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SEPERTI SENARAI EDARAN

Y.Bhg Datuk/Dato'/Dato' Indera/Tuan/Puan,

MALAYSIAN GUIDELINE FOR THE MANAGEMENT OF THE PLACENTA ACCRETA SPECTRUM

Adalah dengan segala hormatnya saya merujuk kepada perkara di atas.

2. Sebagaimana sedia maklum Kementerian Kesihatan adalah komited bagi memastikan penurunan kadar kematian ibu hamil yang merupakan satu indikator Millenium Development Goals (MDG), berterusan dengan Sustainable Development Goals (SDG).

3. Dokumen *Consensus Statement on Management of the Adherent Placenta in Ministry of Health Hospitals* telah dihasil dan diedarkan pada 2013. Ia menjadi rujukan bagi pengurusan kes *placenta accreta* yang merupakan salah satu penyumbang kepada kematian ibu hamil di Malaysia. *Consensus* ini telah disemak semula oleh Jawatankuasa CEMD Kebangsaan berdasarkan dokumen *FIGO Consensus Guidelines on Placenta Accreta Spectrum Disorders, 2018*.

4. Bersama-sama ini disertakan dokumen yang telah disemak semula; *Malaysian Guideline for the Management of the Placenta Accreta Spectrum* bagi rujukan semua pakar dan pegawai perubatan Jabatan O&G di hospital bawah jagaan jabatan kesihatan masing-masing untuk diguna pakai agar dapat mengurangkan kematian ibu hamil.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(DATUK DR. NOOR HISHAM BIN ABDULLAH)

s.k Timbalan Ketua Pengarah Kesihatan (Perubatan)

Timbalan Ketua Pengarah Kesihatan (Kesihatan Awam)

SENARAI EDARAN

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Malaysian Guideline for the Management of the Placenta Accreta Spectrum

These recommendations are made for the guidance of obstetricians managing Placenta Accreta Spectrum (PAS). This revised guideline is adopted from the FIGO guidelines for PAS.

The incidence of placenta praevia accreta is 4.1% in women with one prior caesarean delivery and 13.3% in women with two or more previous caesareans.

Definitions:

Placenta accreta
This is an abnormally firm attachment of the placental villi to the uterine wall. This is due to partial or total lack of the decidua basalis layer.

Classification:

Placenta accreta - Chorionic villi are attached directly without invading the myometrial wall.
Placenta increta - Placental villi invades the myometrium up to the external layer.
Placenta percreta - Placental villi invades through the uterine serosa and possibly into the adjacent organs.

Risk factors for placenta accreta:

- Placenta praevia
- Caesarean section
- Advanced maternal age
- Grandmultiparity
- Previous curettage
- Myomectomy
- Submucous myoma
- Asherman's syndrome
- A short caesarean to conception interval (< 18 months)
- Previous retained placenta

Diagnosis

Ultrasonography should be done by a competent person in cases of suspected placenta accreta.

Ultrasonographic Signs of Placenta Accreta	
Grey Scale Signs	**Colour Doppler Signs**
Loss of retroplacental hypoechoic zone	Dilated vascular channels with diffuse lacunar flow
Progressive thinning of the retroplacental hypoechoic zone (myometrium) < 2mm	Irregular vascular lakes with focal lacunar flow
Multiple placental lakes	Hypervascularity linking placenta to bladder
Thinning of the uterine serosa-bladder wall complex (percreta)	Dilated vascular channels with pulsatile venous flow over cervix
Elevation of the tissue beyond the uterine serosa-extension of the placenta beyond the myometrium (percreta)	Poor vascularity at sites of loss hypoechoic zone

The combination of grey-scale and colour Doppler imaging ultrasound markers is reported to have increased the sensitivity of ultrasound imaging to around 90% with negative predictive values ranging between 95% and 98%.

MRI is currently only recommended as an adjunct to ultrasound imaging by many professional bodies throughout the world as it has yet to clearly demonstrate a significant improvement in management or pregnancy outcomes. Cystoscopy can be done in cases where bladder invasion is highly suspected by radiologic studies.

Antenatal Care

An adherent placenta may be associated with a normally located or a low lying placenta. Routine ultrasound scanning at 20 weeks of gestation should include placental localisation.

A follow-up scan should be done at 32 weeks in asymptomatic women with a low-lying placenta with or without a previous caesarean section scar. This allows planning for third trimester management, as to when the patient needs to be referred to a specialist hospital for confirmation and management.

