. Results of incisional biopsies were suggestive of ABC. In view of major resection and reconstructive surgery, patient was referred to the Plastic Department, Raja Permaisuri Bainun Hospital, Ipoh. Early diagnosis with appropriate treatment is crucial due to its rapid and destructive nature. This disease entity is rare; therefore raising awareness is vital for diagnosis.

Keywords: Non-neoplastic lesion, mandible, referral

Oral Presentation at Malaysia International Dental Exhibition and Convention (MIDEC) 2018 on 20-22 July 2018 at Kuala Lumpur Convention Center, Kuala Lumpur.

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69. A RETROSPECTIVE STUDY OF VASCULAR ANOMALIES AT ORAL AND MAXILLOFACIAL REGION AMONG PAEDIATRIC PATIENTS MANAGED AT DEPARTMENT OF PAEDIATRIC DENTISTRY HOSPITAL KUALA LUMPUR

Ng YM, Raja Zarina RS, Ganasalingam S, Lau JH

Introduction: Vascular anomalies are localized defects in blood vessels that can affect any part of the vasculatures. Studies about these anomalies at oral and maxillofacial region in Malaysia are scarce. **Objective:** To identify the demographic profiles, clinical features and treatment of patients with these vascular anomalies. **Study Design:** Clinical records of all patients that had been diagnosed as vascular anomalies and being managed at the Department of Paediatric Dentistry, Hospital Kuala Lumpur between year 2008 to 2016 were retrieved and analysed statistically. **Results:** A total of 61 patients were included in this study. The mean age was 6.2 years (range of 1 to 15). There were more girls (35, 57.4%) than boys (26, 42.6%). By ethnicity, the majority were Malays (63.9%), 16.4% were Chinese, 8.2% were Indian and another 11.5% were other races. Majority of the patients (90.2%) had single site involvement with the cheek/buccal mucosa being the most frequent location of lesions. The most common clinical diagnosis was venous malformation (37.7%), followed by venolymphatic malformation (21.3%), haemangioma (19.7%), lymphatic malformation (9.8%), arteriovenous malformation (4.9%), unsure diagnosis (4.9%) and capillary malformation (1.7%). The treatment modalities include sclerotherapy (55.7%), conservative management (21.3%) and others (23%). **Conclusions:** From the study, we managed to identify the demographic profiles, clinical features and treatment of vascular anomalies at oral and maxillofacial region. Such information could be useful to plan for prospective study in future.

Keywords: vascular anomalies, paediatric patients, Hospital Kuala Lumpur

Won 2nd prize for poster presentation at the Malaysian Association of Paediatric Dentistry (MAPD) Scientific Meeting & Annual General Meeting 2017 on 3-5 March 2017 at Primula Hotel Kuala Terengganu, Terengganu.

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Dr. Raja Zarina Raja Shahardin
Dr. Ganasalingam Sockalingam
All from Department of Paediatric Dentistry
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Dr. Lau Jia Him
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70. A RETROSPECTIVE STUDY ON COMPREHENSIVE DENTAL TREATMENT UNDER GENERAL ANESTHESIA IN PAEDIATRIC DENTAL DEPARTMENT,HOSPITAL PULAU PINANG

Geetha SS, Norita AR, Melinda Kaur RS

Introduction: Comprehensive dental treatment (CDT) under general anaesthesia (GA) is a method of pharmacological behavioural management that has been provided for paediatric patients at Paediatric Dental Department, Hospital Pulau Pinang. These patients included those of healthy children with substantial dental needs who were extremely uncooperative or uncommunicative with no expectation that the behaviour would soon improve. Other patients were with certain physical, mental, or medically compromised conditions that possibly unable to tolerate treatment under local anaesthesia alone or together with conscious sedation. **Objective:** To describe the characteristic of child dental patients treated for caries under general anaesthesia and compare the different treatment patterns between healthy and special needs children. **Methods:** This is a retrospective survey. All comprehensive dental treatment for caries done under general anaesthesia that was carried out from January 2015 to December 2016 in paediatric patients between 2 to 16 years old were included. The data were obtained from the patients' hospital records in Paediatric Dental Department, Hospital Pulau Pinang. **Results:** A total of 215 cases with 139 (64.7%) healthy patients and 76 (35.3%) disabled patients were treated under GA. Males (56.3%) were slightly higher than female (43.7%). Majority were Malays (75.8%), followed by Chinese (18.1%), Indian (5.6%) and other ethnic (0.5%). Almost 50% of healthy patients and more than 60% of disable patients having CDT under GA at later age (above 6 years old). There was significantly greater mean of total number of deciduous teeth filled, extracted and sealant placement ($p<0.0001$) in disabled group. In healthy group, a significant difference is noted in the permanent root canal treated teeth ($p<0.0001$). **Conclusion:** Providing early referral and treatment for children who are uncooperative and with a chronic illness/disability may improve their dental health and maintain full dentition. It is highly recommended that dental treatment performed under general anaesthesia as it is beneficial and efficient.

Poster presentation on 3rd September, 2018 at Penang Research Day, Hospital Pulau Pinang.

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71. AN UNERUPTED PERMANENT MAXILLARY CENTRAL, INCISORS AMONG PRIMARY SCHOOCHILDREN IN THE KINTA DISTRICT, PERAK

Chan YP, Suhailiza S, Shanthini Devi S

Introduction: The eruption of human dentition occurs in a chronological sequence. Significant deviations from accepted norms of eruption time is considered as delayed tooth eruption. Delayed tooth eruption is usually asymptomatic, but it may cause cosmetic and pathological complications especially involving the permanent maxillary central incisors. The chronological average age of eruption of permanent maxillary central incisors is 7 -8 years old with normal variations within the limit of one year (6 months sooner or later). Thus, diagnosis of delayed eruption should be made by the age of nine to allow appropriate treatment to be performed and will reduce surgical and orthodontic complication subsequently. **Objective:** To determine the prevalence and management of unerupted permanent maxillary central incisors in the developing dentition among primary schoolchildren in Kinta, Perak. **Methods:** This was a cross-sectional study conducted from December 2016 untill March 2017 by restrospectively examined the 2015 standard 3 students' dental records of school mobile clinics kept at Kinta District Dental Health Office. Using the Sample Size Calculator for Estimations software, the sample size needed for this study was 578. The student's dental records were selected using a multistage sampling method. The schools were systematically selected at every 4th school of a total of 141 schools in Kinta District. Of the selected schools, a student's dental record could also be systematically and randomly selected at every 4th students of school's list. Data of the students' demographics (age, gender and race), presence of maxillary central incisors and patient's management which included the referrals records were recorded into a standardized data collection sheet and analysed using SPSS V20. **Results:** A total of 762 dental records from the total of 3274 were examined. The researchers excluded 13 dental records due to incomplete demographic data and dental charting, giving a final sample of 749 (98.3%). This study found that 19 children (2.5%) had unerupted permanent maxillary central incisors by the age of 9. From the total of 19, there were 14 boys and 5 girls, with a predilection for occurrence mainly in Malays [13 (68.4%)] followed by Chinese [3 (15.8%)], Indians [2 (10.5%)] and Orang Asli {1 (5.3%)]. Of the 19, 10 children (52.6%) had only one unerupted permanent maxillary central incisors. All 19 children with unerupted permanent maxillary central incisors were not referred for further management. **Conclusion:** The prevalence of unerupted permanent maxillary central incisors in the developing dentition among primary school children in Kinta, Perak was 2.5%. This study also showed there was an evidence of delayed in managing children with unerupted permanent maxillary central incisors by primary dental care providers as the children's teeth conditions were not diagnosed and referred to specialist. Therefore, awareness in diagnosing and management of delayed tooth erution is necessary. This is to ensure the proper referral is made for early intervention to avoid complicated treatment in the future.

Keywords: Delayed eruption, unerupted teeth, permanent maxillary central incisors

Oral presentation at Perak Annual Medical Research Conference 2018 on 14 March 2018 at Hospital Raja Permaisuri Bainun, Ipoh, Perak.

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72. AN INNOCENT LUMP THAT TURNED AGGRESSIVE IN AN INFANT: A CASE REPORT

Adelene A, Sarimah MM

Introduction: Rhabdomyosarcoma (RMS) is an aggressive malignancy deriving from the mesenchymal cell affecting the skeletal muscle. It is the most common soft tissue neoplasm in children and adolescents, however rarely occur in infants. Studies shown that age is a prognostic factor where outcome is much worse in infants than older children. **Case report:** A one (1) month-old Malay boy was presented to the paediatric dental clinic Hospital Tuanku Ampuan Najihah (HTAN) with a small exophitic nodular lesion on the upper lip near the philtrum. According to his mother, the lump appeared when he was 2 weeks old and gradually increased in size. The growth of the lesion was continually monitored while waiting for further investigation on the suspicion of congenital heart condition. The lesion grew remarkably within three (3) weeks and causing difficulty in feeding. Ultrasound report suggested an impression of haemangioma. He was immediately transferred to Hospital Kuala Lumpur and MRI was done and was diagnosed as having a malignant tumour. Surgical excision of lesion was done by the Dental Hospital Kuala Lumpur paediatric surgical team. Unfortunately the patient did not survive and died at age 5 months. **Discussion:** Diagnosis of a malignant tumour in earlier infancy proved to be challenging poorer outcome of the disease in infant remains unclear.

Keywords: Rhabdomyosarcoma, Tissue Neoplasm

Won 3rd Best Winner for Oral Presentation at Negeri Sembilan Oral Health Scientific Conference 2019 (N9OHSC) on 29-30 June 2019 at Klana Resort, Seremban, Negeri Sembilan.

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73. BASAL CELL AMELOBLASTOMA IN A PAEDIATRIC PATIENT: A CASE REPORT AND REVIEW OF ORAL BASAL CELL TUMOURS

Sarvambika K, Ahmad Khairuddin Z, Lorend Telajan A

Introduction: Basal cell ameloblastoma (BCA) is a rare histological variant of ameloblastoma. It is composed of densely packed nests and strands of basaloid cells with inconspicuous stellate reticulum-like cells. **Case report:** Ameloblastoma in children is relatively an uncommon tumour and accounts for approximately 15% among all odontogenic tumours. We report a case of BCA in an 8-year-old Iban girl who underwent hemimandibulectomy and reconstruction of the mandible with costochondral graft (CCG). A 6 months review showed that healing process was uneventful. She was regularly being monitored and follow up as the multicystic ameloblastoma likely would recur and the growth rate of the CCG is extremely unpredictable.

Keywords: Basal cell ameloblastoma, costochondral graft, hemimandibulectomy

Poster presentation at 1st Joint Specialist Conference, 9-11 March 2019 at Hotel Istana, Kuala Lumpur

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74. BONDED-RESIN COMPOSITE SLOPE FOR CORRECTION OF ANTERIOR CROSSBITE

Noor Rashidah I, Bahruddin S

Introduction: Anterior crossbite is defined as a malocclusion resulting from the lingual positioning of the maxillary anterior teeth in relationship to the mandibular anterior teeth and can be caused by conditions such as supernumerary, odontomas, retained primary teeth, traumatized primary incisor, lip biting habit and lack of space. It has a reported incidence of 4-5% and becomes evident during the early mixed-dentition phase. **Case report:** The inclusion criterias of the cases reported were those in early mixed-dentition and without the type of skeletal class III malocclusion. Composite resin was formed into an inclined slope and applied to the labial surface of each lower incisor to create a slope of 3-4 mm in thickness at a 45° angle to the longitudinal axis of the tooth. Case 1: A 10-year-old boy presented with a maxillary right central incisor in crossbite with the mandibular central and lateral incisors. A bonded resin-composite slope was applied, and crossbite was corrected in 4 weeks. Case 2: An 8-year-old boy presented with a maxillary left central incisor in crossbite with the mandibular central and lateral incisiors. A bonded resin-composite slope was applied, and crossbite was corrected in 3 weeks. **Conclusions:** The period of mixed dentition offers the greatest opportunity for occlusal guidance and interception of malocclusion. Early diagnosis and treatment of anterior crossbite cases are recommended to prevent tooth wear, anterior tooth mobility and fractures, periodontal pathosis and temporomandibular joint disorders. Different treatment modalities have been used to correct anterior crossbite. The bonded resin-composite slope represents a safe, effective, quick and esthetically acceptable alternative.

Keywords: Anterior crossbite, bonded resin-composite slope

Poster presentation at the 5th Malaysian Association of Paediatric Dentistry (MAPD) Biennial Scientific Conference & Trade Exhibition 2019 on 12 – 14 April 2019 at Hotel Weil, Ipoh, Perak.

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75. CASE REPORT: DENTIGEROUS CYST OF MAXILLA IN YOUNG CHILD

Mohd Zulfadli H, Wan Mazidah WAR, Yushaini A

Introduction: Dentigerous cyst is the most common odontogenic and developmental cysts arising in the jaws. The inflammatory lesion from the root area of a non-vital deciduous tooth has been reported would bring about the development of dentigerous cyst around the unerupted permanent tooth bud. **Case report:** A 5-year-old Malay boy complaint of pain and swelling of upper left buccal sulcus of tooth 64 for 3 weeks duration. Patient has underlying Global Developmental Delay with possible epilepsy. On examination, his oral hygiene was poor with multiple retain root stump. As the patient was very unco-operative, no radiographic examination has been carried out. The patient underwent a comprehensive dental treatment under general anaesthesia. During operation a lesion on apical palatal root tooth 54 was noted and it is attached with crown of unerupted tooth 14. The specimen was sent to pathology lab. **Discussion:** In view of the clinicopathological and surgical findings, a diagnosis of dentigerous cyst was considered. This dentigerous cyst, also known as follicular cyst, is caused by accumulation of fluid between the reduced enamel epithelium and the enamel surface of a formed tooth and it originates by separation of the follicle from around the crown of an unerupted tooth. Extraction of non-vital tooth 54 will allow healing of the lesion. **Conclusion:** Dentigerous cyst occurs in immature tooth as a result of inflammation from preceding non-vital deciduous tooth.

Poster presentation at the 1st Joint Specialist Conference on 9 – 11 March 2018 at Istana Hotel, Kuala Lumpur

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76. CEMENTO-OSSIFYING FIBROMA ON MAXILLA – A CASE REPORT

Farina Berlian MS, Aminah M

Introduction: Cemento-ossifying fibroma (COF) is a rare benign type of odontogenic tumour which is also called ossifying fibroma and cementifying fibroma. **Case Report:** A case of 11 years-old girl presented with swelling over the buccal sulcus of 22 to 24 region for 4 months and increasing in size. On examination the swelling was approximately 4 cm in diameter, hard in consistency and slightly tender on palpation. Radiographic examination shows radiopaque mass on buccal of 24 with palatally displaced 23 to palatal of 21. Surgical removal of the lesion was done and the diagnosis was consistent with Cemento-ossifying fibroma. Post-operatively, the surgical site was healed and periodic review appointments were given to monitor for any signs of recurrence. **Discussion:** This lesion is known as juvenile ossifying fibroma in children, in which more aggressive and with higher recurrence rate. It is commonly seen in female and at premolar region of mandible between the third and fourth decades of life. The tumour consists of varying amount of cementum, bone and fibrous tissue. Since this lesion is well circumscribed and demarcated from the bone, the treatment option is conservative surgery.

Keywords: Cemento-Ossifying Fibroma, odontogenic tumour

Poster presentation at The Joint Specialist Conference 2018 on 10th March 2018 at Hotel Istana, Kuala Lumpur.

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77. CHALLENGES IN MANAGING A RARE LYMPHATIC MALFORMATION WITH PALATAL EXTENSION

Yan MN, Jama'iah MS, Ganasalingam S

Introduction: Cystic hygroma of the neck is a relatively rare congenital malformation of lymphatic system. The extension of this type of lymphatic malformation to oral cavity region usually involves floor of mouth and tongue; rarely to palatal region. Cervicofacial cystic hygroma often leads to airway obstruction, dysphagia and speech pathology. **Case Report:** A five (5) months-old infant with cystic hygroma was referred to us due to chronic bleeding from hard palate. The intermittent bleeding had caused feeding disturbances and chronic blood loss leading to anaemia. Magnetic Resonance Imaging (MRI) demonstrated extension of lymphatic malformation at right neck region to parapharyngeal space and palate. Following the multidisciplinary specialist meeting, consensus was made to locally excise the palatal lesion and manage the rest of the lesion pharmacologically with sirolimus. Excisional biopsy was performed under general anaesthesia. Intra-operatively, no massive bleeding episode encountered. Upon one year of follow up, no bleeding symptoms had been reported and no sign of recurrence was observed. Besides, he was gaining weight well and managed concurrently with Paediatric Dermatology team. **Comments:** Palatal extension of cystic hygroma is rarely reported in literature. Hence, scientific evidence in regards to management of this lesion is scarce. The management of this patient is challenging and it requires multidisciplinary approach. Early surgical intervention by excising the palatal lesion may help solving feeding problems among this patients.

Keywords: multidisciplinary, feeding disturbance, palate,

Won 2nd place for Oral presentation at the 5th Malaysian Association of Paediatric Dentistry (MAPD) Biennial Scientific Conference & Trade Exhibition 2019 on 12 -14 April 2019 at Hotel Weil, Ipoh, Perak.

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78. CLINICAL MANAGEMENT OF HORIZONTAL ROOT-FRACTURED MAXILLARY UPPER INCISORS ACCOMPANIED BY CORONAL LUXATION: THREE CASE REPORTS

Nurul Ainiza Z, Sarimah MM

Introduction: Root fractures of permanent teeth are uncommon as it was observed only in 0.5-7% of all dental trauma cases. The prognosis of root fractures of young permanent teeth is generally good, depending on the fracture site. However, the prognosis is lowered when there is associated luxation injury. This report describes the management of three cases of horizontal root fracture of permanent maxillary incisors with different severity of coronal luxation. **Case report 1:** A 11-year-old Chinese boy presented to the Accident and Emergency Department at Hospital Tuanku Jaafar with an incomplete avulsed tooth (with missing ¼ apical portion) which was knocked out during a motor vehicle accident. As radiographic examination was not available, the decision was to replant and splint the avulsed tooth. Radiographic examination taken later showed the presence of ¼ apical portion retained in the socket with fairly good approximation of coronal portion of the tooth. Root canal treatment and obturation with Biodentine was employed. The tooth showed good healing and pleasant aesthetic at 2 year follow-up review. **Case report 2 and 3:** Patients presented with horizontal mid-root fracture of maxillary anterior teeth and displaced coronal portion of the teeth. Signs of non-healing following interim intracanal medicaments prompted alternative approach using Biodentine and mineral trioxide aggregate (MTA). The teeth showed favourable healing. **Discussion:** Endodontic intervention is required for poor prognosis or non-healing root fractures. Availability of a good sealing material such as Biodentine and mineral trioxide aggregate (MTA) has given superior options for clinicians to manage mid-root fractures. Short-term follow-up for the cases revealed promising results for both clinically and radiographically.

Keywords: Root Fracture, Permanent Teeth, Dental Trauma

Won 3rd Place of Poster Presentation at the 5th Malaysian Association of Paediatric Dentistry (MAPD) Biennial Scientific Conference & Trade Exhibition 2019 on 12 -14 April 2019 at Hotel Weil, Ipoh, Perak.

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79. CONSERVATIVE MANAGEMENT OF DENTIGEROUS CYST ASSOCIATED WITH MULTIPLE ODONTOME: A CASE REPORT

Leezallini S, Radhadevi K, Suriani S, Raja Zarina RS, Ganasalingam S

Introduction: Dentigerous cyst is the most common developmental odontogenic cyst. Odontome is a hamartoma in which composed of tissues native to the teeth. Dentigerous cyst are seen in conjunction with odontoma in 27.6% of cases. **Case Report:** A 16-year-old boy was referred to our department due to loose of upper left posterior teeth associated with swelling for past one month. On examination, noted sulcus obliteration and bony expansion over the upper left quadrant with Grade 3 mobility of 26 and Grade 2 mobility on 27 were noted. On Orthopantogram showed a large unilocular radiolucent lesion with areas of speckled calcification enclosing displaced 28 follicle. Aspirational biopsy noted of clear straw coloured fluid. Incisional Biopsy and marsupilization was carried out with stent appliance for irrigation purpose. Histopathological examination results was consistent with dentigerous cyst associated with odontome. 6 weeks of monitoring, size of lesion was reduced, hence enucleation and curettage of large dentigerous cyst with odontome on left maxilla was done followed by placement of BIPP. Change of BIPP was done monthly and the residual cavity is reducing in size with progressive healing. **Discussion:** There are two treatment modalities to manage dentigerous cyst namely marsupilization and enucleation. In this case, the marsupilization was performed to reduce the intracystic pressure, shrinkage of cyst and bone filling in order to prevent oronasal, oroantralfistula, pathological fracture and to reduce blood loss. The enucleation of the cystic lining including the follicle and odontome to prevent possible recurrence or malignant transformation should the cystic lining has been left behind.

Keywords: treatment modalities, marsupilization, enucleation

Poster presentation at at the 5th Malaysian Association of Paediatric Dentistry (MAPD) Biennial Scientific Conference & Trade Exhibition 2019 on 12 -14 April 2019 at Hotel Weil, Ipoh, Perak.

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Dr. Raja Zarina Raja Shahardin
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80. DENTINOGENIC GHOST CELL TUMOUR WITH ODONTOMA: A CASE REPORT

Prasanna C, Suriani S, Jama'iah MS, Ganasalingam S

Introduction: Dentinogenic Ghost Cell Tumour (DGCT) is defined by WHO as a locally invasive neoplasm. DGCT presents as intraosseous and less commonly as an extraosseous variant, with highest prevalence in the second and seventh decades. It occurs equally in the maxilla and mandible with slight male predilection. **Case Report:** A 10-year-old female presented to Hospital Kuala Lipis with a history of painless, slow growing swelling at the left mandibular region of four months prior. Aspiration, incisional biopsy, and marsupialization procedures were performed and its histopathological examination findings revealed a calcifying cystic odontogenic tumour. Upon four months review, swelling appeared bigger and subsequently was referred to Department of Paediatric Dentistry, Hospital Kuala Lumpur for further management. Clinical examination showed facial asymmetry with soft tissue swelling distal to tooth 31 to 36 with bucco-lingual expansion. Radiographic examinations revealed a well-defined unilocular radiolucency with areas of radiopacity at left mandibular area displacing teeth 33, 34 and 35. Enucleation, peripheral ostectomy and chemical curettage were performed under general anaesthesia and resulting defect was packed with ribbon gauze impregnated with iodoform paste and changed on a monthly basis. Histopathological examination revealed dentinogenic ghost cell tumour with odontoma. **Discussion:** DGCT has high recurrence rate and enucleation with adequate curettage of underlying bone is recommended. Marsupialization may be an option, however, immediate enucleation should be considered due to its local invasive nature of the tumor. **Conclusion:** Conservative management is recommended in paediatric population. Regular follow-up is mandatory for better prognosis and to detect any recurrence for immediate intervention.

Keywords: locally invasive, neoplasm, high recurrence rate

Won 3rd place for Poster presentation at the 5th Malaysian Association of Paediatric Dentistry (MAPD) Biennial Scientific Conference & Trade Exhibition 2019 on 12 -14 April 2019 at Hotel Weil, Ipoh, Perak.

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81. EFFECT OF ART THERAPY ON DENTAL ANXIETY IN 5 TO 6 YEARS OLD PAEDIATRIC PATIENTS

Norul Hana I, Nor Malina M

Introduction: Dental anxiety in children has been recognized as a problem in patient management. Although a vast amount of investigation had been conducted all over the world to determine its prevalence and aetiology in the child population, there is to date no known data on dental anxiety among children with early childhood caries that are in the waiting list for comprehensive dental treatment under general anaesthesia. **Objective: T**o determine and compare pre- and post- dental anxiety level of 5 to 6 years old paediatric dental patients and to assess their behaviour towards dental visit and treatment with and without art therapy. **Methods:** A convenient sample of 22 children in the general anaesthesia identified as dentally anxious aged 5 to 6 year-olds participated in this study. The children were randomly assigned into study and control groups. Their anxiety level were assessed using the Malay version of Faces version of the Modified Child Dental Anxiety Scale (MCDASf) in measuring child-situational anxiety pre- and post-treatment. **Results:** There is significant difference found between the study and control group of the MCDASf item 2 in assessment of post-treatment of the Malay version of MCDASf. The study group children reported higher rating of MCDASf rating but significant different were found for post- and pre-treatment rating for MCDASf item 2 in Visit 2, MCDASf item 3 in Visit 3, MCDASf item 4 in Visit 2, and MCDASf item 6 in Visit 1, while control group children reported that dental anxiety rating has been found significantly increased in the post-treatment rating for the MCDASf items 5 in Visit 1, and MCDASf items 6 in Visits 1 and 2. **Conclusion:** These findings suggest that visual art therapy can reduce the level of child's state anxiety of a 5 to 6 year-old children; this will further help a child to receive dental treatment in dental chair.

Keywords: Dental anxiety, art therapy, paediatric patient

Oral presentation at the National Oral Health Research Conference 2019 on 23 - 24 April 2019 at Eastin Hotel, Kuala Lumpur.

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82. ENDODONTIC MANAGEMENT OF PERMANENT TEETH IN CHILDREN AND ADOLESCENTS: A RETROSPECTIVE STUDY

Nik Nurhannan MB, Nurfarhana I, Hassiah S, Wan Mazidah WAR

Introduction: Endodontic management carried out for pulpal pathosis usually depends on the root development of the permanent teeth and the vitality status of the pulp. Permanent teeth started to erupt at the age of 6-7 years old and the root development will take 3-4 years to completely form and become mature. **Objectives:** This study aimed to determine the frequency and distribution of endodontic management of permanent teeth treated in the Department of Pediatric Dentistry, Hospital Raja Perempuan Zainab (HRPZ) II, Kota Bharu, Kelantan from January 2015 until December 2017. **Methods:** This is a cross-sectional study using retrospective records review. Data on patient's socio-demographic characteristics, position of the teeth, root and pulp status, causes and management of pulpal pathology was retrieved from patient's records and documented in the Data Collection Form. Sample size included all convenient sample. The data entry and analysis were done using the IBM SPSS statistics version 20.0 software. All data was tabulated for descriptive statistics. Categorical variables were summarized in frequency (n) and percentage (%). **Results and discussion:** A total of 2013 patients were seen during the period of survey, out of which 80 (4.0%) patients with pulpal pathosis have been referred for endodontic management of 98 permanent teeth. Seventy-eight (97.5%) patients referred were Malays and 45 (56.3%) were males. Out of 98 permanent teeth treated for endodontic, the majority (92.0%, n=90) involved anterior teeth and only a small proportion (8.2%, n=8) were posterior teeth. In terms of root and pulp status, the majority of treated teeth were presented with matured roots (61.2%, n=60) and non-vital pulp (96.9%, n=95). A substantial proportion of treated teeth had immature root (38.8%, n=38). Most common cause of pulpal pathosis was trauma (n=70, 71.4%) teeth, followed by caries (n=24, 24.5%) teeth and other dental anomalies (n=4, 4.1%) teeth. Teeth with pulpal pathology were managed according to pulp status and root maturity. Pulp capping and Cvek pulpotomy were done on vital pulp with immature roots in 3 (3.1%) teeth. While, regenerative endodontics was done on 36 (36.7%) non vital immature permanent teeth. Only a tooth was treated with apexification. Pulp necrosis is more common in teeth with completed root in 54 (55.1%) teeth and were treated with root canal treatment. However, 4(4.1%) teeth were extracted due to poor prognosis. **Conclusion:** Over a period of 2 years (2015 – 2017), endodontic management seems to be fairly uncommon (4.0%) among patients seen at Department of Paediatric Dentistry, HRPZ II. Most common cause were due to trauma and mostly involved anterior teeth. Noteworthy, incomplete root development of permanent teeth seen in this study left a significant challenge to the clinician. Hence good clinical judgment prior to endodontic management is deemed necessary to ensure the best treatment outcome.

Keywords: endodontic management, permanent teeth, children and adolescents.

Poster Presentation at the East Coast Research Day 2019 on 9 - 10 October 2019 at Taman Tamadun Islam, Kuala Terengganu, Terengganu.

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83. ENUCLEATION AND DREDGING: AN ALTERNATIVE APROACH TO EXTENSIVE AMELOBLASTIC FIBROMA: A CASE REPORT

Dwen-Tjin L, Prasanna C, Jama'iah MS, Ganasalingam S

Introduction: Ameloblastic fibroma is a rare benign odontogenic tumor of epithelial -mesenchymal origin as it accounts for only 2% of odontogenic tumor. Generally, ameloblastic fibroma is painless, slow growing and predominantly found in children. Literature has shown that they are recommended to be managed with resection to have a lower the risk of recurrences. **Case Report:** A 7 year old Malay girl referred to our department with painless swelling at left cheek region since 3 months ago and gradually increasing in size. Further radioimaging investigation using Orthopantomogram (OPG), Cone Beam Computed Tomography (CBCT) and Computed Tomography (CT) Scan showed a large multilocular radiolucency at left mandible from tooth 75 region extending up to left condyle, complicated with displaced tooth 35,36,37 and distal root resorption of tooth 75. Incisional biopsy was done and the Histopathology examination (HPE) result revealed a diagnosis of Ameloblastic fibroma. Treatment of enucleation, chemical curettage and two episodes of dredging were done. Upon 7 months of post dredging, the positive improvements could be seen with formation of new bone with no signs of recurrence. Patient would have to attend routine dental reviews and furthermore, dental rehabilitation is still ongoing. **Discussion:** Considering extent of the lesion and patient's age, a conservative treatment namely enucleation and dredging were chosen despite the chances of multilocular ameloblastic fibroma lesion to recur are higher. Worth mentioning, an invasive procedure such as surgical resection should it be performed in children may lead to irreversible deformities and poor aesthetic.

Keywords: enucleation, dredging, conservative

Won 1st place for Oral presentation at the 5th Malaysian Association of Paediatric Dentistry (MAPD) Biennial Scientific Conference & Trade Exhibition 2019 on 12 -14 April 2019 at Hotel Weil, Ipoh, Perak.

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84. EPIDERMAL CYST AND LYMPHANGIOMA OF THE UPPER LIP: A CASE REPORT

Chew WS, Nabihah D, Sumathy P

Introduction: Epidermal cysts are developmental pathologies thought to derive from aberrant ectodermal tissue characterized by cornified epithelium containing lamellated keratin without calcifications. They are uncommon in the head and neck region and are rarely found in the oral cavity. An epidermal cyst is extremely uncommon in the upper lip and is rarely reported. Lymphangioma are benign tumours resulting from congenital malformation of the lymphatic system that show a marked predilection for the head and neck region. Usually diagnosed at birth and early childhood but rarely in adults. **Case Report:** A 5-year-old boy presented in 2018 with swellings on his upper lip since birth. The swellings were initially small in size but gradually increased to the present size affecting the whole upper left portion of his lip. He has multiple rubbery lobulated round mass in his upper lip which giving him an unpleasant asymmetry look. He underwent biopsy and primary closure of the swellings under general anesthesia. Postoperatively, wound healing was uneventful and there are no signs of recurrence found till the last date of follow up. **Conclusion:** Epidermal cysts of the head and neck regions are a rare hence liable to be misdiagnosed as clinically they appear as lipoma. Meanwhile lymphangioma of the head and neck regions are easily identifiable. Surgical intervention remains as the treatment of choice for both pathologies and having a high index of suspicion is mandatory for differentiation of diagnosis and early detection.

Keywords: Epidermal Cyst, Lymphangioma, Upper Lip Swelling

Oral presentation at the Malaysian International Dental Exhibition & Conference (MIDEC) 2019 on 12 – 14 July 2019 at Kuala Lumpur Convention Centre, Kuala Lumpur.

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85. EVALUTION OF WAITING TIME AND PROCEDURE TIME IN PAEDITRIC DENTAL CLINIC, HOSPITAL SULTANAH BAHIYAH, ALOR SETAR, KEDAH

Azillah MA, Nur' Adilah AO, Tan CE, Zaridah ZA, Yap YW, Chin YJ, Nur Nazihah MH

Introduction: Waiting time is one of the Key Performance Indicator (KPI) in our healthcare sector. Patient dissatisfied with longer waiting time while receiving dental treatment. A longer dental procedure time might contributed to longer waiting time at dental clinic. **Objectives:** Estimating time patients' waiting time and undertaking dental procedure's time in Paediatric Dental Clinic, Hospital Sultanah Bahiyah and formulating strategy to shorten the waiting time and procedure time in Paediatric Dental Clinic, Hospital Sultanah Bahiyah. **Methodology:** This clinical audit was conducted in a prospective manner in July 2018 in Paediatric Dental Clinic at Hospital Sultanah Bahiyah, Kedah. This audit is carried out into two cycles and each cycle only took two weeks in collecting the data. There are two specific indicators and targets in this clinical audit: 1) Waiting time for registration at the counter shall not be more than 15 minutes with the target set of 90%. 2) Waiting time for receiving treatment after registration at the counter must be within 90 minutes with the target set of 90%. **Result First Cycle:** First cycle shows 86.1% for the first objective and 83.8% for our second objective in our clinical audit. **Second Cycle:** Second cycle shows that 94.3% of patients were able to have their registration within 15 minutes and 90.2% received their dental treatment within 90 minutes. These two objectives were achieved following the implementation of strategies as follows; 1. Additional of one stuff at registration counter, 2. Ensure all the treatment cards are kept inside record room and treatment cards must be traced before the date of patient's appointment, 3. Organized and systematic arrangement in patients' appointment. **Conclusion:** Following implementation of strategies in this audit, an improvement for both of the objectives in this audit was observed. Unfortunately, this study didn't evaluate the patient's satisfaction in our service and it is mandatory to study patient's punctuality of their appointment and length of procedure time based on the types and complexity of dental procedure.

Awarded 2nd place in Clincal Audit presented at the Pertandingan Clinical Audit 2018 on 19 September 2018 at Hospital Sultanah Bahiyah, Alor Setar, Kedah.

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86. GENETIC BASIS OF SUPERNUMERARY TOOTH

Suhailiza S, Thirumulu PK, Sarliza Yasmin S

Introduction: Odontogenesis is a complex process regulated by both genetic and molecular controls. The development of a tooth in the embryo stage is controlled by a series of signals which occur between tooth-forming epithelium and neural crest-derived ectomesenchyme. Though many genes are involved in tooth formation involving major signalling molecules, the bone morphogenetic protein and fibroblast growth factor are the most important ones involved in odontogenesis. Supernumerary tooth occurs because of imbalance in the expression of the signalling pathways and their inhibitors. This review highlights the various signalling molecules that play a role in odontogenesis in order to provide a better understanding of the molecular mechanisms involved in the formation of supernumerary tooth in humans.

Keywords: Genetics, odontogenesis, signalling molecules, supernumerary tooth

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87. GREEN TEETH IN A CHILD: A CASE REPORT

Nurhani Izazie MF, Bavani SN

Introduction: Tooth discolouration can be of intrinsic and extrinsic nature depending on the causative agent. An increase in bilirubin level is often associated with greenish intrinsic tooth discolouration. This can be disfiguring and lead to serious aesthetic concern. There were 48 cases of children with green teeth discolouration in 2012. **Case presentation:** A 12 months old boy was brought to Department of Paediatric Dentistry, Kajang Hospital Selangor by his parents who were concerned of greenish discolouration of his front teeth. Past medical history revealed that patient had persistent conjugated hyperbilirubinemia secondary to neonatal hepatitis since birth. Intraorally, the upper and lower primary incisors showed a greenish discolouration whiched varied in pattern and extension. **Discussion:** Taking thorough medical history and clinical characteristics of teeth may help dentist it deduces the underlying systemic problems. Careful assessment, periodic follow-up examinations and timely intervention is necessary to restore the aesthetic and function needs of the dentition.

Oral presentation at the "Developmental Defects of Enamel: Is it a big deal?" Seminar on 24 May 2018 at University of Malaya, Kuala Lumpur.

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88. HYPODONTIA : A MULTIDISCIPLINARY APPROACH

Vijayakumar T, Harrison M

Introduction: Planning a dental treatment for children with hypodontia requires a multidisciplinary approach treatment which incorporating the aesthetical and functional aspects. Several research findings reported children with missing teeth can cause a negative impact on aesthetics and thus, affecting their self-esteem. This case report aims to highlight the complexities of managing hypodontia in 8-year-old girl. **Case Report:** A 8-year-old girl presented with a complaint of "hating the look of her teeth" and was teased at school due to her teeth appearance. On clinical examination, there were multiple retained and carious primary teeth, infraoccluded 84 and clinically missing teeth of 11 and 21. Hypodontia of 15,35,31 and 41 and diminutive 12 and 22 were revealed through the radiographic examination. Radiographic examination revealed hypodontia of 15,35. A treatment plan was formulated involving targeted prevention and quadrant dentistry under local anaesthesia emphasizing on treatment of the carious primary teeth and later on composite build-ups on her 71,81, 12 and 22. Inhalation sedation was utilized to complete the course of dental treatment. The orthodontist and restorative specialist opinions were sought on treatment for the 12,22,71 and 81. **Discussion:** The gene associated with incisor-premolar hypodontia had been hypothesized to be linked to diminutive maxillary lateral incisors. **Reflective learning:** Having to provide a treatment plan for a child with hypodontia often requires good communication between members of the multidisciplinary team as the treatment plan is often provisional and prone to change as the child grows. **Conclusion:** As a paediatric dentist in a multidisciplinary discussion, we play a vital role in forming a holistic treatment plan that addresses the long-term outcomes and the child's current complaint as well.

Keywords: Hypodontia, multidisciplinary approach

Oral presentation at the Conference Research in Paediatric Dentistry (CRiPD) 2019 on 7 – 9 August 2019 at Balai Ungku Aziz, University of Malaya, Kuala Lumpur.

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89. IMPACTED MANDIBULAR FIRST PERMANENT MOLAR ASSOCIATED WITH DENTIGEROUS CYST AND ERUPTED COMPLEX ODONTOMA – A CASE REPORT

Noor Rashidah I, Bahruddin S

Introduction: Dentigerous cyst (DC) is the second most common type of developmental odontogenic cyst. It surrounds the crown of impacted tooth. Occasionally, odontoma is involved. Complex odontoma (CO) is a tumor-like malformation in which enamel, dentin and pulp are present in a disorganized form. Unerupted teeth are associated with 10-44% of complex odontomas. **Case report:** A 12-year-old girl attended the Dental Paediatric Clinic, Hospital Tuanku Ampuan Rahimah (HTAR) Klang, Selangor complaining of pain from the swelling on the right body of mandible. The panoramic radiograph and CT mandible showed a radiopaque mass measuring 2.1 x 1.7 x 2.1cm erupted at complaint site. An impacted mandibular 1st permanent molar (46) with increased follicle was present at antero-inferior aspect. The mass was surgically removed under general anaesthesia. The histopathological report confirmed the diagnosis of CO in association with DC. The crown of molar 46 was fully erupted in July 2018. **Conclusions:** CO causes disturbances in the eruption of teeth. The treatment selected was conservative surgical removal of CO with preservation of the molar 46 to facilitate its eruption. When teeth do not erupt at the expected age, the clinician should be alerted to further investigate, as prompt diagnosis is essential to improve prognosis.

Keywords: Erupted complex odontoma, impacted molar

Poster presentation at the 7th Selangor Research Week on 1st – 5th October 2018 at Hospital Shah Alam

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90. INTRAVASCULAR PAPILLARY ENDOTHELIAL HYPERPLASIA OF THE ORAL CAVITY: A RARE CASE REPORT

Ong YY, Jama'iah MS, Ganasalingam S

Introduction: Intravascular papillary endothelial hyperplasia (IPEH), also known as Masson's tumor, is a benign lesion of the skin and mucosa of vascular origin characterized by reactive proliferation of endothelial cells. IPEH's etiology is unknown and comprises approximately 2% of all vascular proliferation cases of the skin and subcutaneous tissues. Although IPEH may occur in any blood vessel, occurrence in the oral cavity is very rare. **Case Report:** A 10-year-old girl was referred to our department for recurrent swelling over the lower anterior alveolar ridge area. Previously, the patient underwent 2 excisional biopsies procedures under general anesthesia at a local hospital and the histopathology examination reveal a pyogenic granuloma. On clinical examination, showed a soft, raised, non-pulsatile bluish red lesion, measuring about 1cm x 1cm. Due to the recurrence, patient underwent another excisional biopsy under general anesthesia. This time, the histopathology revealed a diagnosis of IPEH. Three months after surgical resection, the patient is well, with no complications or evidence of recurrence. **Discussions/Comments:** The pathogenesis of IPEH is poorly understood. In majority of cases, there are no significant signs and symptoms or complications associated with this condition. However, clinically it can mimic many pathological lesions, both benign and malignant. Thus, it is important for clinicians and pathologists to be aware of this lesion to avoid a misdiagnosis and prevent unnecessary aggressive treatment. Surgical removal is the treatment of choice and the prognosis is generally excellent.

Keywords: rare, oral cavity, misdiagnosis

Oral presentation at the 5th Malaysian Association of Paediatric Dentistry (MAPD) Biennial Scientific Conference & Trade Exhibition 2019 on 12 – 14 April 2019 at Hotel Weil, Ipoh, Perak.

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91. MANAGEMENT OF ACUTE OROFACIAL INFECTION (AOI) IN CHILDREN AT HOSPITAL SERDANG: A RETROSPECTIVE STUDY

Amani A, Navasheilla RR, Mimi Syazleen AR

Introduction: This was a retrospective study was to determine the pattern of management of acute orofacial infection (AOI) of odontogenic origin in children at Serdang Hospital over 3 years period from January 2015 to December 2017. **Methods:** Three years data were gathered retrospectively from January 2015 to December 2017 from record cards of children who were diagnosed as AOI. The records included informationabout the children demographic data, and AOI condition and management (source of infection, sign and symptoms) the need for admission, antibiotic prescribed and timing of dental intervention. The data were analysed using SDSS statistical programme. **Results:** The data of 95 children was studied which comprised of 40 girls and 55 boys of age ranged between 2 to 16 years- old. About slightly more than half of the cases (n= 55, 57.9%) were outpatient, while less than half were inpatient (n=40, 42.1%) with the mean hospitalization length of 3.07 ± 1.203 days. Among the children of aged below 6 years-old the source of AOI was significantly different between the upper and lower face (P>0.02). The primary upper left posterior teeth were the most common teeth affected (27.4%). Treatment modalities including systemic antibiotics with a conjunction of dental and/or surgical intervention. For outpatient care, the most commonly prescribed antibiotic was Augmentin ® (34.5%) while for inpatient, 60% using a combination of Augmentin ® and Metronidazole. About 81.1% dental interventions were performed out under general anesthesia, followed by under local anesthesia without sedation (13.7%) and a lower percentage with sedation (5.3%). Extractions were carried out in 89.5 %, whilst (5.3%) incision and drainage followed by pulp therapy. For outpatient (49.1%) and inpatient care (90%), all dental interventions were executed within 1 week. **Conclusions:** Antibiotics should be considered as the first line of treatment of AOI. Although it can reduce the need for admission, surgical or dental intervention should not be delayed if possible.

Keywords: Acute orofacial infection, odontogenic, antibiotic

Oral presentation at the International Association for Dental Research Malaysian Section (South-East Asian Division) Conference 2018 on 24 February 2018 at Holiday Villa Subang, Selangor.

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92. MANAGEMENT OF ADENOMATOID ODONTOGENIC TUMOUR (AOT): A CASE REPORT

Azillah MA, Tan CE, Yap YW, Nur Nazihah MH

Introduction: Adenomatoid odontogenic tumour (AOT) is a benign epithelial odontogenic tumor which can be presented as intraosseous and extraosseous types. A clinicopathologic study of 173 odontogenic tumours in Northern Peninsular Malaysia (2007-2014) have reported a prevalence of 4.6% on AOT. **Case report:** A 13 years 8 months old Indian girl was referred to paediatric dentistry clinic for further management of swelling and pain on upper left buccal segment. Upon examination, facial asymmetry noted with swelling extending from left nasolabial fold to left malar region. Intraorally, there was a solitary smooth circumscribed swelling with 3cm x 3cm in size noted in relation to buccal segment of teeth 23, 24 and 25. Mild tenderness and egg-shell crackling sound noted upon clinical palpation. Full investigations done before proceed with surgical enucleation of the AOT under general anaesthesia (GA). After the surgical procedure, patient was showing good wound healing at surgical site and oral rehabilition was done by fabricating an upper partial denture. **Discussion:** Patient had similar signs and symptoms like others AOT presentation. However, paraesthesia was not manifested and radiographic features in this case possess only minor resemblance with the common presentations of AOT, in which internal calcification features or associated impacted tooth were not found. The distinctive histopathological features in this case (i.e. the thick and fibrotic capsule around the lesion, columnar epithelial cells form rosette /ductlike structures that are hollow in the middle) are crucial in the diagnosis AOT. The total surgical enucleation was performed during excisional biopsy under GA in consideration of the presence of thick and fibrous capsulated lesion with clear demarcation intraoperatively. These intraoperative findings justified a benign hamartoma lesion such as AOT in contrast to the other more aggressive benign odontogenic lesions (i.e. ameloblastoma/ KCOT).

Keywords: Adenomatoid odontogenic tumour, oral rehabilition, total surgical enucleation

Poster presented at the 5th Malaysian Association of Paediatric Dentistry (MAPD) Biennial Scientific Conference & Trade Exhibition 2019 on 12 – 14 April 2019 at Hotel Weil, Ipoh, Perak.

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93. MANAGEMENT OF AMELOBLASTOMA IN ADOLESCENT PATIENT: A CASE REPORT

Nuratiqah J, Aminah M, Jaswinder S

Introduction: Ameloblastoma is classified as a benign tumor of odontogenic epithelial origin. It is locally aggressive and has high recurrence rate. Clinical symptoms of this tumour are pain, ulceration, tooth mobility, root resorption and malocclusion. This tumour is more common in mandible than maxilla, commonly in the third to fourth decade of life and no gender predilection. **Case report:** A healthy 15-year-old boy presented to us with an enlarged swelling on left side of face. Extraoral examination showed swelling with normal overlying skin on left mandible and no limitation of mouth opening. Intraorally, bucco-lingual bony expansion present from region of tooth 36 to retromolar area, hard in consistency and non-tender on palpation. Radiographic examination showed large radiolucent lesion from 36 region extending to left ramus with thin mandibular bone margin and displaced teeth 37 and 38. Biopsy and marsupialization were done and the histopathology result reported as odontogenic cyst or tumor. Enucleation of the lesion was performed under general anaesthesia. Specimen was sent for further investigation and histopathology result was consistent with ameloblastoma. At the twelfth month review, no signs of recurrence observed clinically and radiographically. He is currently under our care for annual clinical and radiographic examination. **Discussion:** Treatment options for ameloblastoma are enucleation, dredging, marsupialization and resection. In young patients, it is recommended for conservative management to control progression of disease until patient is mature enough for resection if needed.

Keywords: Ameloblastoma, adolescent, marsupialization, enucleation

Oral presentation at the 5th Malaysian Association of Paediatric Dentistry (MAPD) Biennial Scientific Conference & Trade Exhibition 2019 on 12 – 14 April 2019 at Hotel Weil, Ipoh, Perak.

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94. MANAGEMENT OF AMELOGENESIS IMPERFECTA IN A 12 YEAR OLD PATIENT

Meshala BS, Bahruddin S

Introduction: Amelogenesis imperfecta is an inherited disturbance of enamel formation qualitatively or quantitatively in the primary and permanent dentition. It manifests clinically as discoloured, pitted, grooved or worn out enamel on teeth. **Case report:** A 12-year-old male patient presented with a complaint of sensitive teeth and dissatisfaction with his appearance. Patient had no significant medical history. Dental history revealed that the primary dentition appeared broken down. Patient's family members didn't have similar problem. Clinically, patient had mixed dentition with pitting and yellow discolouration of teeth and severely attrited molars with short clinical crowns. Oral hygiene was poor with generalised gingival inflammation. Orthopantomogram revealed the presence of generalised thin radiopaque layer of enamel with normal radiodensity. A diagnosis of hypoplastic amelogenesis imperfecta was made. Treatment was carried out to improve oral hygiene, enhance esthetics, restore masticatory function and reduce tooth sensitivity. Preventive phase was initiated with dietary advice and oral hygiene instructions. Restorative phase begun next with placement of stainless steel crowns on first molars. Direct composite build up were done on the incisors and premolars. The second molars were temporized with glass ionomer cement. **Follow up:** Maintenance phase involves monthly recall and oral hygiene reinforcement. **Conclusion:** Management of amelogenesis imperfecta beginning at childhood progressing to adulthood can be a challenge to clinicians. A multidisciplinary approach will be required during the permanent restorative phase.

Keywords: Amelogenesis imperfecta , hypoplastic

Oral presentation at the Developmental Defects of Enamel: Is It A Big Deal? Workshop on 24 May 2018 at University of Malaya, Kuala Lumpur.

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95. MANAGEMENT OF PAEDIATRIC MANDIBULAR FRACTURE WITH LINGUAL SPLINT

Ong YY, Suriani S, Jama'iah MS, Raja Zarina RS, Ganasalingam S

Introduction: Mandibular fractures are uncommon in the paediatric population. Although the etiological factors and clinical manifestations of these injuries are similar to those in adult, treatment for paediatric patient is unique due to the psychological, physiological, developmental and anatomical characteristics of children. Treatment is aimed at re-establishing preinjury occlusion and function as well as allowing normal skeletal growth post injury. **Case Report:** An otherwise healthy 6-year-old boy was referred to the Department of Paediatric Dentistry, HKL with a right parasymphysis fracture of mandible associated with laceration wound on the lower chin due to fall on a slippery floor. Panoramic film revealed a displaced fracture on the right mandible between canine and the first premolar. Lingual splint was fabricated and subsequently closed reduction and immobilization of the fractured mandible was carried out using the splint under general anaesthesia. **Lesson learnt:** Most paediatric mandibular fractures especially in very young children can be managed conservatively or with a minimally invasive approach to achieve satisfactory result. Lingual splints used in stabilizing the fractured mandible is effective and reliable in treating selected cases. Conservative treatment is advocated in young growing children as the use of internal rigid fixation may have negative effect on skeletal growth and developing teeth. **Discussion/Conclusion:** Management of children with primary or mixed dentition is complicated by various factors. A lingual splint should be considered as an option as its use limits the discomfort and morbidity that may be associated with maxillomandibular fixation or open reduction and internal fixation.

Oral presentation at the Conference Research in Paediatric Dentistry (CRiPD) 2018: 2nd Case Reports in Paediatric Dentistry on 21 April 2018 at Hospital Sungai Buloh, Selangor.

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96. MANAGEMENT OF SELF-MUTILATION PATIENTS WITH LESCH-NYHAN SYNDROME: TWO CASE REPORTS

Chew WS, Nabihah D

Introduction: Lesch-Nyhan Syndrome (LNS) is a rare X-linked disorder caused by mutation in HPRT1, an important enzyme in the purine salvage pathway. Symptoms include overproduction of uric acid, dystonia, gout, intellectual disability, and self-mutilation. This report describes two patients diagnosed with LNS who came to us for management of self-inflicted oral injuries. Both patients' parents agreed that a conservative approach, avoiding teeth extraction, should be followed initially before any radical intervention. **Case Reports:** We report two intriguing cases of two 3-year-old boys diagnosed with LNS who were referred to us for management of extensive traumatic oral ulcerations in 2018 & 2019. After a thorough discussion with both parents, removal dental appliances were fabricated for them. Parents were instructed and trained on insertion and anchorage, removal, cleaning of the appliances. One week later, frequencies of self-mutilation have improved and healing of lesion was observed. However, one patient subsequently damaged his appliance repeatedly and developed recurrent oral ulceration. After much consideration, his parents agreed for dental extractions under general anesthesia. **Conclusion:** It is important to know about LNS and the effects of self-mutilation on the family, in order to know how and when to treat, thus giving patients and their family the best possible quality of life. Oral appliances represent a conservative approach to the issue and should be tried initially before resorting to dental extractions.

Keyword: Lesch-Nyhan Syndrome, Self-Mutilation, Uric Acid.

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97. MINIMALISTIC APPROACHES TO TREATING LARGE ODONTOGENIC CYSTS IN CHILDREN: A REPORT OF 3 CASES

Goh DS, Leong KJ, Azalina O, Nurnabiha J, Eunice LC

Aim: The management of odontogenic cyst is usually determined by its dimension. Treatment includes enucleation, decompression or marsupialization and even bony resection. Invasive surgical approach may result in significant morbidity like pathological fractures or disfigurement of the mandibular-maxillary complex, adversely affecting growth and development in children. This poster aims to present case series of large odontogenic cyst, successfully managed via minimally invasive methods. **Material and Methods:** A retrospective case series of 3 paediatric patients with large odontogenic cysts will be presented. The radiographic presentation, management and healing progress of these odontogenic cysts will be highlighted and discussed. Management may involve aspiration biopsy, incisional biopsy, extraction, root canal therapy or marsupialization. Radiographic investigations were taken periodically to monitor the reaction of the pathology towards treatment over the course of 12-36 months. **Results:** The odontogenic cysts reduced in size after the treatment was commenced. This was indicated by the reduction of size in radiolucent areas noted from radiographs taken during review visits, and from the improvement of signs and symptoms such as swelling, facial asymmetry and positioning of teeth at the area of pathology. **Conclusion:** Some odontogenic cysts respond well to minimally invasive treatments by removal of the source of inflammation and by decompressing the cystic cavity. Minimally invasive treatments may allow for a prompt and simpler alternative. This may prevent gross tissue loss, altered growth and development of the maxillofacial complex in children.

Keyword: Minimally invasive, dontogenic cyst, paediatric, management.

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98. MORQUIO SYNDROME (MPS TYPE IV A): IT'S CHALLENGES IN DENTAL MANAGEMENT

Ida Madiha MH, Habibah MS, Bahruddin S

Introduction: Morquio syndrome (Mucopolysaccharidosis type IVA) is an autosomal recessive lysosomal storage disorder (LSD) caused by deficiency of Nacetylgalactosamine-6-sulfate sulfatase (GALNS) and cause accumulation of specific glycosaminoglycans (GAGs) mainly in cartilage and extracellular matrix (ECM) including teeth. **Case Report:** A case of 6.2 years old healthy girl, referred to Paediatric Dental team for dental assessment and management. Patient was diagnosed by Geneticist with Morquio syndrome type IV A and under management and follow-up with Paediatric team. Clinical examination showed marked short stature, protrusion of the chest, kyphoscoliosis, platyspondyly, coxa valga, abnormal gait, laxity of joints, stubby hands and generalized hypoplastic primary dentition. Radiographically, she presented with normal presentation of permanent teeth according to her chronological age. Comprehensive dental treatment including stainless steel crowns, composite restorations and extractions performed. **Discussion:** Further monitoring is still needed to assess the eruption status of permanent dentition and future treatment needs. **Lesson learnt:** Morquio syndrome might affect dentition hence, dental assessment is mandatory in every patient. Early treatment in hypoplastic primary dentition prevent progress of the condition and further reduce risks of treatment under general anaesthesia. **Conclusions:** Early assessment and management of generalized hypoplastic primary dentition may contribute to beneficial effects to future eruption of permanent dentition.

Keywords: Mucopolysaccharidosis, Morquio, hypoplastic

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99. MULTIPLE KEROTOCYSTIC ODONTOGENIC TUMOURS IN GORLIN SYNDROME: A CASE REPORT

Chew WS, Sumathy P, Mathan Raj N

Introduction: The keratocystic odontogenic tumour (KCOT), though, is a benign neoplasm of odontogenic origin, it is locally aggressive and highly infiltrative which leads to high recurrence rates. Multiple KCOTs are usually seen in association with Gorlin Syndrome, which is an uncommon autosomal dominant inherited disorder caused by mutation in PTCH gene. Gorlin Syndrome is characterized by multiple KCOTs, basal cell carcinomas, calcifications of the falx cerebri, facial dysmorphism; skeletal, dental, ophthalmic and neurological abnormalities. Diagnosis is established with identification of major and minor clinical and radiological criteria and ideally through genetic testing. **Case Report:** We report an intriguing case of a 15-year-old girl with multiple KCOTs simultaneously occurring in maxilla and mandible in 2014. Preliminary clinical findings and plain radiographs did not reveal signs of Gorlin Syndrome. She underwent enucleation, curettage and peripheral ostectomy of the tumours at different sites of maxilla and mandible periodically. She was then kept under regular follow-ups to screen for recurrence. However, in late 2017, she presented with palmar pittings which raised a high suspicion of Gorlin Syndrome. This subsequently led to thorough investigations which revealed calcification of falx cerebri through a CT scan. The presence of multiple KCOTs and calcification of falx cerebri; which are the two major criteria; were compatible with the diagnosis of Gorlin Syndrome. Genetic testing had been proposed to further support the diagnosis. **Conclusion:** Multiple KCOTs associated with Gorlin Syndrome may present at an early age. Hence, Gorlin Syndrome should always be suspected in children with multiple KCOTs even in the absence of other manifestations at the initial stage of presentation. It has a greater disposition to recur and is more aggressive than non-syndromic KCOT. Long term complications in Gorlin Syndrome mandate close surveillance and early treatment.

Keywords: keratocystic odontogenic tumours, Gorlin Syndrome

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100. NEUROFIBROMA OF THE PALATE: A CASE REPORT

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Introduction: Neurofibroma is tumour of neural origin and its presence is one of the clinical criteria for the diagnosis of the neurofibromatosis (NF). There are two distinct variants of neurofibromatosis, type I and type II. NF type 1 (NF1) also known as Von Recklinghausen's disease is the most common type of NF. We present a case of neurofibroma of the hard palate associated with NF 1. Literature was reviewed and different types of neurofibroma, incidence in the oral cavity, association with neurofibromatosis, clinical manifestations, treatment, and recurrence are discussed. **Case report:** A 7-year-old girl was referred for a persistent swelling on the palate noted since birth which gradually increase in size. The past medical history was not contributory. Clinically she presented with frontal bossing, multiple cafe-au-lait pigmentations and nodules. Intraorally noted sessile swelling measuring 2x2cm related to the anterior palate. The panoramic view revealed no bony involvement. Incisional biopsy was carried out under Local Anaesthesia, revealed the diagnosis of neurofibroma. However, patient defaulted follow up and came back after 6 years due to the pain and displacement of incisors associated with the same lesion. Complete surgical resection was then performed and histopathological examination revealed the same diagnosis. **Discussion:** Neurofibroma of the palate is relatively a rare benign tumour of the oral cavity associated with NF 1. The diagnosis of the lesion was made based on the presence of clinical findings,and histopathology. Treatment of neurofibromas is by surgical resection. The patient is currently under periodic follow-up and no evidence of recurrence is seen after 1 year.

Keywords: Neurofibroma,palate

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101. ORAL SPLINT: MANAGEMENT OF TRAUMATIC INJURIES IN AN EPILEPTIC CHILD

Mazni Fatihah MZ, Nik Nurhannan MB

Introductions: Epilepsy is a chronic brain disorder that causes recurrent and unpredictable epileptic seizures. This is characterized by an alteration of behaviour, perception and mental activities which includes involuntary muscle contraction and temporary loss of consciousness. Approximately 0.5% to 1.0% of the United States population affected by epilepsy. Patients with epilepsy are more susceptible for injury especially oral injury. **Case Report:** A 2 years old Malay boy with underlying spastic quadriplegic cerebral palsy and epilepsy secondary to perinatal asphyxia was referred to our department for management of oral injuries. The child sustained laceration wounds on lower lip after a few episodes of epileptic seizures in the paediatric ward. Upon clinical examination, multiple laceration wounds were noted below the lower lip and the lower anterior labial sulcus. Multiple oral ulcerations were noted on lower labial mucosa. Oral toileting was done and an alginate impression of the upper arch was taken. A soft oral splint was fabricated and issued to the patient. Good oral hygiene care was emphasized to the mother. During review visit in the clinic, the soft tissue healing was satisfactory but the splint was getting loose and easily dislodged. Therefore, another alginate impression was taken, and a new hard splint was issued with similar design. The child was able to tolerate the new splint with better retention and stability. **Discussion:** Numerous treatment approaches have been suggested in literatures for oral traumatic injuries in special needs patients. Conservative management with an appropriate oral appliance allows healing of the lesion and prevent further injury. Moreover, a simple and easily fabricated hard splint offers better retention than soft splint and more desirable for long-term use.

Keywords: Oral splint, oral traumatic injuries, epileptic child.

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102. OSSEOCARTILAGINOUS CHORISTOMA OF THE TONGUE

Meshala BS, Bahruddin S

Introduction: Choristomas are proliferation of histologically normal tissue in an ectopic location. Osseocartilaginous choristoma of oral soft tissue are rare frequently occurring in the tongue, buccal mucosa, soft palate and gingiva. The etiology and pathogenesis of choristoma remains debatable till date. **Case presentation:** A 7-year-old Malay boy presented with a painless mass on the ventral surface of tongue. The patient reported that the lesion was gradually increasing in size causing difficulty in eating and speaking. No history of trauma was elicited. On examination, a lesion measuring 2cm in its greatest diameter, pink in colour and pedunculated in appearance was noted. The lesion was hard on palpation appearing clinically consistent with fibroepithelial polyp. Excisional biopsy of lesion was done under general anaesthesia. Grossly the specimen was a hard tissue measuring 2.9x2.3x1.8cm. Microscopic finding of the decalcified specimen revealed an encapsulated island of mature hyaline chondroid tissue in a dense fibrovascular stroma, separated from surrounding skeletal muscle fibers beneath a surface covering of parakeratinized straitified squamous epithelium. A focal area of lamellar bone was also noted within the fibrous connective tissue. The lesion is interpretated as osseocartilaginous choristoma of the tongue. The lesion healed uneventfully one week post surgical excision. **Discussion:** Majority of choristomas of tongue are asymptomatic although some have reported dysphagia, gagging, nausea and irritation. Osseocartilagenous choristomas have a benign clinical behavior. Any lesions in the oral soft tissue containing cartilage must be differentiated from malignant cartilaginous tumors. Treatment of choice is surgical excision as there's no reported case of recurrence till date.

Keywords: choristoma

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103. OSTEOMYELITIS OF MANDIBLE SECONDARY TO AN UNSUAL CAUSE: A CASE REPORT

Girijaa Vathi N, Sumathy P, Suhailiza S

Introduction: Osteomyelitis is a bone disease with multiple etiologies. Here we describe an interesting case report of a mandibular osteomyelitis of an unusual origin. **Case report:** A healthy 15-year-old Indian girl presented in August 2018 with recurrent pain in the region of 35 and 36 for about 2 months. Clinical examination revealed mild left extraoral mandible swelling with the left buccal bone expansion without any evidence of odontogenic infection. Radiological finding was suggestive of osteomyelitis of left mandible. The diagnosis was further confirmed by histopathological examination following a biopsy, performed under general anaesthesia. Initial esolution of the lesion was remarkable with administration of antibiotics. However, she presented with recurrent pain on the left mandible shortly after the completion of antibiotics, with generalized areas of radiolucency involving her entire mandible. This necessitated haematological examination to rule out systemic bone disease which showed significant deficiency in Vitamin D. She was then commenced on a Vitamin D supplement under the care of an endocrinologist. The patient had since been asymptomatic with significant mandibular bone healing. **Discussion:** Vitamin D is an essential component for intestinal absorption of calcium, magnesium and phosphate. A fall in in vitamin D could lead to calcium insufficiency and an increase in the susceptibility to infection leading to impaired bone mineralization. **Conclusion:** The occurrence of osteomyelitis though, is an uncommon feature in Vitamin D deficiency, but cannot be overlooked. **Lesson learnt:** A systemic cause should always be investigated if an osteomyelitis is not responding to the conventional therapy.

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104. OSTEOPETROSIS – A RARE INHERITED DISORDER

Suhailiza S, Thevadass KP

Introduction: Osteopetrosis (marble bone disease) is a congenital skeletal disorder characterized by generalized sclerosis of bones due to malfunctioning osteoclasts. It is extremely rare and estimated incidence is 1 in 100,000–500,000 birth. It presented with 2 major clinical forms: the autosomal dominant benign form is associated with few or no symptoms, whereas the autosomal recessive malignant form is typically fatal during infancy or early childhood. Osteopetrosis is one cause of osteosclerosis and may result in such serious oral complications such as osteomyelitis and exposed necrotic bone. Osteomyelitis of the jaws can eventually be fatal in these fragile patients. Thus, an understanding of causes and pathogenesis of disorder is crucial to optimize oral health and prevent adverse sequelae in the future. **Case report:** This is a case of 5 years 3 month old girl presented with multiple episodes of jaw swelling with multiple discharging sinuses since year 2015. Radiographic investigations showed extensive periosteal reaction involving the embeded tooth buds and mandible. Surgical debridement was performed once under general anaesthesia in year 2015. Currently she is under long-term systemic antibiotic therapy and local debridement of affected jaw. **Conclusion:** Discussion of the case may provide guidance on the management of patients with osteopetrosis later.

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105. OUTCOME OF REVASCULARIZATION OF 61 NON VITAL IMMATURE ERMANENT TEETH WITH FOLLOW UP PERIOD OF 32 MONTHS

Lim SY, Sarimah MM, Laila AJ

Introduction: Management of thin, fragile dentinal wall and wide open apex of non vital immature permanent teeth is a great challenge especially in cases which less than half root has formed. Revascularization is an alternative approach to conventional method of apexification in the management of immature permanent teeth with compromised structural integrity. **Objective:** To evaluate the treatment outcome of revascularization procedure on non vital immature permanent teeth (NVIPT). To investigate the association between root formation stage of NVIPT and treatment outcome. **Methods:** All NVIPT of healthy children which were treated by means of a standardized revascularition protocol from year 2013 to 2017 and had been periodically followed up of a minimum of 24 months were included in the study. All teeth were assessed clinically and radiographically. A mixture of triple antibiotic (Ciprofloxacin, Metronidazole and Minocycline) and copious irrigation (Normal Saline, 0.2% Chlorhexidine and 0.5% Sodium Hypochloride) were used to disinfect the canal completely in all cases. Following this overinstrumentation was carried out to induce bleeding in order to create scaffold for the ingrowth of the new tissue. Mineral Trioxide Aggregate was used as coronal restorative material in order to achieve a tight coronal seal. Romexis radiographic system was used to carry out quantitative analysis of the radiographs (degree of changes in root length and dentinal wall thickness). The data obtained were analysed statistically using descriptive analysis and Chi-square test. **Result:** Out of 82 cases, 61 NVIPT of 53 children with the mean age of 11 (SD ± 2.3) fulfilled the inclusion criteria. Etiology of vitality loss were delayed presentation of traumatized tooth (n=26), acute dental trauma (n=18), sequelae of untreated pulpal exposure of Leong's premolar (n=14) and dental caries (n=3). 59% of teeth were presented with 2/3 root formed (Nolla's Method). They were monitored closely for an average of 32 months (range of 24 to 48 months). 43 (70.5%) cases showed complete success with signs of resolution of periapical radiolucency, thickening of dentinal wall, continuation of root growth, apical closure and positive response to sensibility test. 14 (23.0%) cases demonstrated acceptable success with absence of signs and symptoms but lacking in one or two criteria of complete success. 4 (6.6%) cases had signs of treatment failure, needing further treatment which reduces the survival rate to 98.4%. Signs of failure can be observed at the minimum of 18 months review. There was a significant association of treatment outcome and root formation stage of NVIPT ($p<0.05$). 75% of all 2/3 formed teeth that undergone revascularization achieved success and 25% achieved partial success in the treatment outcome. **Conclusion:** This study confirmed that revascularization is an effective treatment modality in treating NVIPT with favourable clinical outcome of thickening of dentinal wall, root growth and achieving apical closure. More the 2/3 root development will result in higher success rate for revascularization treated tooth.

Keywords: Regenerative endodontics, Revascularization, Non vital immature permanent tooth

Oral presentation at the 11th Biennial Conference of the Paediatric Dentistry Association of Asia 2018 on 14-16 September 2018 at Beijing, China.

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106. PAEDIATRIC FACIAL CELLULITIS OF ODONTOGENIC ORIGIN - 10 YEARS EXPERIENCE

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Aim: Facial cellulitis can progress quickly producing significant systemic complication, thus early diagnosis and management are crucial. This retrospective study aimed to investigate the clinical characteristics of facial cellulitis of odontogenic origin (FCOO) in children treated at Hospital Serdang over 10 years period from 2007 to 2017. **Methods:** Medical records of 337 children aged between 2 to 16 years old were retrieved for all patients with a discharge diagnosis of FCOO. Out of that, 256 children were selected. Data pertaining to demographics, source of infection, symptoms, treatment modalities were collected and analyzed using SPSS. **Results:** Of the 256 children, 93.8% were Malay and 55.9% were boys. Upper posterior teeth affected in 42.2%. 88.7% reported to have symptoms of toothaches and only 30.5% complained of fever. Hospitalization was needed in 23.9% and the mean length of stay was 3.45 ±1.49 days. Treatment modalities including systemic antibiotics with a conjunction of extractions were carried out in 78.5%, root therapy (6.6%) whilst 3.9% with incision and drainage. Treatment under General Anesthesia (GA) was carried out in 63.7%. Of this, 14.5% had the source of infection removed at chairside prior to GA. **Conclusions:** With correct diagnosis, pharmacological therapy and appropriate timing of interventions, rapid resolution of the infection can be achieved. It is hoped that the information collected from this study could be useful to plan for prospective studies in the future as to date there are limited studies on facial cellulitis of dental origin among pediatric population found in the literature in Malaysia.

Keywords: Facial cellulitis, odontogenic

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107. PARENTAL PERSPECTIVES OF ORAL HEALTH-RELATED QUALITY OF LIFE (OHRQoL) FOLLOWING DENTAL TREATMENT UNDER GENERAL ANAESTHESIA IN KUALA TERENGGANU

Yushaini A, Nur Diyana M

Objectives: The objectives of this study were (a) to examine parental satisfaction with General Anaesthesia (GA), (b) to determine parental perception of the impact of GA dental treatment on the child's quality of life in relation to physical health, and (c) to determine the impact of GA dental treatment on the child's quality of life in the social dimension. **Methods:** This study included 60 children aged between 2 and 16 years and complied with the American Society of Anaesthesiology Classification of I or II. The exclusion criteria were medically compromised children with cerebral palsy or congenital heart disease. Data were collected using 2-page survey instrument completed by the parents at the first follow-up appointment. **Results:** Parental perception was overwhelmingly positive with regards to dental outcomes (i.e. pain relief and improved masticatory efficiency). Parental perception in the social dimensions was also good. Parents reported more smiling, improved school performance, and increased social interaction. Relative to overall health, the majority of parents reported an improvement. **Conclusions:** Dental treatment under GA results in the immediate improvement of children's oral and physical health, emotional and social quality of life. Our findings indicate that dental treatment under GA for children has a high degree of acceptance by parents and is perceived to have a positive social impact.

Keywords: OHRQoL, general anaesthesia

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108. PENILAIAN INDEX JISIM TUBUH (BMI) DALAM KALANGAN WARGA STAF PERGIGIAN PEDIATRIK, HOSPITAL SULTANAH BAHIYAH, ALOR SETAR, KEDAH

Azillah MA, Nur' Adilah AO, Yap YW, Chin YJ, Nur Nazihah MH, Nadiatul Akmal BH

Latarbelakang: Kegemukan atau obesiti adalah satu penyakit kronik yang sedang menular dalam kalangan masyarakat dunia dan Malaysia khususnya. Kementerian Kesihatan Malaysia (KKM) sentiasa berusaha untuk meningkatkan tahap kesihatan orang ramai tanpa mengira usia. Oleh itu, sebagai staf kesihatan kita perlu memastikan bacaan BMI adalah di tahap yang normal kerana secara tidak langsung kita mencerminkan warga staf KKM dan menjadi contoh teladan kepada para pesakit. **Objektif Am:** Untuk mengurangkan masalah berlebihan berat badan dan obesiti dalam kalangan warga staf di Klinik Pakar Pergigian Kanak-Kanak, Hospital Sultanah Bahiyah, Alor Setar, Kedah. **Objektif Khusus:** 1. Untuk mengurangkan sebanyak 0.5-1.0 kilogram berat badan staf (yang berlebihan berat badan dan obes) untuk setiap minggu selama 6 minggu. 2. Untuk meningkatkan motivasi dan pengetahuan bagi mengurangkan berat badan. 3. Untuk memberi intervensi pemakanan dan aktiviti fizikal kepada staf yang mempunyai masalah berat badan. **Methodologi:** Kajian ini menggunakan "*universal sampling method*" untuk mengumpul data subject di dalam audit ini. Kajian audit ini akan dijalankan dalam tempoh 8 minggu dan melibatkan sample size sebanyak 25 staf dari Klinik Pakar Pergigian Kanak-Kanak. Kajian audit ini akan dijalankan sebanyak dua kitaran sepanjang 2 bulan. Untuk audit kitaran pertama, semua staf akan diminta untuk mencatat setiap makanan yang diambil. Berat badan akan ditimbang sebelum menjalani audit kitaran pertama ini. Audit Kitaran Pertama ini hanya mengambil masa dua minggu dan diet chart akan diserahkan kepada pegawai dietetik untuk membuat analisa berkenaan cara pemakanan staf dan semua staf akan dibahagikan kepada 3 kumpulan, iaitu, obes, berlebihan berat badan dan normal. Kitaran Kedua mengambil masa 6 minggu. Semua staf yang yang mempunyai masalah BMI iaitu kumpulan yang obes dan berlebihan berat badan haruslah merekod diet chart mereka dan berat badan akan diambil selepas audit kitaran kedua. **Keputusan: Kitaran Pertama:** Kitaran pertama menunjukkan sebanyak 12 daripada 25 orang staf Klinik Pakar Pergigian Kanak-Kanak mempunyai BMI yang obes dan berisiko tinggi. Sebanyak 3 orang staf mempunyai masalah BMI berlebihan berat badan manakala 9 orang staf mengalami masalah obes. **Kitaran Kedua:** Kitaran kedua menunjukkan sebanyak 7 daripada 12 orang staf berjaya menurunkan BMI selama 6 minggu program dijalankan. Sebanyak 58% staf (n=7) telah berjaya mengurangkan berat badan, 33% staf (n=4) mempunyai penambahan berat badan dan 9% staf (n=1) berat badan adalah statik. **Kesimpulan:** Pelaksanaan audit ini adalah untuk meningkatkan kesedaran semua staf akan kepentingan mempunyai BMI yang normal. Hal ini demikian, secara tak langsung mencerminkan gaya hidup dan tahap kesihatan seseorang individu. Justeru, pengambilan diet yang betul berdasarkan pengiraan kalori dan porsi makanan yang betul serta aktiviti fizikal membantu menyumbang kepada mencapai BMI yang normal.

Awarded 2nd place in Clincal Audit presented at the Pertandingan Clinical Audit 2019 on 21 October 2019 at Hospital Sultanah Bahiyah, Alor Setar, Kedah.

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Dr. Nur' Adilah Bt Ahmad Othman
Dr. Yap Yee Wooi
Dr. Chin Yu Jie
Dr. Nur Nazihah bt Muhammad Hanifah
Dr. Nadiatul Akmal Badrul Hairi

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109. PREVALENCE OF MOLAR INCISOR HYPOMINERALIZATION IN NEGERI SEMBILAN MALAYSIA

Tan BC, Sarimah MM, Laila AJ

Aim: This study aimed to determine the prevalence and clinical characteristics of Molar Incisor Hypomineralization (MIH) among children aged 7 to 9 year olds in Negeri Sembilan (NS), as well as its association with ethnicity and gender. **Material and Methods:** A cross-sectional study had been conducted in eleven national primary schools from seven districts in 2017. Two-stage systematic sampling method was performed. Diagnosis of MIH was based on European Academy of Paediatric Dentistry (EAPD) judgement criteria. A modified charting form by Ghanim et al (2015) was used in our data collection. The consented students were examined by seven calibrated examiners (Kappa-score of 0.88; 91.07% of agreement) via visual oral examination. Data analysis including descriptive statistics, Chi-square test and Spearman's correlation was carried out using SPSS version 20. **Results:** 591 students with mean age of 8.06 ± 0.79 years (53.6% girl, 46.4% boy) participated in this study. The prevalence of MIH was 3.4% where 70% were in mild form and 30% in severe form. No statistically significant different was found when comparing the MIH distribution by race and gender. Within MIH group, the mean of affected permanent first molar (PFM) and affected permanent incisor (PI) were 2.3 and 1.0 respectively. There was a strong, positive correlation between the numbers of MIH affected PFM and PI, which was statistically significant (r_s=0.646, p=0.002). **Conclusions:** Low prevalence of MIH was found in NS and majority were mildly affected. Our study demonstrated an increase in number of MIH affecting PFM increases the chance of MIH affecting PI.

Poster presentation at the Malaysia International Dental Exhibition and Convention (MIDEC) 2018 on 20 - 22 July 2018 at Kuala Lumpur Convention Center (KLCC), Kuala Lumpur.

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110. PROPHYLACTIC ANTIBIOTIC FOR INFECTIVE ENDOCARDITIS (IE) IN CHILDREN: A SURVEY OF CURRENT PRESCRIBING PRACTICES AMONG DENTISTS

Amani A, Yogeswari S, Noorliza I

Aim: Infective endocarditis (IE) causes significant morbidity and mortality. The use of antimicrobial prophylaxis (AP) for the prevention of IE prior to certain dental procedures should be limited to high-risk cardiac patients only. At the point when this survey was conducted, there was no Malaysian guideline in place. This study aimed to look into prescribing practices among dentists, given the various international guidelines that were being referred to prior to the publishing of the Malaysian guidelines. **Methods:** This survey involved 78 dentists who answered 35 closed-ended questions pertaining to demographic information, previous clinical encounters of IE and anaphylaxis reaction, questions regarding the need for AP for different cardiac conditions and dental procedures. The data collected were then analysed using SPSS. **Results:** Among 78 participants, 35% reported to use the AHA 2007 guidelines and about 30% preferred combination of AHA 2007 and NICE 2008. 31% of participants were paediatric dentists, 47% were dental officers working in hospital, and 12% were dental officers working in primary care. 35 % have working experience between 5 to 10 years. Based on the AHA 2007 guidelines, 10% of cardiac conditions and 15% of dental procedures which required prophylaxis were under prescribed. However, 37% of cardiac conditions and 22% of dental procedures which do not require prophylaxis over prescribed. **Conclusions:** This survey has identified under and over prescription of antibiotic prophylaxis. It is hoped that with the current Clinical Practice Guidelines (CPG) 2017 for The Prevention, Diagnosis and Management of IE, the prescription for prevention of IE will be more consistent among dental practitioners.

Keywords: Infective endocarditis, prophylactic antibiotic, antibiotic prophylaxis

Oral presentation at the Malaysia International Dental Exhibition and Convention (MIDEC) Conference 2017 on 28 - 30 July 2017 at Kuala Lumpur Convention Centre (KLCC), Kuala Lumpur.

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111. RADIOGRAPHIC FOLLOW-UP ON NON-RADICAL APPROACH IN MANAGING LARGE ODONTOGENIC CYSTS IN CHILDREN: A REPORT OF 2 CASES

Goh DS, Leong KJ, Azalina O, Nurnabiha J, Eunice LC

Introduction: The treatment of odontogenic cysts are usually determined by the size of the lesion. Management varies, but predominantly includes enucleation, decompression, marsupialization or bony resection. Invasive surgical approaches may result in significant morbidity such as pathological fractures or disfigurement of the mandibular-maxillary complex, hence adversely affecting development and growth in children. This poster presentation aims to present 2 case series of large odontogenic cysts, successfully managed via minimally invasive methods. **Case Report:** 2 paediatric patients with large odontogenic cyst will be presented. Case 1, 11 years old boy, with a large painless swelling over the left mandible, diagnosed as Odontogenic Keratocyst (OKC), was managed with marsupialisation technique. Case 2, 13 years old boy, with a large painless swelling over the left side of the face, diagnosed as Radicular Cyst, was managed with root canal treatment on the causative tooth. Follow-up and periodic radiographs were taken. **Comments:** The usual practice for the management of OKC is usually bony resection as recurrence is high. A case 1 was a young patient, conservative approach was chosen to allow the pathology to gradually resolve. As for case 2, a simple root canal treatment on the causative tooth managed to bring complete resolution of large radicular cyst that would have normally been managed with enucleation and apicectomy at the same time. Although recurrence was noted after about 3-4 years, the pathology was now much smaller and easily treated surgically with reduced morbidity. Drawbacks of such minimally invasive techniques often include requiring a second surgical intervention, however it has allowed bony healing of the jaw bones in a young child and avoided significant tissue loss and facial deformity. Minimally invasive approach in managing large odontogenic cyst in young children must be considered as the first line of approach.

Keywords: Odontogenic cyst, paediatric

Awarded 3rd Prize (Case Series/Case Report Category) for Poster presentation at the 7th Sabah Research Day 2019 on 4-5 September 2019 at Queen Elizabeth Hospital, Kota Kinabalu, Sabah.

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Dr. Azalina Othman
Dr. Nurnabiha Jabid
Dr. Eunice Li-Ern Chong
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112. RARE PRESENTATIONS OF HYPODONTIA – CASE REPORT

Wan Siti Norzuraihan WM, Bavani SN

Introduction: Congenital missing teeth (CMT) describe development failure of teeth. It is one of most prevalent craniofacial malformation in human. The occurrence of CMT, excluding third molar ranges between 3.5% to 6.5% in secondary dentition. The most commonly missing teeth were mandibular second premolars, followed by maxillary lateral incisors, and maxillary first premolars. The least common missing teeth were mandibular canine, first molar and maxillary incisor. CMT can be divided into three types, which are hypodontia, oligodontia and anandontia. **Case presentation:** A compilation of 5 rare cases which involve congenitally missing permanent incisor and canine teeth seen in clinic setting. All cases presented have no family history of missing teeth and no history of trauma to the teeth. General examination of all patients did not suggest any syndromic features. Imaging examination done confirmed the absence of the teeth. **Discussion:** Any abnormality must be taken into account and confirm with proper investigations. Timely multidisciplinary management is needed to restore oral condition of the patient in order to provide good aesthetic and function.

Keywords: Hypodontia, multidisciplinary management

Poster presentation at the Malaysia International Dental Exhibition and Convention (MIDEC) Conference 2019 on 11 - 14 July 2019 at Kuala Lumpur Convention Centre (KLCC), Kuala Lumpur.

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113. THE SAFE USE OF CONE BEAM COMPUTERISED TOMOGRAPHY (CBCT) IN CHILDREN AND ADOLESCENTS

Swee TK, Bahruddin S

Background: CBCT is an advance dental imaging technology with effective radiation dose varies enormously from 19µSv to 1073µSv. The evidence that support the use of CBCT is still weak and the justification mainly relies on the individual dentist. There is a need to investigate the potential diagnostic values to prevent unnecessarily abused of this modality. **Objectives:** To investigate the dental problems that frequently require CBCT, and to evaluate if the procedures to minimize radiation exposure had been practised. **Methodology:** Retrospective analysis of a random sample of patients aged below 16, who had CBCT examination from 1st January 2012 to 31st December 2015 in HTAR. Clinical indications, region of interest, quality of the images, and completeness of the documentation were analysed using Microsoft Excel 2010. **Results:** A total of 143 records retrieved. The mean age of the sample was 12.2 years (SD 2.8 years). 65% of the CBCTs were requested by dental specialists. 76% of the sample was diagnosed with unerupted teeth, supernumerary teeth, or cleft lip and palate. Unfortunately, the diagnostic values were not clearly documented in most of the records. Only 55% of the images were grade 1 quality and there was a positive relationship between the quality of OPG and CBCT (r = 0.55). **Conclusion:** Few unsafe practices during the use of CBCT were found. A standard operating procedure from requesting to reporting CBCT examination is needed to ensure patient safety during radiation exposure.

Keywords: cone beam computerised tomography, children, adolescent

Oral presentation at the Malaysian Association of Paediatric Dentistry (MAPD) Biennial Scientific Conference & Trade Exhibition 2017 at Kuala Terengganu, Terengganu.

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114. TOO LITTLE, TOO LATE…

Lim XY, Saw ZH, Bavani SN

Introduction: Rickets is thought to be a rare occurrence in Malaysia, where resources are adequate and easily accessible and there are abundant of sunlight all year long. **Case presentation:** A 3-year old Malay girl referred to us for dental management as she was diagnosed with nutritional deficiency rickets. She appears to be of a shorter stature and has bowing deformity on both legs. Laboratory investigations revealed low serum 25-hydrxyvitamin-D, serum calcium levels, high levels of serum parathyroid hormone and serum alkaline phosphatase, which are classical features of vitamin-D deficiency rickets. Intraorally, there are yellowish-brown pitting over the labial surfaces on her upper teeth. Hypomineralisation is also present at the cervical region of molars. There is no evidence of tooth wear; all teeth are sound. Her general condition improved remarkably after treatment with oral vitamin D over a period of 1 year. **Discussion:** Nutritional rickets caused by deficiency of Vitamin D, calcium or phosphate may cause hard tissue malformation. In this case, the long bone and dental developmental defects were present. Long term follow-up, monitoring caries risk status in this child as progression of caries is expected to be faster in hypomineralised teeth. Aggressive preventive strategies should be applied to arrest existing carious process and to prevent development of new caries.

Keywords: Rickets, hard tissue malformation, teeth hypomineralisation

Oral presentation at the Conference Research in Paediatric Dentistry (CRiPD) 2019 on 7 – 9 August 2019 at Balai Ungku Aziz, University of Malaya, Kuala Lumpur.

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115. TREATMENT MODALITIES FOR PAEDIATRIC PATIENTS WITH SELF-INFLICTING PERIORAL INJURIES

Habibah J, Jama'iah MS, Ganasalingam S, Raja Zarina RS, Suriani S, Ng YM, Ong YY, Radhadevi K

Introduction: Self-inflicting injuries are either intentional or non-intentional. The intentional self-harm occurs in individuals with psychological/emotional disturbances who seek help or attention. Unintentional self-harm appears during stressful situations related to chronic deleterious habits, such as bruxism and lip biting. These habits begin from an initial accidental injury that continues to worsen, preventing natural healing of the lesion. These children may present with different patterns of injury to their lips, cheek or tongue depending on the causative behaviour or habit. Persistent tissue damage can lead to pain, infection, scarring and disfigurement. **Case Report/Description:** We are presenting cases that were referred to our department for management of non-intentional self-inflicting injuries to oral tissue in paediatric patients. Intervention was customized to the patient's individual need. Methods for intervention varies from interim measures such as constructing removable dental appliances to long-termmeasures including extraction of the causative tooth. Satisfactory outcome was achieved in preventing further tissue damage. **Discussion/Conclusion:** Scientific evidence from the literature in managing self-inflicting injuries usually are in the form of reports of case series. Various types of appliances may serve as a habit breaker for chronic injurious habits whilst allowing healing to take place. Factors such as aetiology and the mechanism of the injuries should be identified according to individual cases. The management on such patients is always challenging and requires a multidisciplinary approach.

Keywords: Perioral injuries, Self-inflicting, Dental appliances

Poster presentation at the 4th HKL Research Day & Clinical Trials Day 2019 Trade Exhibition on 25th August 2019 at Women and Children Hospital Kuala Lumpur.

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116. UNILATERAL CENTRAL GIANT CELL GRANULOMA IN NOONAN SYNDROME

Amani A, Navasheilla RR,Mimi Syazleen AR

Introduction: Central Giant Cell Granuloma (CGCG) is a benign, aggressive neoplasm composed of multinucleated giant cells that almost exclusively occurs in the jaws though extragnathic incidence is rare. It is associated with conditions like neurofibromatosis and Noonan syndrome (NS). **Case Report:** An 11-year-old child with Noonan Syndrome was referred for persistent swelling of left cheek for 3 years with recent nasal bleed. He also has Atrial Septal Defect (ASD), moderate valvular and supravalvular pulmonary stenosis and undergoing heart surgery. Clinically, he presented with a diffuse swelling involving left nasomaxillary region causing facial asymmetry. Cardinal features of NS including broad based webbed neck, posteriorly angulated ears, mild ptosis, and ocular hypertelorism was evident. Intraorally, he has a class III malocclusion with narrow maxilla and cross bite. Computed tomography revealed an expansile osteolytic lesions with sclerotic margin arising from the anterior wall of maxillary sinus. Surgical enucleation accompanied with chemical curettage and peripheral ostectomy was carried out. Upper left permanent canine had to be extracted as the lesion was attached to it. Histopathological examination revealed the diagnosis of CGCG. **Discussion:** Giant cell lesions are likely to be a part of the spectrum of findings in Noonan's syndrome and not a distinct entity. There are several treatment choices for giant cell lesions, but no specific one is reported for those lesions in NS patients. In the present case, we have opted to surgical enucleation, since the lesion was growing and symptomatic. The child is currently under periodic follow up and no evidence of recurrence is seen after 10 months.

Keywords: Central giant cell granuloma, noonan syndrome

Oral presentation at the Scientific Convention and Trade Exhibition (SCATE) Conference 2018 on 26 - 28 January 2018 at Putra World Trade Centre (PWTC), Kuala Lumpur.

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RESEARCH
IN
ORAL PATHOLOGY & ORAL MEDICINE

117. A CASE REPORT OF METASTASIZING AMELOBLASTOMA IN LYMPH NODE

Zarina AK, Sumairi I, Farveen MAB, Teh JY

Introduction: Ameloblastoma is a benign intraosseous odontogenic tumor characterized by expansion and a tendency for local recurrence. Rarely, ameloblastoma may metastasize in lung, followed by lymph nodes and bone. We report a case of metastasizing ameloblastoma in cervical lymph node, 6 years after the right hemimandibulectomy in a 48 year old man. **Case Presentation:** The patient presented with a painless swelling over the right mandible for 2 years in duration. He was then undergone right hemimandibulectomy with uneventful recovery and regular follow-up. After 6 years, he presented with a painless, slow growing swelling over right neck and undergone Fine Needle Aspiration Cytology (FNAC) of right cervical lymph node (level III). He was then again undergone wide surgical excision and recover uneventful. **Investigations:** The radiographic findings show extensive, corticated multilocular (soap-bubble) radiolucency over right mandible with root resorption of tooth 47 and 48. The histopathological and FNAC studies demonstrated an identical benign ameloblastoma features. **Differential Diagnosis:** Borderline between histopathological features of ameloblastic carcinoma and ameloblastoma is difficult to define. **Management:** Surgery is the most acceptable modality of treatment. Recent studies revealed that human ameloblastoma are potentially responsive to molecular targeted therapies, like those that have already been in clinical use against BRAF V600E mutation. **Outcome:** Up to date, patient still on a regular follow-up with no sign of recurrence or metastases. **Discussion:** Recent updates of genetic studies concluded that despite of its local aggressiveness and propensity to recur, ameloblastoma remained benign in nature. Metastasizing ameloblastoma is defined by its clinical behavior (retrospectively) rather than its histology features which appeared identical in both the primary and metastases lesions. **Conclusion/Learning Points:** Therefore, a regular and long-term follow-up is warrant in every ameloblastoma cases since there is no specific feature predicting metastases and may occur after a long latent period.

Keywords: Ameloblastoma, Odontogenic Tumor, Metastasizing Ameloblastoma, Lymph Node, Ameloblastic Carcinoma

Oral Presentation at the 2019 Annual Scientific Meeting of College of Pathologists, Academy of Medicine Malaysia (CPath 2019) on 27-28 June 2019 at Riverside Majestic Hotel, Kuching, Sarawak

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118. A CLINICOPATHOLOGIC STUDY OF 173 ODONTOGENIC TUMOURS IN NORTHERN PENINSULAR MALAYSIA (2007-2014)

Sumairi I, Saw CL

Introduction: The objectives of this study are to analyze, compare and contrast the demographic, clinical and pathological data of odontogenic tumours seen at a regional oral pathology centre in the Northern part of Peninsular Malaysia with other international data as an aid to clinicians in diagnosing odontogenic tumours. **Materials and Methods:** This was a descriptive, retrospective study of odontogenic tumours diagnosed from January 2007 to December 2014 at this centre. The odontogenic tumours were classified using the 2005 World Health Organization classification system. **Results:** Among 2,733 biopsy specimens, 173 cases were diagnosed as odontogenic tumours (6.3%), of which 171 (98.8%) are benign and 2 (1.2%) are malignant. The most frequently encountered tumour was ameloblastoma (n=96, 55.5%), followed by keratocystic odontogenic tumour (KCOT) (n=38, 22.0%) and odontomas (n=16, 9.2%). Malignant tumours accounted for 1.2% of the tumours. Most ameloblastomas and KCOTs affected the mandible preferentially. The mean age was 33.5 (± 17.8) years and 64.7% of patients were in the age group of 10 to 39. Odontogenic tumours were slightly more common in males, with a male to female ratio of 1.4:1. **Conclusion:** The findings of this study are similar to the other studies in Asia in which the most common tumour encountered is the ameloblastoma, followed by KCOT. The most common signs and symptoms are pain and swelling, while paraesthesia and root resorption are less frequently reported. Such clinical and radiographic features should alert the clinician of a possible odontogenic tumour and though rare, malignant tumours should also be included in the differential diagnoses.

Keywords: *Odontogenic tumour, oral pathology, ameloblastoma*

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119. A RETROSPECTIVE STUDY OF NEONATAL AND INFANT ORAL LESIONS DIAGNOSED THROUGHT MICROSCOPIC EXAMINATION IN STOMATOLOGY UNIT, INSTITUTE FOR MEDICAL RESEARCH IN YEAR 2000-2017

Nadia Najwa S, Lau SH, Ajura AJ

Introduction: A large number of retrospective studies on oral and maxillofacial lesions in paediatric population have been documented including the Asian countries. However, there is still paucity of oral lesion status in the newborn particularly in Malaysia. This study mainly investigates Malaysia's neonate and infant oral lesions diagnosed by the main Oral Pathology Diagnostic and Referral Centre in Malaysia, Stomatology Unit. **Material and Method:** Biopsy records from year 2000-2017 of patient aged 2 years old and below were extracted from Oral Pathology Information System (OPIS) and confirmed through patient's biopsy request form archived in Stomatology Unit. Oral lesions were divided into four main categories; inflammatory/reactive, cystic/pseudocystic, tumour/tumour-like lesion and miscellaneous lesion based on two age groups; neonate (0-30 days old) and infant (>1 month to 2 years old). **Results:** A total number of 115 samples from patient of aged 2 years-old and below were gathered from out a total number of 29,940 biopsy specimens received. Only 10 patients were neonate with the youngest aged 2 days-old. The most common lesion was from Inflammatory/Reactive category (Mucous Extravasation Cyst; *n*=25, Fibroepithelial Hyperplasia; *n*=6 and Fibrous Epulis; *n*=5) followed by Tumour/Tumour-like category (Langerhan's Cell Histiocytosis; *n*=6 and Congenital Epulis; *n*=5) and Cystic/pseudocystic-like lesion (Dermoid Cyst was the most frequent; *n*=3). Maxilla was found to be the most common site for both lesions mentioned in tumour/tumour-like lesion. It was worth noting that 12 patients were diagnosed with malignant lesions. **Conclusion:** The vast majority of oral lesions found in new born was inflammatory/reactive or benign, with a substantial proportion (10.43%) were malignant lesions. The data gathered showed that oral lesions can be seen/occurs at a very young age. Thus, this will assisst the surgeon and pathologist in investigating and patients diagnosing the oral lesions.

Keywords: Oral Lesion, Neonate, Infant

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120. ADENOSQUAMOUS CARCINOMA OF THE TONGUE: REPORT OF A RARE CASE AND REVIEW OF THE LITERATURE

Fairuz AR, Lau SH

Introduction: Adenosquamous carcinoma (ASC) is a malignant tumour that shows biphasic morphology of squamous and glandular differentiation. ASC is a rare and aggressive variant of squamous cell carcinoma (SCC). Due to its glandulotubular features, it may pose a diagnostic challenge to pathologists as it may exhibits histological mimicry to salivary gland tumour specifically oral mucoepidermoid carcinoma. ASC is also rarely described in head and neck and it more commonly reported in other body sites such as lung, uterine cervix and pancreas. **Case Report:** We report a case of a 57-year-old Malay woman with a non-healing ulcer at right lateral border of tongue, with histological findings of well differentiated SCC exhibiting rare adenocarcinomatous component. **Conclusion:** Due to its glandulotubular features, it may pose a diagnostic challenge to pathologists as it may exhibit histological mimicry to salivary gland tumour specifically oral mucoepidermoid carcinoma.

Keywords: Adenosquamous carcinoma of the head and neck, squamous cell carcinoma with glandular differentiation, mucoepidermoid carcinoma.

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121. AN ANALYSIS OF SALIVARY GLAND TUMOUR: A 10-YEAR, SINGLE INSTITUTION REVIEW IN MALAYSIA

Nurmawarnis MH, Ajura AJ, Lau SH

Introduction: Salivary gland tumour constitutes a group of disease with variants in histopathologic and clinical behaviour hence the demographic and clinicopathological features of this tumour have been reported differently with lack of published reports among Malaysian. Therefore, the aim of the present study is to describe the demographic and clinicopathologic characteristics of salivary gland tumour in Stomatology Unit, Institute for Medical Research, the national referral centre for oral pathology cases in Malaysia in the hope of gaining better understanding about the tumour. **Materials and methods:** A cohort, retrospective study was carried out on the period spanning from January 2005 to December 2015 (10 years) in Oral Pathology Service, Stomatology Unit, Institute for Medical Research, Kuala Lumpur. Information on demographics, clinical and histopathology profile of salivary gland tumour cases were retrieved from Oral Pathology Information System (OPIS) and laboratory request form. **Results and Discussion:** Of 231 cases recruited, there were 119 (52.8%) benign and 112 (47.2%) malignant salivary gland tumours, which found to be higher in females (n=121, 52.3%) than males (n=110, 47.6%). The most common benign and malignant tumours were pleomorphic adenoma (92.6%) and mucoepidermoid carcinoma (26.8%). Benign salivary gland tumour occurred mainly between 5th to 6th decade of life with female preponderance whereas the malignant counterpart were diagnosed between 3rd to 4th decade of life, predominantly in male patients. Majority of the cases involving intraoral minor salivary gland with palate (37.2%) as the commonest site of occurrence followed by buccal mucosa (11.7%). Clinically, the patients' complaint was essentially slow growing painless swelling with duration of more than 1 year (44.6%). **Conclusions:** The data demonstrated about an equal incidence of benign and malignant salivary gland tumours, contrary from most of the studied literatures. However, other epidemiologic and clinicopathologic profile corroborated most of other published studies.

Keywords: salivary gland tumour, Malaysia

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122. BURNING MOUTH SYNDROME (BMS) - A CROSS SECTIONAL STUDY OF PATIENTS ATTENDING THE ORAL MEDICINE CLINIC (OMC), HOSPITAL KUALA LUMPUR (HKL), MALAYSIA

Pappathy V, Nor Nazaliza B, Ajura AJ, Lau SH

Introduction: Burning Mouth Syndrome (BMS) is a chronic pain condition defined as oral burning in the tongue or other oral mucous membrane, where no known medical or dental conditions has been excluded and has been present for at least four to six months. Objectives: This study aimed to determine the proportions and demographic factors related to BMS and explore its clinical characteristics and options for patients' management. **Methods:** This was a retrospective study involving 39 patients who were diagnosed with BMS between 2014 to 2018 (who met the inclusion criteria) at the Oral Medicine Clinic (OMC), Hospital Kuala Lumpur. Patients' clinical records over the period of 2014 to 2018 were reviewed. Relevant clinico-demographic data were extracted and evaluated. **Results:** Majority BMS cases seen in OMC, HKL were the elderly with a mean age of 61. Among these, being female (64%, n=25) and with post menopausal symptoms are associated with BMS. Of these aged below 40 years-old, were males than females were affected with BMS. The common area affected were tongue (approximately 56 %) followed by gingivae and buccal mucosa with the complaint ranging from burning sensation to feeling of discomfort. Reassurance combined with the use of moisturising agents has been noted to provide some form of symptomatic relief. **Conclusion:** BMS is more prevalent in elderly women with post menopausal symptoms.

Keywords: Burning Mouth Syndrome, Pain, Oral Dysthesia

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123. CLINICOPATHOLOGICAL CHARACTERISTICS OF BENIGN FIBRO-OSSEOUS LESIONS IN HOSPITAL QUEEN ELIZABETH (HOE), SABAH: A 15-YEARS EXPERIENCE

Noor Mayah J, Fairuz AR, Salina D

Introduction: Benign fibro-osseous lesion (BFOL) of craniofacial bone is a group of lesion with overlapping microscopic features. Diagnosis requires close correlation of demographic, clinical, intraoperative and radiographic findings. The current WHO Classification has recognised ossifying fibroma (OF) as a neoplasm with fibrous dysplasia (FD) and cemento-osseous dysplasia (COD) being dysplastic lesions. **Aim/Objectives:** To describe the demographic and clinico-pathological characteristics of BFOLs in Sabah. **Materials and Methods:** A retrospective study of the cases diagnosed in Department of Oral Pathology and Oral Medicine, Hospital Queen Elizabeth, Sabah from 2004 to 2019 were done. Data on demographics, clinical, radiological and histopathological findings were retrieved from Oral Pathology Information System (OPIS), Laboratory Information System (LIS) and re-evaluation of histology slides. **Results:** A total of 47 BFOLs were diagnosed. They comprised 17 OFs (9 male, 8 female; 10 maxilla, 7 mandible; age range: 11-77 years old), 12 FDs (7 male, 5 female; 8 maxilla, 4 mandible; age range: 10-53 years old) and 11 CODs (2 male, 9 female; 2 maxilla, 9 mandible; age range: 24-73 years old). 7 other cases were classified under broad term BFOL. Bony expansion is seen in OFs (16/17) and FDs (12/12) with CODs only in (4/11). The radiographic findings correlate with mineralized tissue present. **Conclusion:** The commonest lesions reported are OFs. Both OFs and FDs showed almost equal gender distribution with propensity for maxillary bone whereas CODs showed striking female predominance favouring posterior mandible.

Keywords: Fibro-osseous lesion, fibrous dysplasia, ossifying fibroma, cemento-osseous dysplasia

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124. COMPARING PATIENT'S CHARACTERISTICS OF KIMURA'S DISEASE AND ANGIOLYMPHOID HYPERPLASIA WITH EOSINOPHILIA DIAGNOSED IN STOMATOLOGY UNIT, INSTITUTE FOR MEDICAL RESEARCH

Salina D, Lau SH, Ajura AJ

Introduction: Kimura's disease is an uncommon chronic inflammatory disease of unknown case while angiolymphoid hyperplasia with eosinophilia (ALHE) is a rare benign vascular tumour. Both of these tumours presented as swellings, nodules or papules and usually found in the head neck region. Kimura's disease share similar histological features with ALHE with the former having also peripheral eosinophilia, lymphadenopathy and renal involvement. **Methods:** A retrospective analysis of ALHE and Kimura's disease cases diagnosed in Stomatology Unit, Institute for Medical Research (IMR) was carried out. Histopathological reports were retrieved from archives of cases from year 1967 to 2019. Comparison of demographic, clinical and histological features between these two entities were done. **Results:** A total of 17 patients diagnosed with Kimura's disease (9 male, 8 female; age range: 19- 67 years old) and 10 with ALHE (4 male, 6 female; age range: 16-57 years old). Patient's main complaint for both lesions was painless swelling. Duration of both lesion ranges from few weeks up to 10 years with only 1 recurrent case of Kimura's disease noted within 3 years. ALHE mainly affect upper lip in our series while Kimura's mainly involved buccal mucosa and deeper structures such as salivary gland. **Conclusion:** Despite these two diseases being considered as benign self-limiting conditions, due to the rarity of its occurrence, clinicians are not well aware of these entities as well as on the best possible management.

Keywords: Kimura's disease, demographic

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125. CONCURRENT HPV-RELATED OROPHARYNGEAL CARCINOMA IN FOUR COUPLES

Sathasivam HP, Bhatia R, Bradley P, Robson A, Paleri V, Cocks H, Oozeer N, Milne D, Sloan P, Robinson M

Objectives: Typically, HPV-related cancers are sexually transmitted, however, the natural history of HPV-related oropharyngeal squamous cell carcinoma (OPSCC) is unclear. HPV16 transmission has been reported previously between five couples with OPSCC. We report the clinico-pathological features of a further four couples with HPV-related OPSCC and compare them with the published cases. **Methods:** We identified four couples in long-term heterosexual relationships that all had HPV-related OPSCC. The couples were treated at three UK hospitals and presented between 2009 and 2015. HPV tests included p16 immunohistochemistry, high-risk HPV DNA in-situ hybridisation and Roche Cobas HPV test. DNA sequencing was used to determine the HPV variant. **Results:** The four couples represented < 2% of patients with HPV-related OPSCC at the three contributing hospitals (8 of 457 consecutive patients). The couples' tumours all contained HPV16. The mean age was 63 years old (range 52-72 years). The interval between the index cancer and the partner's cancer was 16, 24, 26 and 64 months respectively. The majority of patients had Stage I disease (UICC TNM8). Six of eight patients are disease free, one patient is alive with disease and there was one death from loco-regional recurrence. **Conclusion:** This report highlights the occurrence of HPV-related OPSCC in heterosexual couples and raises the possibility of transmission of HPV16. Despite increasing prevalence of HPV-related OPSCC and increased awareness of the disease, there is a paucity of couples with the disease, suggesting either under-reporting or that the development of OPSCC following HPV transmission between couples is a rare event.

Keywords: HPV, oropharyngeal carcinoma

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126. DEMOGRAPHIC FEATURES OF PATIENTS WITH ODONTOGENIC TUMOURS SEEN IN JOHOR

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Aim: To investigate the demographic features of patients with odontogenic tumours diagnosed at the Johor state Oral Pathology Unit. This study hopes to address the lack of local data with regard to odontogenic tumours. **Material and Methods:** This was a descriptive, cross-sectional study of odontogenic tumours diagnosed from January 2012 to December 2014 at the Oral Pathology & Oral Medicine Unit of Sultan Ismail Hospital Johor. The odontogenic tumours were classified using both the 2005 & 2017 World Health Organization classification systems. Data were analysed using IBM SPSS Statistics for Windows, version 22. **Results:** Out of 1,351 biopsies, only 54 cases were odontogenic tumours (4.0%). Mean age at diagnosis was 32.7 (± 14.7) years; ranging from 10 to 60 years of age. Odontogenic tumours were seen more frequently in males (63.0%). The ethnic distribution of patients appeared to reflect the distribution of the Malaysian opulation with the majority of patients being Malays (66.7%), followed by Chinese (24.1%), Indians (7.4%) and other minorities (1.9%). The most frequently diagnosed tumour was the ameloblastoma (n=28; 51.9%). There were only two cases (3.7%) of malignant odontogenic tumours. Only 5.6% of cases were diagnosed as odontomas. **Conclusions:** Findings from this study are similar to other regional studies, whereby the most frequently encountered odontogenic tumour in the Asian setting is the ameloblastoma. This differs from studies arising from the Americas, where odontomas predominate. However, the frequency of odontomas may be underestimated as odontomas are frequently diagnosed on routine radiographic images and not biopsied.

Keywords: odontogenic tumour, demographic feature

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127. GLOMUS TUMOR OF THE LOWER LIP: A CASE REPORT

Zarina AK, Farveen MAB, Geetha SS, Norita AR, Sumairi I

Introduction: Glomus tumours are rare, mesenchymal neoplasms (<2%) that majority occur in the distal extremities i.e. subungual regions as most glomus bodies found there. These tumors are rarely seen in the oral cavity, with scarce reported cases available. Here, we report a case of glomus tumor of the lower lip in a 15 year old girl. **Case Presentation:** The patient presented with a painless pedunculated swelling over left lower lip and was completely excised. **Investigations** (if relevant): Histopathological features of the lesion was found to be numerous hemangioma-like vessels, surrounded by cohesive sheets of round to spindle-shaped cells with well–defined basal lamina. Immunohistochemistry examination of the neoplastic cells was positive for smooth muscle actin, with CD31 and CD34 stains highlighting the blood vessels. **Differential Diagnosis** (if relevant): Clinical differential diagnoses of mucocele, hemangioma or salivary gland neoplasm may be considered. **Management:** Excision is the mainstay management for this lesion with no established recurrence rate in the oral cavity region. **Outcome:** On regular review, the biopsy site appeared healed with no sign of recurrence. **Discussion:** Although pain is the most characteristic symptoms at the other sites, majority of the lesions in the oral cavity are painless. Among the etiology for this lesions are inactivating mutations in the glomulin gene in chromosome arm 1p, with reported cases associated with neurofibromatosis type 1 (NF1) and autosomal dominant inheritance in multiple familial glomus tumours. **Conclusion/Learning Points:** Since these tumors are rarely encountered in the oral cavity, high index of suspicion and awareness among the clinician are crucial for the diagnosis. Therefore, it is warrant for consideration in differential diagnoses of a small, painless swelling in the oral cavity.

Keywords: Glomus Tumor, Lip, Mesenchymal Neoplasm, Oral Cavity, Immunohistochemistry

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128. IMMUNOHISTOCHEMICAL ANALYSIS OF A RARE CASE OF MELANOTIC NEUROECTODERMAL TUMOUR OF INFANCY

Fairuz AR, Ajura AJ, Nor Nazaliza B, Lau SH

Introduction: Melanotic neuroectodermal tumour of infancy (MNTI) is a rare benign neoplasm that usually occurs during the first year of life. MNTI is a locally aggressive tumour with a high recurrence rate. The tumour is generally accepted to be of neural crest origin. MNTI shows striking trend for the maxilla (68-80%) and less occurrence sites reported such as skull, testis, mandible and brain. **Case Report:** We report a case of MNTI in a 3-month-old Malay infant presented with a swelling at the upper anterior ridge causing upper sulcus obliterate and labial fullness on upper lip. MRI and ultrasound findings were suggestive of a well-defined soft tissue tumour. A complete surgical excision was performed by an intraoral approach. **Result:** Histological findings of a well circumscribed lesion with characteristic biphasic population of large pigmented epithelioid cells and small round blue cells was observed. The immunohistochemical (IHC) findings showed both small and epithelioid cells were diffusely positive for Vimentin, Synaptophysin and NSE. CK AE1/AE3 and HMB45 immunostaining show positivity to the epithelioid cells while CD56 and GFAP highlighted the small round blue cells population. **Discussion:** IHC studies are rarely applied on the MNTI due to its very characteristic features, classical clinical presentation and very distinctive histopathological features of a dual population of small neuroblastic cells and larger melanin-containing epithelial cells. The clinical differential diagnosis of a rapidly growing gum swelling in an infant includes congenital epulis, teratoma, neuroblastoma, Ewing's sarcoma, rhabdomyosarcoma, melanoma, congenital eruption cyst, Burkitt's lymphoma, Langerhans cell histiocytosis and hemangioma, therefore IHC markers can be very helpful in differentiating MNTI from other round blue cell tumours.

Keywords: Melanotic neuroectodermal tumour of infancy, benign infantile tumour, pigmented lesion.

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129. ORAL HEALTH-RELATED QUALITY OF LIFE OF PATIENTS WITH AND WITHOUT TEMPOROMANDIBULAR DISORDERS IN HOSPITAL RAJA PERMAISURI BAINUN, IPOH, PERAK

Zafirah Hani M, Khamisah AK, Yuen KM

Objective: The aim of this cross-sectional study was to compare the oral health-related quality of life (OHRQoL) between individuals with and without temporomandibular disorders (TMD) seen in the Oral Medicine and Oral Surgery clinic in Hospital Raja Permaisuri Bainun, Ipoh, Perak. The specific objective is to assess the seven domains of negative impact on OHRQoL in TMD patients and its comparison with those without TMD. **Materials and methods:** A total of 58 adult subjects were recruited in the study by convenience sampling, consisting of 29 subjects each in the group of those with and without TMD. The subjects without TMD consist of patients reviewed in the clinic with other diseases. The data was collected using the Malaysian short version of the Oral Health Impact Profile S-OHIP(M) questionnaire or its translated English version. The level of OHRQoL was indicated by the overall S-OHIP(M) score median and IQR using Mann-Whitney test. Comparison of the total score and each individual domains were made between the two groups where a higher score indicates a poorer OHRQoL. **Results:** The median age of TMD patients was 45.0 (15.58). Most of them were females (82.8%) and Malays (48.3%). Patients with TMD significantly had poor OHRQoL scores as compared to those without TMD, with a median score of 21.0 (IQR=15.00) in TMD patients and a median score of 16.0 (IQR=9.00). The domains which reported significant difference were functional limitation and psychological disability with a median score of 4.0 (IQR=3.00) and 3.0 (IQR=5.00) for the respective domains in those with TMD compared to a median score of 2.00 (IQR=3.00) and 1.0 (IQR=3.00) in those without TMD. **Conclusion:** TMD has an overall negative impact on OHRQoL particularly in relation to functional limitation and psychological disability.

Keywords: oral health-related quality of life, temporomandibular disorder

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130. ORAL MANIFESTATION OF CONCURRENT IRON AND VITAMIN B12 DEFICIENCY ANEMIA: A CASE REPORT

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Introduction: : Anemia is a worldwide public health burden affecting all age groups. Iron deficiency is the most common cause of anemia, characterized by presence of microcytic and hypochromic red blood cells. Vitamin B12 deficiency usually results in macrocytic anemia. Anemia can lead to clinically significant oral manifestations including glossodynia, atrophic glossitis, recurrent oral ulcers, angular cheilitis, opportunistic infection and delayed wound healing. **Case report:** Herein we describe a case of 78 years old lady who complaint of burning sensation and redness of tongue for 8 months. Initially she was referred from primary dental clinic to Oral Medicine clinic for further assessment to rule out burning mouth syndrome. Oral examination shown pale oral mucosa and depapillation of tongue, with a few erythematous patches on dorsum of tongue and buccal mucosa. Blood investigations demonstrated low level of hemoglobin, mean corpuscular volume, mean corpuscular hemoglobin, as well as low iron and vitamin B12 level. A diagnosis of atrophic glossitis secondary to iron and vitamin B12 deficiency was made based on the clinical and laboratory findings. She was then referred to Internal Medicine Department for further management. Treatment comprised of oral iron supplement and intramuscular injections of cyanocobalamin 1mg daily for one week, then weekly for one month, and continue every 3 monthly. Her symptom subsided during the course of treatment. **Conclusion:** Dental practitioner played a crucial role in detection of undiagnosed anemia and management of oral lesions associated with anemia. Recognition of the clinical sign and symptoms warrant for further investigation to confirm the diagnosis, and the oral lesions are anticipated to resolve once the underlying anemia is treated.

Keywords: iron, B12 deficiency

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131. PREDICTIVE FACTORS FOR OSTEORADIONECROSIS OF THE JAWS: A RETROSPECTIVE STUDY

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Background: Osteoradionecrosis of the jaw (ORNJ) is a well-recognized complication of radiotherapy. The purpose of this study was to assess predictive factors for the development of ORNJ. **Methods:** A retrospective study of 325 patients with head and neck squamous cell carcinoma (HNSCC) treated at one institution between January 1, 1999, and December 31, 2008, was conducted. Outcome measure was the presence/absence of ORNJ. Time to event was recorded and Cox Proportional Hazard regression analysis was used to determine statistically significant predictive factors. **Results:** Fifty-nine patients had ORNJ. Statistical analysis using Cox regression analysis identified several statistically significant variables: dentoalveolar surgery; peri-resective surgery of the jaw; continued tobacco usage after radiotherapy, diabetes mellitus type 2 (DM2); and total radiation dose. **Conclusion:** Patients at greater risk of developing ORNJ can be identified and measures can be instituted to reduce its incidence and expedite management when it does occur.

Keywords: osteoradionecrosis of jaws

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132. SYNCHRONOUS OCCURENCE OF ACINIC CELL CARCINOMA OF SOFT PALATE AND SQUAMOUS CELL CARCINOMA OF LUNG: A CASE REPORT

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Introduction: Acinic cell carcinoma (AcCC) is a low-grade malignant salivary neoplasm and only constitute approximately 6% to 8% of all salivary gland neoplasms, and 17% of primary salivary gland malignancies. Most of AcCCs occur in the parotid gland and less than 10% occur in the minor salivary glands. Although its low grade histology, AcCC has a significant tendency to metastasis and may have an aggressive transformation. **Case report:** We reported the first case of AcCC in our facility of a 74 years old man who presented to Oral Maxillofacial & Surgery Clinic with a slowly growing pedunculated mass on the left soft palate. Medically, the patient has cardiovascular disease and has been undergone bypass surgery 5 years ago. He was a chronic smoker. A biopsy of the soft palate lesion was done which showed an infiltrative tumour of large polygonal cells with dark, bland, round, eccentric nuclei and having PAS-D positive basophilic granules within the cytoplasm. In some areas, predominant clear cell changes are observed. A diagnosis of AcCC is made based on the characteristic histologic features along with immunohistochemical (IHC) findings of positive for CK7 and negative for P63, S100 and GFAP. The patient subsequently went for a wide excision of the tumour. Similar histological and IHC findings of previous biopsy are observed in the present excision. There is an evidence of intravascular invasion seen. Concurrently, CECT thorax show a suspicious nodule at the right upper lobe of lung. Initially we suspected lung metastatic tumour based on the fact that AcCC has significant tendency to metastasis to lung and cervical lymph node. A wedge biopsy from lung was done and revealed another tumour which favouring of Squamous Cell Carcinoma (SCC). IHC studies on this tumour cells also show different findings with immunopositivity with P63 and negative for CK7. A probability of tumour metastasis to lung has been ruled out with the finding of a new primary tumour of lung. AcCC can be misinterpreted due to its benign appearance, absence of malignant features and histologically similar to the normal acinar cells. Pathologists should be aware and very vigilant while reporting this entity. AcCC of soft palate in this case is relatively rare and synchronous occurance of other primary tumour make it extremely unusual.

Keywords: Acinic cell carcinoma, squamous cell carcinoma, metastasis

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133. VALIDATION OF A FOUR PROTEIN SIGNATURE FOR DETERMINING LYMPH NODE METASTASIS AND SURVIVAL IN ORAL SQUAMOUS CELL CARCINOMA IN 3 MAIN DIAGNOSTIC CENTERS IN MALAYSIA

Fairuz AR, Anand R, Noor Akmar N, Lau SH, Boey GTF, Cheong SC, Rosnah MZ

Introduction: Despite advances in screening and detection tools, the overall accuracy for current pre-operative assessment of regional lymph node (LN) metastasis is still limited with low sensitivity (70%) and having a false negative rate of 30%. **Objectives:** To validate the previous study (Zanaruddin et al. 2013) that identified 4-protein signature (EGFR, HER2/neu, LAMC2 and RHOC) in primary oral squamous cell carcinoma (OSCC) which could reliably distinguishes patients with and without LN metastasis. **Method:** A total of 83 OSCC cases inclusive of socio-demographic and clinic-pathologic data were collected from three centers namely Oral Pathology Diagnostic Laboratory and Oral Cancer Research and Coordinating Centre, Faculty of Dentistry, University of Malaya; Department of Stomatology, Institute for Medical Research, Ministry of Health, Kuala Lumpur; and Department of Oral Pathology and Oral Medicine, Queen Elizabeth Hospital, Kota Kinabalu, Sabah. Four proteins (EGFR, HER2/neu, LAMC2 and RHOC) expression were evaluated using immunohistochemistry based on the intensity and percentage of staining. One Oral Pathologist in each center and a trainee Oral Pathologist independently performed the IHC scoring of the 4 proteins in each center. **Results:** All four proteins evaluated, were found to be significantly associated with the presence of LN metastasis. EGFR, HER2/neu, LAMC2 showed high expression whereas RHOC showed low expression with LN metastasis. The cutoff point of at least four proteins with cumulative score of 3 would reflect the best sensitivity and specificity. The 4-protein signature showed sensitivity of 90.1% and specificity of 64.1% and prognostic accuracy of 77.5% in correlation with LN metastasis in general for an overall 83 OSCC samples and in particular for each set of OSCC samples from each center demonstrates the robustness and accurateness of this 4-protein signature in predicting LN metastasis. Kaplan-Meier survival curves showed significant survival probability difference between two groups in 4-protein signature for overall 83 samples. However, this signature was not able to predict accurately the patient survival in smaller sized samples. **Conclusions:** Four protein signature (EGFR, LAMC2, HER2/neu, and RHOC) potentially could be used as prognostic indicators of LN metastasis in OSCC and predicting the LN metastasis of OSCC patients. This study also concluded that the survival probability is inconclusive. However, it is found that the 4-protein signature has shown a trend for prediction of overall survival.

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RESEARCH
IN
SPECIAL NEEDS DENTISTRY

134. BEHAVIOUR GUIDANCE IN SPECIAL NEEDS DENTISTRY (SND): KUALA LUMPUR HOSPITAL EXPERIENCE

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Introduction: Special Needs Dentistry (SND) Unit, Kuala Lumpur Hospital has been established since January 2012. Dental management of adult SND patients with behavioural problems is challenging. It can be an overwhelming experience for parents/carer, SND team members and patients especially for those who are unfamiliar or have no previous dental experience. The types of adult SND patients with behavioural problems ranging from those with intellectual and developmental disabilities, psychiatric disorders and cognitive impairment. **Case description:** The aim of this report is to share our experience, information and knowledge in managing adult SND patients with behavioural issues in the context of our local Malaysian setting. In Kuala Lumpur Hospital, Behaviour SND clinic runs every Fridays since 2017. On average, there are 6 patients seen in the morning with three clinicians and three dental surgery assistants utilising one dental chair. For those more challenging patients, daycare or general operation theatre is available depending on the selection criteria. However, there is a waiting list for this option. **Discussion:** As part of dental treatment plan, issues of managing these patients would involve communication, consulting with other medical colleagues, providing information to the parents/carer, informed consent and practical behaviour guidance suitable to our local Malaysian setting. Setting up the SND Unit revolves around improving the quality of patient care and services by learning from experience and sharing best practice for best outcomes.

Keywords: Special Needs Dentistry, behaviour guidance, behavioural, challenging patients

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135. CASE OF CORNELIA DE LANGE SYNDROME

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Introduction: Cornelia de Lange Syndrome (CDLS) is a multiple anomaly congenital disease characterized with a growth and developmental delay, a distinct facial appearance and involves multiple malformation mainly skeletal, gastrointestinal, cardiac malformation and craniofacial deformities. It was first described by a Dutch Pediatrician named Cornelia de Lange in 1933. Cornelia de Lange Syndrome is generally being described as an intellectual impairment associated with a several group of physical malformation. The diagnosis for this syndrome can be based on clinical feature alone. Genetic mutation in the human homolog of the Drosophila melanogaster Nipped-B gene (NIPBL) is one of the main cause for this syndrome. **Objective:** To identify oral manifestation and the treatment needs for patient with Cornelia de Lange Syndrome. **Case:** A 27 years old Chinese male diagnosed with Cornelia de Lange Syndrome was referred to Special Needs Dental Clinic with a chief complaint of bleeding gums. Patient underwent comprehensive dental treatment under general anaesthesia 10 years ago which was his last visit to a dental facility. Dental examination done for this patient during his first visit to Special Needs Dentistry clinic, Hospital Kajang indicated a fair oral hygiene. Patient was uncooperative during dental examination and treatment. **Diagnosis:** Generalized gingivitis with caries on palatal of 21. **Conclusion:** Dentitions are identified as normal with no distinct abnormalities. However, there are differences in other oral features such as thin upper lip, long philtrum, downturned angle of the mouth and high arch palate. Dental treatment was performed chairside with behavioural guidance and moderate clinical holding consented by parents.

Keywords: Cornelia de Lange Syndrome (CDLS)

Oral presentation at the National Oral Health Research Conference 2019 on 24-25 April 2019 at Eastin Hotel, Kuala Lumpur.

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136. CASE REPORT: DRUG INDUCED GINGIVAL ENLARGEMENT CAUSING A DIAGNOSTIC DILEMMA

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Introduction: Gingival overgrowth is a well-documented side effect associated with three major classes of drugs namely anticonvulsants, calcium channel blockers and immunosuppressants. Despite our greater understanding of pathogenesis of Drug Induced Gingival Overgrowth (DIGO), its treatment still remains a challenge for general dentists and dental specialists. The dental management is still largely limited to maintenance of improved level of oral hygiene and surgical removal of the overgrown tissue. This report aims to show the importance of collaboration between dentists and medical professionals in managing a case of Drug Induced Gingival Overgrowth (DIGO) in patient with kidney transplant receiving calcium channel blocker and immunosuppressant. **Methods:** In this case report, A 46-year-old, Chinese female presented to Special Needs Dentistry Clinic, Hopsital Kajang after she was referred by Nephrology team of Hospital Kuala Lumpur to rule out other suspicious pathology causing gingival enlargement which the patient claimed was slowly increasing in size for the past 6 months. She appeared very anxious during the visit. She was under amlodipine (calcium channel blocker) and cyclosporine (immunosuppressant), which could be possible causes of gingival enlargement. This patient was a known case of renal transplant who received the donor kidney from her mother who passed away due to Endometrial Carcinoma. It was clinically challenging to achieve a diagnosis as the gingival overgrowth was confined to only one area and it was ipsilateral to the kidney transplant side. Hence an incisional biopsy was done to confirm the diagnosis. Behavioural guidance was also incorporated to reduce patient's anxiety. **Results:** The diagnosis of drug induced gingival overgrowth was given and patient was reassured. **Conclusion:** The nephrology team of Hospital Kuala Lumpur was notified about the biopsy results. Hence, cyclosporine was changed to tacrolimus. Upon review after 3 months, the gingival overgrowth had significantly reduced in size.

Keywords: Drug induced, gingival enlargement, gingival hyperplasia, diagnostic

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137. SPECIAL NEEDS DENTISTRY UNIT: KUALA LUMPUR HOSPITAL EXPERIENCE

Norjehan Y

Background: Special Needs Dentistry (SND) Unit, Kuala Lumpur Hospital has been established since January 2012. The SND service initiated with a Specialist in SND and a dental surgery assistant. Since then, there has been increasing numbers of patients' attendance with referral from government and private clinics and hospitals. **Aim:** To share our experience, information and knowledge in setting-up SND Unit as a learning opportunity to build the foundation for such clinic elsewhere. **Methods:** In February 2011, SND clinical service was initiated at the Department of Paediatric Dentistry, Institute of Pediatrics, Kuala Lumpur Hospital with sharing of staff and facilities. At the early stage, all the referrals cases were within the department with transition of patients when they reached 16 years old. SND clinical service moved to the existing facility in 2012. The SND Unit was set-up with allocation for asset and operational budgets from the Oral Health Division, Ministry of Health Malaysia. **Results:** Since 2012, the SND Unit has grown with increased numbers of staff from none to one Specialist, two dental officers and three dental surgery assistants. Currently, the unit has two dental surgery rooms and allocation of general anaesthesia slots at both the Main OT and Daycare OT. In addition, SND team is part of the multidisciplinary team with Geriatric service, training of dental officers with interest in SND (four dental officers) and gazettment training for new Specialist in SND (three clinical Specialist in SND). **Conclusions:** Setting up the SND Unit revolves around improving the quality of patient care and services by learning from experience and sharing best practice for best outcomes.

Keywords: Special Needs Dentistry, SND, clinic, setting up

Oral presentation at the 24th International Association for Disability and Oral Health Congress on 31 August – 2 September 2019 at Dubai, UAE.

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138. THE DEVELOPMENT OF SPECIAL NEEDS DENTISTRY IN MALAYSIA: OVERCOMING THE CHALLENGES

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Aims: This paper aims to share the experience and knowledge in the development of Special Needs Dentistry (SND) service in Malaysia and how challenges have been overcome to ensure its growth and expansion are at par with other existing dental specialties. **Methods:** No specific method has been used but all the possible challenges were initially listed in order to plan the strategies to overcome the barriers. Among the listed challenges are lack in infrastructures for people with disability such as provision of lift in elevated buildings and ramp facilities, limited funding, lack of manpower and training support in this field. Apart from that, social and cultural stigma about people with disability, lack of knowledge about SND among the health professionals and failure to recognize the importance of oral health by the public are all significant to be overcome. Current policies related to dentistry in the Ministry of Health were reviewed followed by meetings, discussions and development of relevant documents to support the strategic planning. **Results:** This judicious effort has resulted in a recognition of SND as a specialty on its own, friendly facilities for people with disability, adequate financial resources for training of oral health professionals, auxiliary staff and other stakeholders as well as active involvement of SND in promoting the service to the public. **Conclusion:** Continuous effort, time and commitment are required to accomplish the mission of overcoming the challenges faced by SND. This must be further enhanced by a strategic planning and gaining support from the relevant stakeholders. This early intervention has facilitated the development of Special Needs Dentistry in Malaysia and ensuring its continuous progress as a specialty on its own. It will certainly benefit members of the SND fraternity and other relevant stakeholders from the ministries, non-government organizations (NGOs), academia, industries and consumer groups locally and internationally.

Keywords: Special Needs Dentistry in Malaysia, Challenges, SND in Malaysia

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RESEARCH
IN
FORENSIC

139. APPLICABILITY OF MODIFIED KOHLER (1994) AND DEMIRJIAN THIRD MOLAR CLASSIFICATION SYSTEM ON ADOLESCENT & YOUNG ADULT OF INDIAN ETHNIC IN MALAYSIA

Hairuladha AR, Scheila M, Norhayati J

In Forensic Dentistry, the third molar development provides the time window to evaluate the adult and juvenile status. As to date, specific database reference for the Indian adolescent and young adult in Malaysia using the third molar is not yet available. This study tested the modified Kohler (1994) and Demirjian (1973) third molar classification systems for assessing the age of majority on a sample of adolescent and young adult of the Indian ethnic in Malaysia. This retrospective cross-sectional study utilised 533 digital and conventional orthopantomograms of the Malaysian Indian ethnic adolescent and young adult between 13-24 years old from various public dental health facilities in Peninsular of Malaysia. All the present third molars were registered using modified Kohler (1994) and Demirjian third molar classification system. The relationship between the least developed third molar and chronological age was assessed by linear regression analysis in R and IBM© SPSS© Version 22.00 statistical software, which constructed the age prediction models to evaluate the age of majority. Both the third molar classification systems exhibit equivalent performance in performing age. An individual with the third molar of up to Stage C and Score 3 can be ascertained to be a juvenile, but both systems are less discriminative for higher stages or scores. This study found both modified Kohler (1994) and Demirjian performed similarly in assessing the age of majority. The uncertainty in assigning the adult status observed in this study reinstates further the caution of using the third molar to evaluate the age of majority and thus, advocate the holistic approach by considering the different biological marker in the age estimation model.

Keywords: Forensic Dentistry; Third Molar Development; Age Estimation; Adult; Malaysia

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140. BULLY IN TASKA CASE REPORTS OF THREE SEPARATE INCIDENTS OF MULTIPLE BITTING IN DAY CARE CENTERS

Norhayati J, Ahmad Nubhan A, Mohd Hafizal H, Muhamad Al-Hakim ML

Introduction: Bullying take many forms and done by people of all ages, even children. The perpetrator(s) usually prey on weak or fragile individual(s) and commit the act whenever the chance arises. Children do often fall victims to bully, usually by other kids known to them and also by their own siblings. But how early do children starts to develop this behaviour, and in what form? **Cases:** Three separate incidents of multiple biting occurred in three different day care centres are presented here to highlight the aggressive physical incidents that are commonly occurred in day care centres and the action taken by the victim's parents against the centres citing negligence on the carer's part. The first incident happened in November 2010 on a 10-month old Malay boy who was referred to a paediatric dental clinic in Hospital Tuanku Ampuan Rahimah Klang for examination of multiple bitemark injuries found all over his body, amounting to 18 injuries. The second incident referred was in July 2014 from Hospital Selayang whereby a 3-year old boy was reportedly bitten by other kid(s?) in a child care centre he was sent to. He suffered approximately 13 bitemark injuries mostly on upper part of his bod, front and back, as well as his face. The third incident was referred in August this year by Hospital Putrajaya in which a 2-year old boy was allegedly bitten by other kid(s?) in his child care centre, with the total injuries totalling around 24. **Conclusion:** Relating to these incidents, does multiple biting in small children are considered as bullying? What does bullying means, and how early does bully starts? And what can the parents, guardian or carer do about it?

Keywords: bully, day care, multiple biting

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141. DETECTING ORAL DISEASE AND CHILD ABUSE FROM FORENSIC ODONTOLOGY EXAMINATION: A CASE REPORT

Norhayati J, Dharshini N

Introduction: Children are easily affected by diseases, be it the common cold or life threatening ailments such as cancer. This is due to the fact that their bodies' immune systems are still developing as they grow but with proper care, illnesses are diagnosed efficiently and cured swiftly. However, not all children are given the attention that they need, which ends up in neglect, worse still, abuse. **Case:** A three-year old boy died due to intracranial bleeding, abnormal for a healthy toddler. History presented that the toddler had suffered from fever, malaise and loss of appetite a few days before passing away. Upon examination, bruises were noted over the face and body as well as redness of the lips. Forensic odontology examination was requested for opinion on these lesions around the mouth as to whether signs of oral diseases or something more unnatural. Subsequent detailed examination revealed the deceased had crusting at the angles of the mouth, redness of the entire gingiva as well as complete detachment of the lower mucosa. Conclusion: Clinical history prior to death, together with the post mortem findings intra-orally as well as around the lips strongly suggested that the deceased suffered from a common childhood oral disease known as primary herpetic gingivostomatitis. This disease is a manifestation of primary herpes simplex virus (HSV) 1 infection during childhood, which commonly affects children between the ages of six months to five years. It is characterized by ulcerative lesions of the gingiva and mucous membranes of the mouth, often with perioral vesicular lesions, which will disappear within two weeks of contraction. Unfortunately, despite this common treatable oral illness suffered by the deceased, other notable bruisings found all over the body as well as the torn or detached lower mucosa in the mouth pointed to possible abuse in this case.

Keywords: abuse, oral disease, primary herpetic gingivostomatitis

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RESEARCH
IN ORTHODONTICS

142. A STUDY OF REFERRAL AGE, AETIOLOGY AND TREATMENT MODALITIES OF IMPACTED MAXILLARY CENTRAL INCISORS (IMCI) IN THE ORTHODONTIC UNIT, SUNGAI PETANI, KEDAH

Deborah Anne ND, Yang Rafidah H, Chang CS

Introduction: The maxillary incisors are one of the most prominent teeth in an individual's smile. They normally erupt at age 7. When the contralateral tooth is present for more than 6 months and one is not, impaction must be suspected. This study investigates the demographics of IMCI and the management carried out for such cases in the Orthodontic Unit of Sungai Petani Dental Clinic. **Objective:** To determine the prevalence of IMCI seen in the Orthodontic Unit, Sungai Petani, Kedah, their demographic profile, the age of referral, the cause of the impaction and treatment modalities. **Material and Methods:** 1192 treatment notes and radiographs of new cases seen in the clinic between January 2015 and December 2017 were reviewed. All IMCI cases will be recorded. Demographic data, the age of referral, the cause of impaction and treatment done were collected and analysed using SPSS Software Version 22. **Results:** Among 1192 cases, only 22 presented with IMCI. 68% were girls and 73% were of Malay ethnicity. Median age of referral was 12 years (IQR:5). The most common cause of IMCI was the ectopic position of the tooth (50.0%). The treatment plans include surgical removal of the IMCI followed by alignment (45.5%), exposure and bonding (40.9%), open exposure (4.5%) and some defaulted treatment (9.1%). **Conclusion:** 1.9% of the patients referred to the clinic presented with an IMCI. Most of the patients were of Malay ethnicity, girls and were referred late. Almost half of the cases required surgical removal prior to alignment thus increasing the treatment time. The awareness of the benefits of early referral would be invaluable in treating these cases.

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143. A STUDY TO ASSESS ORAL HYGIENE AND CARIES STATUS OF NEW ORTHODONTIC PATIENTS REFERRED TO ORTHODONTIST IN NEGERI SEMBILAN

Norhadilah B, Siti Sakhira H, Tan KL Nishanti S, Gan EC, Wai CR, Juhaida S

Introduction: An assessment of patients' dental health is mandatory before initiating orthodontic treatment in order to gain an optimal result. The aim of this study is to assess oral health status among new patients referred to Orthodontist in Negeri Sembilan. **Material and method:** This is a cross-sectional study involving 192 patients from 6 orthodontic units in Negeri Sembilan selected by simple random sampling technique. Each patient was subjected to oral hygiene assessment by calibrated dental officer by using Silness and Loe Plaque Index (SLPI) and caries assessment once only during their first visit (P1). **Results:** 192 patients, consist of 69.8% female and 30.2% males with a mean age of 15.5 ± 1.8 years were evaluated. The result showed that, from 192 patients assessed, only 7.8% had excellent oral hygiene which met the requirement whereas 92.2% with non-excellence oral hygiene. Female was found to have better oral hygiene compared to male. The patient's age group 7-12 and 13-18 years old exhibited the highest proportion of non-excellence oral hygiene. All of the orthodontic units showed a high score in non-excellent oral hygiene (78.1%-100%). Caries lesion requiring restorative intervention was found in 13.5% of the patients. Rural located orthodontic units received more patients with caries (84.6%). **Conclusion:** A large proportion of eferrals for active orthodontic treatment were unsuitable due to poor oral hygiene and some with the presence of caries. It is important to establish excellent oral health prior to patient referral to achieve more efficient orthodontic service.

Keywords: Oral Hygiene, Caries Status, Orthodontic Treatment

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144. AWARENESS AND KNOWLEDGE OF ORTHODONTIC AMONG SECONDARY SCHOOL STUDENTS

Pang JA, Koay WL

Aim: To assess the school students, with respect to awareness, knowledge related to orthodontics and the effect of gender differences. **Materials and Methods:** A cross-sectional study with closed-ended questionnaire consisting of 17 questions was done on 16 years old students in 2 different schools in Tenom. Simple random sampling technique was used. Sample size was set at 100 students. **Results:** There were fifty-one female students and the rest were male students. 64% of students had good awareness about dentist or orthodontist and awareness on irregular teeth. But, only 30% had good knowledge about orthodontic treatment and causes of malocclusion. Female had higher awareness on irregular teeth (mean rank: 61.54) and knowledge about orthodontic treatment and causes of malocclusion (mean rank: 58.48) compared to male. **Conclusion:** There is a strong need in promotion of oral health awareness which include caries, periodontal problems, malocclusion etc. Achieving optimal health through preventive efforts is a hallmark of the dental profession. We need educational programmes to be organized annually in collaboration with the public health department of dentistry to improve the awareness and knowledge of orthodontics.

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145. BILATERAL TRANSPOSITION OF MAXILLARY CANINES AND FIRST PREMOLARS: ORTHODONTIC MANAGEMENT – A CASE REPORT

Tan CL, Wong XH

Transposition is a rare dental anomaly in positional interchange between two adjacent teeth. Studies indicated that tooth transpositions are more frequently unilateral than bilateral (12:1). It is a very rare phenomenon when the anomaly is bilateral and affects same teeth on both sides. The case of a 17 year old girl, with class I incisor relationship on class 1 skeletal base with bilateral transposition of maxillary canines- first premolars, severe crowding and posterior crossbite, is presented. This case report demonstrates the orthodontic management of bilateral transposition of maxillary canine-first premolar and by the end of treatment, the transpositions were maintained while achieving a good functional and aesthetic result.

Keywords: Transposition; Maxillary Canine; Malocclusion

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146. BOND FAILURE RATE OF INDIRECT BONDING IN ORTHODONTIC UNIT, RAUB DENTAL CLINIC

Chin SC, Mustaffa J, Jye YS

Aim: The objective of this study was to determine the bond failure rate of indirect bonding compared to direct bonding method. **Methods:** Forty patients from Orthodontic Unit, Raub Dental Clinic that were planned for upper and lower orthodontic fixed appliances treatment were invited to participate in the study. They were randomly assigned to have the brackets placed indirectly on either Maxilla (Group G1) or Mandible (Group G2) and direct bonding would be the opposing arch. During the bond up appointment, a coin was flipped to determine whether the patient will have the maxilla or mandible bonded first. Brackets that were debonded within 6 months were recorded. Statistical analysis was performed by means of chi-square test. **Results:** No statistical significance was found in the bond failure rate of both direct and indirect bonding method (P value=0.788). When comparing maxilla and mandible, 71.43% of all the debonded brackets were from the maxilla. 50% of all debonded bracket were upper second premolars. **Conclusion:** There is no difference in bond failure rate of indirect versus direct bonding within the first 6 months of bond up. Maxilla brackets are more likely to debond and especially upper second premolars.

Keywords: Bond Failure Rate, Indirect Bonding, Orthodontics

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147. CLEFT LIP AND PALATE PATIENTS DEFAULTING ORTHODONTIC TREATMENT AND THEIR CAUSAL BEHAVIORAL FACTORS

Kumeran M

Objective: We aim to investigate the prevalence of patients with cleft lip and palate (CLP) who did not comply with continuous orthodontic treatment and analyse their causal factors. **Methods:** In this cross sectional study, CLP patients registered from the year 2014 to 2017 ranging from the three government orthodontic clinics in Terengganu, consented to a written or telephone survey. The study was conducted from May 2017 to May 2018. Their social demographic and reasons for missing treatment was analysed with descriptive analysis. **Results:** Among the 73 patients, 41 patients (43.8%) have a history of defaulting treatment. The highest number of patients defaulted (53.7%) from 1- 6 months. Some common reasons for defaulting included clash with school activities (29.6%) and forgotten appointments (20.4%). **Discussion:** The number of patients who have defaulted is higher compared to the study by Paytner (1993) which was around 20%. Defaulting causes delay in treatment, which then causes undesirable outcomes (delayed movement, root resorption, tooth mobility) (Proffit 2013). The high number of patients defaulting treatment from 1-6 months and patients defaulting due to time management (school) and forgot appointment (attitude), shows the lack of urgency patients tend to have in following up with their orthodontic appointments. This may lead to limiting or a change in treatment options as the age and growth can effect treatment plan. Better promotion on the role of the orthodontic team, and better communication, especially with patient's parents have shown to improve patient compliance and attendance (Paytner 1993). Strategies such as reminder calls may also help. **Conclusion:** The prevalence of patients whom have defaulted orthodontic treatment is high, and steps need to be taken to reduce this. As patient's attitude seems to be a major contributor, improvement strategies are needed to improve compliance and help provide better treatment to patients.

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148. COMPARISON BETWEEN PARENTS' AND PATIENTS' SATISFACTION LEVEL TOWARDS CLEFT MANAGEMENT USING CLEFT EVALUATION PROFILE

Lau KL, Ong SC

Introduction: In Malaysia, 1 out of 941 births was reported to have cleft lip (CL), cleft palate (CP), and cleft lip and palate. Cleft Evaluation Profile (CEP) is a validated method to evaluate the satisfaction for individual features in cleft management. It has eight features: speech, hearing, lip, nose, teeth, bite, breathing, and profile. **Objective:** To compare the level of satisfaction of cleft patients' and their parents towards cleft management in Kelantan, Malaysia. **Methods:** A cross-sectional study was conducted from January to September 2016 using validated questionnaires (Noor and Musa et al., 2007), specifically cleft evaluation profile. Sample was collected from consecutive patients and parents attended to Combine Cleft Clinic Kelantan. Data was analysed using Kappa statistic. **Results:** The mean scores of Cleft Evaluation Profile for the parents ranged from 1.98-2.95, while patients ranged from 2.01-3.04. Parents gave more attention on features related to function (teeth) while patients were more aware of facial appearance (lip). Both parents and patients were aware of features related to facial appearance (nose and face). More than half of parents and patients (55.1%) are satisfied with the hearing, followed by bite (39.1%) and breathing (37.7%). Features that parents and patients not satisfied are lips (14.5%), face (11.6%), and nose (10.2%). **Conclusion:** Majority (96%) of parents and patients were satisfied with the care of cleft management team and treatment outcome. Features related to facial appearance - nose, teeth, lip, and facial profile needed more attention during cleft management.

Keywords: cleft lip and/or palate, parents' and patients' satisfaction, cleft management

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149. GINGIVAL AESTHETICS FOLLOWING ORTHODONTIC TREATMENT

Goh SP

Introduction: This study aimed to investigate the quality of gingival aesthetics in a consecutive cohort of subjects treated with upper and lower fixed appliances and also to establish any correlation between age, initial overjet, initial overbite, total duration of treatment, aesthetic component and dental health component of IOTN with initial and final gingival aesthetic outcome. **Objective:** (a) To investigate the quality of gingival aesthetics in a consecutive cohort of subjects treated with upper and lower fixed appliances(b) To establish whether there is any correlation between the age, initial overjet, initial overbite, total duration of treatment, aesthetic component and dental health component of the Index of Treatment Need (IOTN) with initial and final gingival aesthetics. **Methods:** The pre- and post-treatment photographs of 51 subjects under the age of thirty at the completion of treatment were evaluated in terms of gingival embrasures, incisal embrasures, gingival zeniths, connector areas, gingival level and symmetry as well as dental centrelines. Each parameter was given a score and the maximum custom-tool score developed was 26. **Results:** There was an overall 21% improvement in gingival aesthetics following orthodontic treatment within the sample. The only significant factors that influenced pre-treatment custom-tool score were pre-treatment IOTN aesthetic component score ($P < 0.001$) and initial overjet ($P=0.03$). The subjects with a pre-treatment IOTN dental health component score of 3 to 5 tended to have worse aesthetic outcomes, although this was only significant for a dental health component score of 5 ($P=0.006$). The initial overbite was close to reaching statistical significance, with those patients having an increased overbite before treatment tended to have a worse post-treatment aesthetic outcome ($P=0.06$). Only the pre-treatment custom tool percentage had a significant influence on treatment-induced outcome ($P=0.09$). **Conclusion:** Achieving perfection in gingival aesthetics following orthodontic treatment was problematic in many cases.

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150. IN-VITRO MEASUREMENT OF THE ACCURACY OF ORTHODONTIC BRACKET SLOT SIZE USING SCANNING ELECTRON MICROSCOPY (SEM)

Sindhuja R, Tan L

Aim: To evaluate the accuracy of orthodontic bracket slot height from different countries of manufacture and to compare this to the nominal value of 0.022 inches. **Materials and Methods:** This was a cross sectional study whereby five upper right central incisor brackets of 0.022 inch slot height from four different countries of manufacture, were measured using scanning electron microscope (SEM). The measurements were conducted in triplicate and the means and standard deviations of the slot height were determined and compared to the nominal value of 0.022 inches. Statistical analyses were carried out using Graphpad Prism software. One-way ANOVA, Tukey's multiple comparisons, Dunett's multiple comparison and Independent T-tests were carried out. $P<0.05$ was considered statistically significant. **Results:** B1 (China) was significantly different ($P<0.05$) from the nominal value of 0.022 inches. B2 (Germany) was not significantly different ($P>0.05$) from 0.022 inches. B3 (Japan) was significantly different ($P<0.05$) from 0.022 inches. B4 (America) and B5 (China; Lazada) was not significantly different ($P>0.05$) from the value of 0.022 inches. **Conclusion:** Brackets B2, B4 and B5 were shown to have accurate slot height measurements, however brackets B1 and B3 were oversized but fell within the range that has been previously reported. The findings of this study warrant further investigation using a larger sample, which could prove beneficial to orthodontic practitioners when treating patients.

Keywords: orthodontic, brackets, accuracy, SEM

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151. LOWER DENTAL ARCH WIDTHS CHANGES FOLLOWING FIXED ORTHODONTIC TREATMENT

Mohd Zambri MM, Rashidah B, Maria JG, Wan Nurazreena WH

Aim: To determine the prevalence of cases that are at risk of poor stability in terms of arch width changes following fixed appliances treatment. **Methods:** In a retrospective audit, 101 pre- and post-treatment lower study casts were selected from cases completed in the year 2015 in Orthodontic Unit, Klinik Pergigian Cahaya Suria. Samples were measured using a universal caliper by a single calibrated operator. Samples was categorised as extraction or non-extraction types. Arch width changes was determined using paired T-test. Differences were considered "within limits", if the changes were within the recommended limit ±0.25mm (for possible marginal measurement error) and "expanded", if above the range for within limits. It was set that the arch width changes should not be beyond the limit suggested guideline by Ackerman and Profitt (1997). **Results:** 42.6% were non-extraction while 57.4% were extraction cases. In the non-extraction group, 52.2% cases had expanded inter-canine widths, followed by inter-first and second premolars (27.9%) and inter-first molar (20.9%) widths. Arch width changes for the inter-first and second premolars and inter-molars widths were statistically significantly different ($p<0.05$) but both clinically significant. In the extraction group, 67.2% had expanded inter-canine widths, followed by inter-first premolar (64.3%), inter-second premolar (9.1%) and inter-first molar (5.2%) widths. The inter-canine ($M=1.43$; $SD=2.71$, $p<0.05$) and inter-first premolar ($M=2.87$; $SD=2.61$, $p<0.05$) widths statistically and clinically significant expansion but the inter-second premolar and molar were significantly contracted ($p<0.05$). **Conclusion:** The prevalence of cases with expanded arch widths was high regardless of the extraction type.

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152. OVER RETAINED DECIDUOUS MAXILLARY CANINE AMONG 13 YEARS OLD SCHOOL CHILDREN IN SEBERANG PRAI TENGAH, PENANG

Chew SF, Tiu SH

Introduction: Permanent canine is the second most impacted tooth. Interceptive extraction of maxillary deciduous canine between 10 to 13 years old is proven to be effective in preventing complications such as root resorption and more complex orthodontic treatment. **Objective:** To report the percentage of retained maxillary deciduous canine at the age of 13 among the secondary school students in Seberang Perai Tengah (SPT). To evaluate parental awareness on the possible maxillary canine impaction. **Methodology:** Total of 2005 13-year-old students who enrolled in the school incremental programme in 2017 were randomly selected to report the presence of retained maxillary deciduous canines. Parent/caregiver of students with over retained deciduous maxillary canine (n=52) were then sampled. A self-administered questionnaire was distributed to collect parental backgrounds, knowledge, attitudes and practices on possible canine impaction. Statistical analysis was performed using SPSS software (version 25). A probability of less than 0.05 is considered statistically significant. **Result:** The percentage of retained maxillary deciduous canine was 4.6%, with 1.6% were bilateral deciduous canines. Overall questionnaire response rate was 73.6%. There is no statistically significant difference ($p>0.05$) among different socio-economic background in association with parental awareness. Only 53.8% of the respondents knew their child still have retained deciduous canine. Majority of the respondents have the knowledge on the timing of permanent canine eruption (76.9%) and retained deciduous canine may indicate permanent canine impaction (69.2%). 76.9% of them wanted information and early intervention from school incremental programme. **Conclusion:** The percentage of retained maxillary deciduous canine at the age of 13 years old as a sign of possible permanent maxillary canine impaction was higher compared to previous studies. Overall parental awareness was satisfactory, however, empowerment of the school incremental programme on possible canine impaction and interceptive treatment is advocated.

Keywords: over retained deciduous maxillary canine

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153. PATTERN OF MALOCCLUSION AMONG ORTHODONTIC PATIENTS IN EAST COAST SABAH

Lee JH, Lillybia EE

Introduction: This study aimed to review the pattern of malocclusion among orthodontic patients in East Coast Sabah, as a baseline data for planning of treatment, annual budget, manpower in government dental clinic and future research. **Methods:** This was a cross-sectional study on 138 dental records of patients that attended the orthodontic consultation clinic in year 2018 in Tawau and Sandakan. All patients were examined and consulted by qualified orthodontists. Data taken were demographic (age, gender, and ethnic groups), referral source, BSI (British Standard Institute) incisor classification, skeletal pattern, IOTN (Index of Orthodontic Treatment Need) score, and type of orthodontic appliance indicated for the patients. All data analysed using Stata 15. **Results:** Mean age of the patients was 16.89 ± 0.37 years, with female predominant (n=101, 73.19%). Most patients were Chinese (n=68, 49.28%), Bumiputera Sabah (n=36, 26.09%), and Bugis (n=19, 13.77%). Almost all referred from dental officers (n=128, 92.75%). For incisor relationship, more patients presented with Class II division 1 (n=56, 40.58%), followed by Class II (n=45, 32.61%), Class I (n=34, 24.64%) and Class II division 2 (n=3, 2.17%). For skeletal pattern, more patients had Class II (n=54, 39.13%), while same number of patients presented with Class I and Class III each (n=42, 30.43%). Class III incisor relationship (n=29, 42.65%) on Class III skeletal pattern (n=29, 42.65%) were more common in Chinese. Most patients had IOTN Grade 4 and above (n=116, 84.06%). Treatment indicated was mostly fixed orthodontic appliance (n=120, 86.96%). **Conclusion:** Class II division 1 incisor relationship on Class II skeletal pattern were most common among the patients. However, Class III incisor relationship on Class III skeletal pattern were more common in Chinese. More than three-quarter of the patients needed treatment and were indicated for fixed orthodontic appliance.

Keywords: Pattern, malocclusion, orthodontic

Kinabalu, Sabah.

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154. PREVALENCE OF HYPODONTIA IN KLINIK PAKAR PERGIGIAN ORTODONTIK BANDAR MENTAKAB, PAHANG FROM THE YEAR OF 2013 TO 2017

Tan JHS, Fatimah A

Aim: The aim of this study was to determine the prevalence of hypodontia in Klinik Pakar Pergigian Ortodontik Bandar Mentakab in relation to gender, race, site (maxilla or mandible), tooth types, malocclusion involved, and the age being referred to clinic. **Material and Methods:** Clinical and radiographic records of all the patients who started orthodontic treatment in Klinik Pergigian Pakar Ortodontik Bandar Mentakab, Pahang from 2013 to 2017 were examined for evidence of hypodontia. All permanent teeth were investigated, except third molars. **Results:** The prevalence of hypodontia was 7.14% (3.78% for male and 8.54% for female). No significant difference in distribution of hypodontia according to race. There were more missing teeth in mandible (55.7%) compared to maxilla (44.3%). Maxillary and mandibular lateral incisors were the most frequently missing, followed by mandibular central incisors, mandibular second premolars, maxillary second premolars and maxillary canines. Hypodontia was found more frequently in Class II division 1 malocclusion and in Class I skeletal pattern. Most of the patients were being referred at the age of more than 15 years old. **Conclusion:** Present data for hypodontia were within the wide range portrayed in the published literature. With early detection of missing teeth, complications of hypodontia can be reduced by well-planned treatment modalities and with a multidisciplinary team approach to restore the function as well as the aesthetic of the dentition.

Keywords: Hypodontia, missing, congenital, prevalence

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155. PREVALENCE OF MALOCCLUSION AND ORTHODONTIC TREATMENT NEEDS OF PATIENTS ATTENDING A RURAL DENTAL CLINIC IN PEKAN DENTAL CLININC, PAHANG

Wan Aini WY, Norsyafinaz NA

Introduction: The demand for orthodontic treatment has increased in the public health sector. Due to limited resources, the demand for treatment has to be weighed against the need of treatment to ensure orthodontic treatment is catered for those who are truly in need. **Objectives:** 1) To determine the prevalance of different types of malocclusion using the British Standard Incisor (BSI) classification and 2) to determine orthodontic treatment needs according to the Dental Health Component (DHC) of the Index of Orthodontic Treatment Need (IOTN) in newly referred patients attending the Orthodontic unit of Klinik Pergigian Pekan, Pahang. **Methods:** 190 new patients were included in this cross-sectional retrospective study. All patients' data were retrieved from the patients' orthodontic treatment cards and records from September 2015 to December 2017. Data analysis was conducted using SPSS version 23.0. Ethical approval was obtained from the Medical Research & Ethics Commttee of Ministry of Health, Malaysia. **Results:** From a total of 190 subjects, 175 (92.1%) were in the Malay ethnic group, 5 (2.6%) were Chinese, 4 (2.1%) were Indian and 6 (3.2%) were in other ethnic groups. 52.6% of patients were 18 years old and above and 47.4% were aged less than 18 years old. Most patients were also females (69.5%) compared to males (30.5%). For the prevalence of malocclusion, most patients had a class II division 1 malocclusion at (42.1%), followed by class I malocclusion (29.5%), class III malocclusion (25.8%) and finally, class II division 2 malocclusion (2.6%). Most patients scored a DHC score of 4 (62.6%) and 5 (31.6%) suggesting great need and very great need for orthodontic treatment. Whereas, patients scoring a DHC of less than 3 was 5.8%. **Conclusion:** Most patients had a class II division 1 malocclusion and there great need for orthodontic treatment amongst patients referred to the orthodontic clinic in the rural public health setting is high.

Keywords: Prevalence, malocclusion, BSI, IOTN

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156. TRENDS AND PATTERNS OF ORTHODONTIC ASSESSMENT AND REFERRALS FROM MINISTRY OF HEALTH (MOH) ORAL HEALTHCARE CLINICS IN PERAK

Khor MC, Thivya V, Arjunan M, Nama Bibi SAK

Introduction: This is a retrospective study involving 289 referral letters from 4 Orthodontic Units in the state of Perak. In MOH, the IOTN is used as a guideline to prioritize the patients to whom orthodontic treatment is provided to, so that limited resources can be targeted at those patients in greatest need. **Objectives:** To improve orthodontic referrals in MOH primary oral healthcare clinics in Perak. **Methods:** Referrals are made to 4 Orthodontic units by Dental Officers of all ranks from Ministry of Health (MOH) oral healthcare clinics in Perak. Assessment of each referral form between January 2014 and June 2014 was done by 2 researchers who were briefed by an Orthodontic Consultant for standardisation of data collection. The findings were categorised into completeness, presence of complete Index of Orthodontic Treatment Need (IOTN) scores and appropriateness of referrals. IOTN is an effective tool in evaluating the severity of malocclusions, hence determining the urgency and need for treatment. Data obtained from the study was tabulated and analysed using the Statistical Package for Social Sciences Software (SPSS version 20.0). **Results:** A total of 88.2% dental officers had written complete referrals. Around 147 dental officers referred with incomplete IOTNs. 9.3% of inappropriate referrals were received where the oral hygiene and dental status was not up to par. **Conclusion:** A minority of dental officers are not fully aware of IOTN usage. Therefore, periodic calibration of all dental officers is recommended for standardization of IOTN usage and orthodontic referrals.

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RESEARCH
IN RESTORATIVE DENTISTRY

157. A RETROSPECTIVE STUDY ON THE SUCCESS RATE OF PREFABRICATED CROWNS IN RESTORATIVE DENTAL SPECIALIST CLINIC, IPOH, PERAK

Tian SL, Rosenani MN, Farah Syazwani MT

Introduction: This study aimed to evaluate the performance of prefabricated post retained crowns provided in Restorative Dental Specialist Clinic Ipoh. **Methodology:** This was a cross-sectional study. Dental records of patients with prefabricated post retained crowns between 2008-2014 were searched and reviewed. The clinical examination comprised of a dental check-up and an assessment of the prefabricated post retained crowns by the restorative specialist and dental officers in the department. Only those post and cores in which the post was in situ at the final examination without any adjustments were rated as 'success'. **Results:** Out of 320 cases, 225 were included for analysis. Majority of the patients were female (130, 57.8%) and Chinese (116, 51.6%). The success rates of prefabricated post retained crowns was 204 (90.7%). There was no significant difference in the success rate between metal and fiber post (91.3 vs 88.5%, p=0.587). Crown with prefabricated metal post showed the highest number of failure with 15 cases, followed by crown with prefabricated fiber post (5 cases) and bridge with at least one fiber post (1 case). The most frequent reasons of failure was fractures (9 cases), followed by swelling/sinus (7 cases), decemented/debonded (3 cases) and caries (2 cases). Focusing on tooth type and position of arch, premolars have the highest success rate (91.3%), with mandibular teeth having slightly higher success rate than maxillary teeth (92.0% vs 89.9%). Success rate was highest when there were no opposing teeth (90.8%). The length of time that the prefabricated post retained crowns had functioned before failure varied from 1-8 years. **Conclusions:** The success rate of prefabricated post retained crowns which were provided in Restorative Unit Ipoh was high. The most common reason of failure was fracture of the tooth. There was no significant association of different variables with the success rate of prefabricated retained crowns.

Keywords: Success rate, Prefabricated Post Retained Crowns

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158. AN INCIDENTAL FINDING OF AN ECTOPIC TOOTH IN THE MAXILLARY SINUS: A CASE REPORT

Salmiah K, Nur Laila SA

Introduction: Ectopic eruption of a tooth within the dentate region is often seen in clinical practice. It is commonly seen in the mandible and among females. Incisors, canines and premolar are the most affected teeth. Ectopic eruption into non-dentate area is a rare phenomenon and seldom being documented. Few have reported eruption into nasal septum, mandibular condyle, coronoid process and maxillary sinus. Previously reported incidents of maxillary tooth in the maxillary sinus have associated symptom of sinusitis or ophthalmic symptoms. **Case report:** Patient presented with complaint of pain on upper left first premolar. The tooth was carious, with swelling that is tender on the buccal sulcus. On exploration, the pulp was found to be necrotic. Canal cleaning and shaping was done and intracanal medicament placed. On consecutive visit, patient complaint of intraoral pus discharge from upper left region. On examination, all teeth on the upper left quadrant were non tender to percussion, however pain and swelling still persisted on the buccal sulcus. Cone Beam Computed Tomography (CBCT) was ordered and a radiopacity was noted in the left maxillary sinus. The radiopaque foreign body was removed via endoscopy at a private hospital and no more symptoms were present since. Root canal treatment was completed and tooth was finally restored to function. **Discussion:** CBCT was able to confirm presence & exact location of pathoses, in this case, presence of a supernumerary in the maxillary sinus. It provided a firm basis for accurate diagnosis and treatment planning, optimizing all resources put into the management of this patient & improving outcome.

Keywords: ectopic tooth, maxillary sinus

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159. COMPARISON OF BOND STRENGHT BETWEEN SELECTED ORTHODONTIC ADHESIVES VERSUS ANTERIOR RESTORATIVE MATERIAL

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The objectives of this study were to measure and compare the bond strength between selective orthodontic adhesives and anterior restorative materials. 104 extracted bovine incisors were selected and divided into four groups of 26 each, etched with 37% phosphoric acid, primed with Prime & Bond One (Dentsply) and bonded in dry field to enamel surface using four different adhesive materials. The materials tested were: Transbond XT (3M), Lightbond (Reliance), Filtek Z350XT (3M) and Neofil (Kerr). These samples then underwent thermal and acidic exposure for two time intervals, at twenty four hours and three months and finally the shear bond strength were measured using Instron Universal Testing machine.The data then analysed using SPSS Compare Mean-Paired Sample T-Test. Lightbond (OA) showed the highest mean value of bond strength at both 24 hours and three months' time interval which was 13.95 MPa. This followed by Transbond XT (OA) that exhibit lower value at 9.63 MPa. Filtek Z350 (AR) had the highest bond strength among the anterior restorative materials tested at 9.18 MPa while the Neofil (AR) has shown significantly lower and consistent mean bond strength in both time intervals among all materials which was 7.88 MPa. Orthodontic adhesives have higher bond strength to bovine enamel compared to anterior restorative materials.

Keywords: Orthodontic adhesive, Anterior restorative materials, Shear bond strength.

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160. ENDODONTIC PRACTICE PROFILE IN NEGERI SEMBILAN PUBLIC DENTAL HEALTH SERVICE, MINISTRY OF HEALTH, MALAYSIA

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Introduction: Root canal treatment is widely carried out in the public dental service as a method to prevent tooth loss. Apart from infection control issues, endodontic practice without rubber dam is potentially dangerous and legally indefensible. Aqueous sodium hypochlorite solution is the current gold standard root canal disinfection solution combining profound antimicrobial and organic tissue dissolving activity. Both are the universal practice recommendation which are often ignored by practitioners. **Objective:** To evaluate factors which influence rubber dam use and irrigation selection in Negeri Sembilan Public Dental Health Services. **Methods:** A QuestionPro® online questionnaire was sent to individual email addresses. Questions were posed on isolation techniques, irrigant selection. Raw data harvested was converted into Excel form and transferred into SPSS software for analysis. Process was repeated twice for validation. **Results:** 84.5% of the valid sample completed the online questionnaire in 4 weeks. Sodium hypochlorite was the most widely used endodontic irrigant during undergraduate training (87.6%). Sodium hypochlorite is still being used widely in their current practice at 83.1% regardless of department. The reasons for not using was perceived risk of hypochlorite accident (9%) and rubber dam set unavailability (7.5%). 70.1% respondents never use rubber dam during endodontic procedure in their current practice, although 70.6% always use rubber dam during their undergraduate training. 14.9% of respondents who never used rubber dam in their undergraduate training was from Asia Higher Institution (58.7%) and African Higher Institution (18.2%). Primary Care department reported the highest percentage of non-user (76.5%). Despite this, 99.5% of the respondents are aware of the risk of foreign body inhalation without rubber dam isolation. Cotton roll & saliva ejector is the most frequently practiced isolation method in current practice (87.1%). Most common reasons given for not using rubber dam was unavailability (57.2%), time consuming (15.1%) and inadequate training (10.3%). **Conclusions:** Majority dentist in Negeri Sembilan Public Dental Health Service uses sodium hypochlorite for root canal disinfection. However, rubber dam is never used by the majority due to unavailability.

Keywords: rubber dam, irrigation, sodium hypochlorite, endodontic treatment, questionnaire survey

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161. GINGIVAL VENEER: A PROSTHETIC SOLUTION TO ENHANCE SMILE BY MASKING AESTHETICALLY CHALLENGING GUM RECESSION

Foo MF, Aswani CA

Introduction: Gingival veneers are custom-made, removable prostheses designed to cover the gum recession on the upper anterior teeth and thus improving the appearance of the patient's smile. The surgical treatment to treat gum recession is sometimes uncomfortable, costly with prolonged healing time and unpredictable results, making it an unpopular choice. Gingival veneer is simple, non-invasive, economical, feasible and aesthetically acceptable. **Case Description:** A 37-year-old gentleman with the complaint of elongated and excessive visibility of upper anterior discoloured tooth while smiling after open flap surgical debridement was done on 21. The tooth had a prolonged sinus tract and pus oozing from periodontal ligament space. Periodontal assessment revealed an increased probing pocket depths of 6mm on mesial and 5mm on labial. Gum recession is 3mm on the labial. The open flap debridement procedure was performed in November 2016. Infrabony defect of 15mm was seen on mesial and distal of 21. There was 16mm of bone loss over the labial surface. The gum recession became more severe, resulting in more displeasing aesthetic appearance, post-surgery. An acrylic gingival veneer was fabricated. **Discussion:** Gum recession can be corrected surgically or non-surgically. Surgical cost, unpredictable results, healing time and discomfort have made the patient to opt for a relatively easy, inexpensive, fast and practical way to allow an aesthetic replacement of the gingiva by accepting gingival veneer. **Conclusion:** With the fabrication of acrylic gingival veneer, the aesthetic characteristic of 21 can be improved when the loss of periodontal support is evident.

Keywords: gingival veneer, gum recession

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162. INTEGRATED ORAL HEALTH NETWORKS STATUS INVOLVING RESTORATIVE UNIT OF SEREMBAN DENTAL SPECIALIST CENTRE-PRE AND POST RESTORATIVE DENTISTRY INDEX OF TREATMENT NEED (RDITN)

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Introduction: The objective of this study is to investigate the referral pattern of cases referred to Restorative Unit of Seremban Dental Specialist Centre before and after RDITN implementation. **Material and methods:** All dental records of patients referred to the Restorative Unit, Seremban Dental Specialist Centre from January 2015 until June 2015 for pre RDITN and from January 2017 to June 2017 for post RDITN were reviewed and data extracted. **Result:** It was found that the number of patients being referred to Restorative unit of Seremban Dental Specialist Centre has reduced from 355 (pre RDITN-era) to 173 (post RDITN-era). The referral sources during Pre RDITN-era were 11 whereas there were only 10 sources Post RDITN-era. Half of the source of referral have less percentage of referrals to Restorative Unit of SDSC after implementation of RDITN throughout the public dental service in Negeri Sembilan. 3 categories of cases (RCT, Bridge and Indirect restoration) have decreased in percentage of referrals after the use of RDITN while the other 4 categories (Direct restoration, Removable prosthesis, implant and other cases e.g. dentine hypersensitivity and bleaching) have increased. Most of the referred cases during pre and post RDITN era were RCT followed by bridge. During the pre-RDITN era, 22.3% of the referral's emergency treatments for RCT cases were not done and unfortunately this condition had worsened to 52% after implementation of RDITN. Majority of referred cases received by Restorative unit of SDSC for both eras were new RCT and only a small portion are retreatment RCT cases or case for redo of dentures. The study has confirmed that Restorative unit accept most of the referred cases (Pre:83.4%, Post:87.9%). The analysis from this study showed that only 60.7% of cases referred to Restorative unit use RDITN form. The study revealed that only 30.6% referrer understand RDITN index well enough to indicate the correct score for each referred case. **Conclusion:** The reduction in referrals clearly reflects the success of RDITN index in empowering the other oral health care providers to identified the appropriate case to treat and to refer. On the other hand the use of RDITN referral form and the level of understanding of RDITN codes need to be improved in the future to safeguard the effective integration between Restorative unit of SDSC and other health networks.

Keywords: RDITN, Oral Health Network Status, Dental Specialist Centre

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163. NONPRESCRIPTION BLEACHING VERSUS HOME BLEACHING WITH PROFESSIONAL PRESCRIPTIONS. WHICH ONE IS SAFER? A COMPREHENSIVE REVIEW OF COLOR CHANGES AND THEIR SIDE EFFECTS ON HUMAN ENAMEL

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Introduction: In recent years, with the increasing trend and desire for whiter teeth to enhance aesthetic appearance, tooth bleaching is becoming a popular choice of treatment among patients. Bleaching treatment is considered to be the most conservative, safe, effective, and minimally invasive method to overcome external and internal tooth discoloration. This study evaluates the efficacy and safety of the professionally pre-scribed and nonprescription over-the-counter (OTC) bleaching agents. **Materials and Methods:** Extracted human upper central incisors were prepared and stained with red wine for 14 days before being subjected to four different bleach-ing agents: professionally prescribed opalescence PF 15%, VOCO Perfect Bleach 10%, nonprescription OTC Crest 3D Whitestrips, and Whitelight Teeth Whitening System. Colorimetric measurement was performed with Vita Easyshade Handheld Spectropho-tometer, enamel surface microhardness measured using Vickers Hardness machine, and surface roughness was evaluated with profilometer, before and after bleaching. Scanning electron microscope (SEM) evaluation and atomic force microscopy were conducted postbleaching. Statistical Analysis The data were analyzed with t-test,Q3 two-way ANOVA, one-way ANOVA, and Turkey's test at a significance level of 5%. **Results:** All bleaching products have the same efficacy to whiten stained enamel. Opalescence PF 15% showed significant increase in the microhardness (92.69 ± 68.316). All groups demonstrated significant increase in surface roughness ($p < 0.05$). SEMQ4 evaluation showed that Opalescence PF 15% resulted in same microscopic appearance as unbleached enamel, while VOCO Perfect Bleach 10%, Whitelight Teeth Whitening System and Crest 3D Whitestrips demonstrated mild to moderate irregularities and accentuated irregularities, respectively. **Conclusion:** Professionally prescribed bleaching agent of Opalescence PF 15% is effective in whitening the teeth, while the other bleaching products may be effective but also have deleterious effects on the enamel.

Keywords: bleaching agents, OTC bleaching agent

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164. SEALING ABILITY OF INJECTABLE COMPOSITE RESINS, BIODENTINE AND MINERAL TRIOXIDE AGGREGATE (MTA) AS FURCAL PERFORATION REPAIR MATERIALS IN PERMANENT TEETH

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Introduction: Furcal perforation occurs at the floor of pulp chamber on the bifurcation area. Most common material that has been used is Mineral Trioxide Aggregate (MTA) due to its benefits including good sealing ability, biocompatibility, low cytotoxicity and be able to promote odontoblastic activity to form a hard barrier. However, due to its weaknesses including long setting time and relatively expensive, the search of alternative materials still continue. **Objectives:** To compare the sealing ability of injectable composite resins, Biodentine and MTA as furcal perforation materials. **Methodology:** 64 extracted human molar teeth was decoronated 3 mm above cemento enamel junction (CEJ) and horizontally cut off at mid-root. Root canal orifice and apical end were sealed with composite resin. A perforation was created in the furcal area. Specimens were divided into four groups i.e. repaired with dual cure composite (Paracore Automix, Coltene), flowable composite (G-Aenial Universal Flo), MTA (ProRoot MTA), and Biodentine accordingly. All specimens were completely immersed in 2% basic fuchsin for 24 hours at 370C. The teeth were sectioned buccolingually in the centre of perforation. Linear dye penetrations were measured using HIROX digital setereomicroscope. The data were analyzed using Median Test. The significance level was set at $P<0.05$. One specimen for each group were inspected under scanning electron microscope (SEM). **Results:** The percentage of dye penetrations were significantly higher in MTA and Biodentine than in injectable composite resins groups ($p<0.001$). Injectable composite resins also demonstrated less gap at material tooth interface under SEM. **Conclusion:** The injectable composite resins sealed furcal perforation better than MTA and Biodentine.

Keywords: Sealing Ability, Furcal perforation, Repair Materials.

Oral presentation at the Postgraduate Research Day 2017 at School of Dental Sciences, Health Campus, Universiti Sains Malaysia, Kota Bharu, Kelantan

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RESEARCH
IN PERIODONTOLOGY

165. 'STRAIGHTFORWARD, ADVANCED, COMPLEX' (SAC) CLASSIFICATION OF IMPLANT CASES REFERRED TO PERIODONTICS UNIT IN JOHOR BAHRU

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Introduction: The SAC classification is an assessment for both restorative and surgical aspects of implant therapy. It serves as a guide for clinicians in case selection and treatment planning after weighing the potential difficulty and risk involved. Information on expected limitations, complications and outcomes based on the SAC classification is helpful for patients in decision making. **Objective:** The aim of this study is to identify the level of surgical and restorative difficulty of implant cases referred to Periodontics Unit in Johor Bahru. **Methods:** The study subjects were conveniently sampled from all the newly referred implant cases from year 2015 to 2017. Selected subjects were examined clinically and radiographically. The extracted information from the study subjects were analysed using the SAC Assessment Tool. Data analysis was performed using descriptive statistical method. **Results:** A total of 85 subjects with 119 implant sites have been assessed. Most of the single-tooth gap implant sites were 'Straightforward' cases following restorative (87.6%) and surgical assessment (62. 9%). Fifty-five percent of the short gap and all extended gap implant sites fall into 'Advanced' and 'Complex' surgical cases. Restoratively, short gap (25.0%) and extended gap (100.0%) at anterior region were classified as 'Advanced' cases. 9 subjects refused implant therapy after the assessment and 63.6% were 'Advanced' and 'Complex' surgical cases. **Conclusion:** The SAC classification is useful for collective assessment before implant therapy.

Keywords: Implant Therapy, SAC Classification

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166. ASSOCIATION OF TYPE II DIABETES AS THE RISK FACTOR FOR PERIODONTAL DISEASE IN BAKRI HEALTH CLINIC, JOHOR

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Introduction: Diabetes has been confirmed as a major risk factor for periodontal disease. Prevalence for both periodontal disease and diabetes is increasing worldwide including Malaysia. However, the referral of diabetic patients for dental screening in Malaysia is very low. This is a collaboration study between health and oral health provider in Muar district to initiate and expand this study for further investigation as well as to create awareness among healthcare professionals regarding diabetes and periodontal disease. This study was conducted to determine the prevalence of periodontal diseases among Type II diabetic patients and other associated factors. The specific objective of this research was to determine the prevalence of periodontal disease among Type II diabetic patients in Bakri Health Clinic and to determine periodontal disease with other associated factors such as the level of HbA1c, medications, age, ethnicity, and personal oral hygiene care of patients. **Methods:** A cross-sectional study was conducted, involving 240 participants aged 18 years and above with Type II diabetes recruited via systematic sampling. The recruited patients were given a guided closed-ended questionnaire to answer and were screened with Basic Periodontal Examination (BPE) by calibrated examiners for detection of periodontal disease. **Results:** The prevalence of periodontitis among patients with Type II diabetes was 97.1%, whereas more than 75% presented with high levels of HbA1c. Multivariate analysis showed factors associated with periodontal disease among Type II diabetes were HbA1c level (0.0039, P<0.005) and age (0.0016, P<0.005) whereby this study revealed the trend of decreasing periodontal disease as age increases. **Conclusion:** The prevalence of periodontal diseases among Type II diabetic patients was high at 97.1%. There was significant association between increasing age and glycaemic control with periodontitis. Therefore, early detection of diabetes and periodontal disease would be adjunct to achieving optimum care for diabetic patients.

Keywords: Type II Diabetes, HbA1c, periodontal disease, risk factors, BPE.

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167. COMPARISON OF PERIODONTAL LIGAMENT MARKER EXPRESSION BETWEEN PERIODONTAL LIGAMENT AND PULP STEM CELLS

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Background: Utilisation of mesenchymal stem cells (MSCs), especially bone marrow stem cells, in periodontal regeneration has been researched extensively, however there is little reproducible clinical success reported. There is some evidence suggesting dental derived mesenchymal stem cells are better in regenerating lost periodontal structures. Periodontal ligament (PDL) cells have been previously suggested to express tissue-restricted markers such as Periostin, PLAP-1 and Nestin which could provide insights into how MSCs from different origins may be particularly suited to form different tissue types. This study attempted to compare the expression of these markers in dental pulp stem cells (DPSC) TO PDLSC. **Methods:** To assess osteogenic differentiation, analysis of Runx2 gene expression was carried out using quantitative real-time PCR (qRT-PCR) comparing at day 0 (baseline), 3 and 7. To assess adipogenic differentiation, analysis of PPAR-γ gene expression was carried out using quantitative real-time PCR (qRT-PCR) comparing at day 0 (baseline), 14 and 21. Analysis of gene expression was carried out using quantitative real-time PCR (qRT-PCR) comparing at day 0 (baseline), 7, 14 and 21 for the above mentioned periodontal markers. **Results:** Induction of MSCs into osteogenic and adipogenic lineages as analysed by gene expression of RUNX-2 and PPAR-γ was inconsistent. More variability in expression of periodontal markers was noted between cell lines from different individuals compared with tissue origin of the cells. Expression of Nestin was more predominant in in one DPSC line compared to PDLSC while PLAP-1 were more highly expressed in PDLSC cultures particularly at latter stages. **Conclusion:** Within the limits of this pilot study, expression of suggested PDL markers suggest subtle differences between PDLSC and DPSC differences particularly for PLAP-1 and Nestin. Greater variation was detected between different individuals instead of tissue of origin.

Keywords: Periodontal ligament marker, Periostin, Nestin, PLAP-1

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168. DENTAL FLOSS AS A POSSIBLE RISK OF DEVELOPING PERI-IMPLANTITIS

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Introduction: Many clinicians advised the use of dental floss to maintain dental implant hygiene. Remnants of dental floss used have been reported contributing to the development of peri-implantitis though they are rare. **Case:** We presented a case of peri-implantitis associated with dental floss remnants used by the patient. There was massive inflammation of the peri-implant region and bone loss. Therefore, surgical intervention was carried out. The peri-implant site healed with recession at the mucosal margin. **Discussion:** Peri-implantitis is an inflammatory reaction to bacteria associated with loss of supporting bone around a functioning implant. The development dental biofilm on the implant surfaces could be responsible for altering the biocompatibility of implant surfaces. Dental floss is usually recommended in conjunction with interproximal oral hygiene practices to achieve and maintain healthy oral conditions. Routinely, this includes the cleansing of dental implants. Implants have anatomical differences that may require extra care than natural teeth. However, when bone loss has already taken place and rough implant surfaces are exposed, the peri-implant conditions may be jeopardized by the application of dental floss. There is a potential for floss to shred and get stuck between the mucosa and the implant. Remnants of the dental floss that have been left behind due to shredding have been linked to peri-implantitis. **Conclusion:** Dental floss is a very useful tool used to maintain implant hygiene, but proper instruction on its usage is deemed critical to avoid remnants and hence developing peri-implantitis. To avoid this, the utilization of interproximal brushes or toothpicks may be preferred in certain cases.

Keywords: Periimplantitis, dental floss

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169. HONEY AS AN ADJUNCT TO NON-SURGICAL PERIODONTAL THERAPY

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Purpose of study: This study aimed to compare the pocket depth reduction six weeks after scaling and root planning with different subgingival irrigation material in two different group. **Materials and method:** We reported three subjects with generalized chronic periodontitis. All cases received three times subgingival debriment. Prior to the subgingival debridement, FMBS, FMPS, percentage of PPD ≥6mm and percentage of healthy site were recorded. Two subjects received honey irrigation and 1 subject received chlorhexidine irrigation after scaling and root planning. Trigona Bee Honey obtained from a local apiarist was used as the irrigation material. Same clinical parameters were recorded upon six weeks review. **Results:** All subjects reported reduction in FMBS and PPD ≥ 6mm with increase in healthy sites. Subjects who received honey irrigation recorded higher percentage of reduction of PPD≥6mm after 6 month than those who received chlorhexidine irrigation. Bleeding score reduction was higher in subject who received chlorhexidine compared to honey. **Conclusions:** Trigona Bee Honey irrigation might have potential benefits as irrigation agent after scaling and root planning based on the antibacterial activity of the honey, however more study with larger subjects and group is needed to prove this hypothesis.

Keywords: honey, non-surgical, periodontal therapy

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170. KNOWLEDGE OF DENTAL OFFICERS IN BATU PAHAT, JOHOR ON IMPLEMENTATION OF STANDARD OPERATING PROCEDURE MANAGEMENT OF PERIODONTAL CONDITIONS IN PRIMARY HEALTHCARE

Sarah AR, Noratikah E, Mohamad Shamim AA, Lou SW, Noordin K

Introduction: Standard Operating Procedure (SOP) Management of Periodontal Conditions in Primary Healthcare was introduced by the Oral Health Programme, Ministry of Health since 2018 in order to cater for high prevalence of periodontal disease among Malaysians. Basic Periodontal Examination (BPE) was the main screening tool suggested in this SOP. However, the implementation of BPE in Batu Pahat was very low from January to June 2019 (0.01%). Therefore, an assessment was required to investigate the factors contributing to low BPE screening in Batu Pahat. This study aims to assess the knowledge of dental officers on the SOP as well as their understanding on BPE procedure. We also aim to find the factors that prevent them from performing BPE on all adult patients. **Methods:** This is a cross sectional study conducted in June 2019 with distribution of questionnaires to 68 dental officers. The questionnaire consisted of questions on age, year of service, clinic and time taken to do BPE followed by 10 other related questions. The data collected were analysed using SPSS software SPSS 17.0. **Results:** It was found that 76.5% of the respondents claimed they knew about the SOP through management (51.9%) and colleagues (42.3%) but 55.9% did not know the year this SOP was introduced. Regarding BPE procedure, mean knowledge of all respondents was 3.88 ±0.94). Questions on suitable pressure (35.3%) for pocket examination and numbers of teeth required for pocket examination (36.8%) were the highest incorrect answers among the respondents. Among the respondents, 76.5% agreed that BPE was crucial to adult patients but lack of implementation was due to time restriction (50%) and tendency to forget (17.6%). **Conclusions:** Majority of dental officers in Batu Pahat were exposed to this guideline and had adequate knowledge in BPE procedure. However, the main reasons for low BPE screening were time consuming and difficult to establish BPE as part of routine oral examination. Therefore, continuous regulation and comprehensive planning are required to ensure this beneficial programme will achieve its target successfully.

Keywords: Standard Operating Procedure, Basic Periodontal Examination, knowledge

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171. KNOWLEDGE ON SMOKING AND PERIODONTAL DISEASE: A CROSS-SECTIONAL SURVEY AMONG TARGETED RESPONDENTS

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Background: The impact of smoking on oral health is directly related to the toxic tobacco fumes. The study aimed to investigate the awareness of the link between smoking and periodontal disease among the population seeking periodontal treatment. **General Objective:** To study patients' awareness on the effects of smoking on general health and dental health. **Specific Objectives:** i) To investigate patient's awareness on the effects of smoking on periodontal health. ii) To find link between sex, gender, education level, smoking status and awareness on the effects of smoking among patients in Perlis. **Materials and Methods:** A self-administered questionnaire constructed in local Malay language consisting of 13 questions on sociodemographic details and 10 questions on the knowledge domain was distributed to eligible respondents while they were waiting for their consultation in the periodontal clinic waiting hall. There were 330 study participants aged 16 years old and above, who participated in this study from all 12 dental clinics in the state of Perlis, Malaysia. Data were entered into Statistical Package for the Social Sciences version 20.0 for analysis. Descriptive statistics were used to describe the sociodemographic data, whereas association between potential factor and the knowledge of awareness was found using the Pearson Chi-square test of independence or a Fisher's exact test, depending on the eligibility criteria. **Results:** Our study showed that 4.5% (n = 15) of the respondents were not aware that smoking did add risk for oral cancer, 14.5% (n = 48) were not aware that smoking could cause gum disease. Smoking status was significantly associated with the awareness of smoking effect on gum disease (P = 0.002). The proportion of the active smokers being aware that smoking could potentially cause gum disease was considerably less as compared to the nonsmokers (62.7% vs. 83.3%). **Conclusions:** Continuous dental health campaigns and awareness program are crucial to instill awareness and health-seeking behavior as well as to enforce public's knowledge.

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172. LIP REPOSITIONING AND ESTHETIC CROWN LENGTHENING: A CASE REPORT WITH FOLLOW UP OF 32 MONTHS

Loh YM, Lau GS, Chan YK

Introduction: The display and harmony of gingiva contour can significantly affect the smile esthetic. Excessive gingival display (EGD) or commonly known as "gummy smile" is a condition where maxillary gingiva display more than 3mm during smiling. Lip repositioning is a viable surgical procedure to correct EGD by limiting upper lip elevation when smiling. Similarly, short clinical crown and uneven gingival margin could be modified by esthetic crown lengthening, where greater gingivoincisal length of tooth structure will be exposed to create a more pleasant smile. **Objective:** This case report describes the surgical outcomes and stability of lip repositioning combined with esthetic crown lengthening in a patient with 32 months of follow up. **Case Report:** A 28-year-old healthy Chinese lady was referred to Periodontics Unit for management of gummy smile. She had orthodontic treatment before and clinical examination revealed maxillary excess, uneven gingival margin and short, square shaped crowns from #12-#22. Initial gingival display was 8mm. **Management:** Lip repositioning surgery was performed to limit upper lip elevation. Esthethic crown lengthening from #12-#22 (labial) was performed 5 months later upon patient's request to further enhance her smile. **Outcome:** Patient was reviewed at regular interval until 32 months after lip repositioning procedure. Gingival display when smiling was reduced immediately from 8mm to 2.5mm after lip repositioning surgery. The distance from incisor edge to gingival zenith at #11 has increased by 1.5mm after crown lengthening and was stable throughout the review periods. The results from 32 months review showed esthetic satisfaction where the gingival display stabilised at 2mm. **Conclusion:** Combined approach of lip repositioning and esthetic crown lengthening surgery is useful for correction of EGD without the need of complex surgery.

Keywords: Excessive Gingival Display, Lip Repositioning, Crown Lengthening

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173. MANAGEMENT OF AMLODIPINE-INDUCED GINGIVAL OVERGROWTH: A CASE REPORT

Wong WQ, Lau GS, Chan YK

Introduction: Gingival overgrowth disturbs oral function and cosmetically disfiguring. It is a well-documented adverse effect of three types of drugs namely, anticonvulsants (eg. phenytoin), calcium channel blockers (CCB) (eg. nifedipine, amlodipine), and immunosuppressant (eg. cyclosporine). Amlodipine is a dihydropyridine derivative antihypertensive drug. It was first reported of causing gingival overgrowth by Seymour et al. in 1994. **Objective:** This case report aims to highlight the side effects of amlodipine on periodontal tissue. Along with drug substitution, appropriate periodontal treatment and good plaque control could lead to regression and prevention of its recurrence. **Case report:** A 62-year-old Indian gentleman was referred to Periodontics unit, complaining of swelling and bleeding at the front teeth for two months. The patient was hypertensive and had been taking the CCB amlodipine. Intraoral examination revealed poor oral hygiene, generalized nodular enlargement of inflamed gingiva. The probing depth was recorded in the range of 4mm to 10mm. **Management:** Amlodipine was substituted with valsartan as per advice of physician. Patient was educated and motivated on the maintenance of proper oral hygiene. Professional scaling and root planing was performed. After 7 months of initial periodontal therapy, remaining excess gingival tissue was corrected by surgical intervention, mainly at #17 to #14, #11 to #22 and #46i to #47i. **Outcome:** Follow up was scheduled one to three monthly. Upon examination at 12 month review, the periodontal pockets were generally recorded in range of 4 to 5 mm. Periapical radiograph revealed bone remodelling at #31 and #43. **Conclusion:** This case is a combination of amlodipine-induced gingival overgrowth and periodontitis due to poor plaque control. Healthcare providers should be aware of the side effects of this drug in susceptible individuals. Prompt referral and comprehensive treatment should be provided for the affected patients.

Keywords: Amlodipine, Gingival Overgrowth, Periodontitis

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174. MANAGEMENT OF MUCOSAL FENESTRATION WITH CONNECTIVE TISSUE GRAFT: A REPORT OF TWO CASES

Chan YK, Rosliza P, Ma BC

Introduction: Mucosal fenestrations are openings through the oral mucosa. They are relatively uncommon and not often described in the literature. The fenestrations may create problems in plaque control, root hypersensitivity and aesthetics. **Case:** This is a report of two cases of mucosal fenestratons due to complication of mucosa healing post apicectomy of an endodontically treated tooth with exposure of part of the root and post fixation of an autogenous bone block prior to implant placement with exposure of part of the bone block and fixation screw. **Discussion:** Mucogingival procedures including connective tissue grafts, free gingival grafts and lateral pedicle grafts are generally considered to be the treatment of choice in the closure of a mucosal fenestration. Both fenestrations in this case report were successfully closed with the use of conective tissue graft harvested from the palate. **Conclusion:** Connective tissue graft had been proven to be a simple and reliable graft for the closure of mucosal fenestrations with minimal discomfort to the patient.

Keywords: Mucosal Fenestration, Connective Tissue Graft

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175. PERI-IMPLANT DISEASE RELATED TO EXCESS CEMENT: A REPORT OF 2 CASES

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Introduction: Cement retained prostheses are widely used in implant dentistry. Excess cement following implant crown cementation poses a risk for peri-implant disease as it acts as niche for biofilm formation, subsequently leads to inflammation around peri-implant tissue. Objective:The aim of this report is to highlight the possible role of residual cement around implant supported prosthesis in peri-implant disease. **Case report:** Case 1: A 63-year-old Chinese lady who is fit and healthy presented to Periodontics Unit due to discharging sinus at upper front implant prostheses two months after crown insertion. Clinically, periodontal pocket depth at implants #11i, 12i was within normal limit, but two sinuses were noted at interdental region. Periapical radiograph showed gutta percha point tracing towards bony margin of #12i at the junction between abutment and fixture. Residual cement was found at #11i implant abutment and it was removed during flap surgery. The surgical site healed well and sinus resolved during review visit. Case 2: A 63-year-old Indian lady was referred to Periodontics Unit for management of mobile teeth. During clinical examination, suppurative deep pockets and residual cement on implant #16i, 17i were noted. Periapical radiograph showed 50-70% bone loss and radiopaque deposits at interproximal area of the implants. Open flap surgery was performed and the excess cement was removed. The bony defect was grafted with synthetic bone. Upon review, mucosal recession and exposed implant threads was observed. **Conclusion:** Excess cement could lead to peri-implant disease.

Keywords: Peri-implant Disease, Excess Cement, Implant Supported Prosthesis

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176. PREVALENCE OF PERI-IMPLANT DISEASES AND COMPLICATION RATES OF IMPLANT-SUPPORTED SINGLE CROWN AFTER TWO- TO TEN-YEAR FOLLOW-UP AT A GOVERNMENT PRACTICE ENVIRONMENT

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Rationale of study: Implant-supported restorations have been performed at the Periodontal Dato' Kumbar Clinic, Kedah for over 10 years. Long-term clinical performance of the implants should be evaluated to improve implant success rate and reduce additional healthcare costs to manage the implant complications. **Aims:** This cross-sectional study described results for prevalence of peri-implant diseases, implant loss and prosthetic complications in patients with implants of at least 2 years of function. Another outcome was to assess patient characteristic associated with peri-implant disease. **Methodology:** All 35 subjects who received implant-supported single crown (ISC) at Dato' Kumbar Periodontal Specialist Clinic, Kedah from September 2008 to September 2016 were invited for the clinical and radiologic examination. Twenty-three patients (13 males and 10 females) with a total of 43 implants and at least 2 year of loading time (range: 2-10 years) presented for examination were recruited. A patient and implant-based prevalence analysis of peri-implant diseases was carried out. **Results:** Total 15 Straumann® implants (Institute Straumann AG, Basel, Switzerland) and 28 NobelReplace implants (Nobel Biocare AB, Gothenburg, Sweden) were studied. The patients were aged 31 to 76 years with mean ± SD: 60 ± 10.8 years. During the 2 to 10 years period (mean ± SD: 5.1 years ± 2.3 years), there was no implants loss after placement of the suprastructure while 3 patients with 3 implants were reported with prosthetic complications. The prevalence of peri-mucositis and peri-implantitis at the patient's level were both 30.4% (95% confidence interval [CI]: 10-51%). They were 20.9% (95%CI: 8-34%) and 18.6% (95% CI: 6-31%) at the implant's level. Patients characteristic including diabetes, smoking habit, history of periodontitis or non-compliant to maintenance visits were shown to have no association with peri-implant disease. **Conclusion:** In this representative subject sample, the prevalence of peri-implant disease at a government practice was high (60.8%). The prevalence of prosthetic complications was 13%. None of the implants failed. Implant condition was not associated with patient characteristic in this study. Within the limitation of the study, a large-scale study is required to verify the findings.

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A LIFETIME OF HEALTHY SMILES