Women who bleed early in the pregnancy and have low-lying placenta should be managed individually. Such women may need prolonged periods of hospitalisation. Home management is discouraged. However, extensive counselling is required before home management.

In the antenatal care of women with placenta accreta, the management of any other risk factors identified should be carefully planned and documented. These include anaemia, diabetes in pregnancy and hypertensive disease. All such factors should be optimised before the planned delivery in order to reduce the risk of operative delivery to the woman.

Delivery

Multidisciplinary management of a patient with possible adherent placenta is vital. The involvement of the anaesthetic team is important with possible planning for the availability of an intensive care bed. The paediatrician should be notified of the impending delivery in view of possible prematurity.

There may need for consultations with the surgical, urology and interventional radiology teams to optimise the management. A multidisciplinary meeting with the involvement of all teams involved is advocated to plan the appropriate management. The blood bank should also be informed of the need for possible massive transfusion.

Complications should be reviewed, as well as approach to management, with consideration of different options:

- Attempt at placental delivery
- Planned hysterectomy
- Conservative management
  (Post conservative treatment with Methotrexate: the use of methotrexate is not recommended until further evidence is available on its efficacy and safety)

Conservative management of both abnormally adherent (placenta accreta) and invasive placenta (placenta increta and percreta) defines all procedures that aim to avoid peripartum hysterectomy and its related morbidity and consequences.

Four different primary methods of conservative management have been described in the international literature:

(1) The Extirpative Technique
   - Manual removal of the placenta.

(2) Leaving The Placenta In Situ or The Expectant Approach

- The overall success rate of uterine preservation was 78% (95% CI, 71%–84%).
- Data suggest that leaving the placenta in situ may be an option for women who desire to preserve their fertility and agree to close follow-up in centres with adequate expertise.

(3) One-Step Conservative Surgery

- Removal of the accrete area and suturing around the accreta area after resection.

(4) The Triple-P Procedure

- Excise the myometrium with PAS disorder tissue and to reconstitute the uterine defect. The main steps of this procedure include: pelvic devascularisation involving preoperative placement of intra-arterial balloon catheters (anterior division of the internal iliac arteries) and no attempt to remove the entire placenta with large myometrial excision and uterine repair.

These methods have been used alone or in combination and in many cases with additional procedures such as those proposed by interventional radiology. These conservative management measures is associated with an almost 30% risk of PAS disorders in subsequent pregnancies.

Individual characteristics should be considered with regards to timing of the caesarean section. The planned delivery at around 36–37 weeks of gestation is a reasonable compromise. Corticosteroid cover can be given if delivery is planned before delivery.

This high risk surgery should be done in the main OT complex rather than the maternity OT in view of the need for multidisciplinary involvement and the possible need for additional surgical instruments.

The choice of anaesthetic technique should be left to the consultant anaesthetist. There are insufficient studies to prove the superiority of one technique over the other. There must be effective ongoing communication between the anaesthetist and the obstetrician to keep each other fully informed of the evolving scenario in such cases.

Anaesthetic Management

The technique of anaesthesia should be decided in the delivery plan during multidisciplinary meeting itself. Delivery plan should consider:

- Place of delivery which requires the biggest operating room to accommodate for multiple team involvement
- Any decision for prophylactic pelvic arterial balloon insertion (i.e. Internal iliac artery balloon insertion)
- Pre-caesarean section ureteric stenting
- Adequate supply of blood and blood products in operating room
- Use of cell saver
- The need for activation of massive transfusion protocol (MTP)
- Post-operative monitoring in the High Dependency Unit or Intensive Care Unit

General anaesthesia is the most commonly used technique described in the literature. Reasons being:

- Chances of profound hypotension
- Risk of massive bleeding with associated coagulopathy
- Higher risk of hysterectomy
- Loss of airway

This makes regional anaesthesia a less favourable technique in patient with PAS disorder. However, regional anaesthesia is recommended in some centres with otherwise healthy patients with minimal degree of invasion. It will also prevent the effect of general anaesthesia to the baby.

During preoperative assessment, risk of massive bleeding, hysterectomy or even death should be explained to the patient and family. Consent for blood transfusion should also be obtained. Use of cell saver with leucocyte filter has been advocated in National Institute for Health & Care Excellence (NICE) guidelines to reduce risks associated with allogenic blood transfusion.

In centres where prophylactic pelvic arterial balloon catheterization is available, it is inserted under local anaesthesia with fluoroscopic guidance in the angio-suite after which patient is sent to operation theatre for caesarean section.

Intraoperatively, minimum of two large bore intravenous cannulas and arterial line can be inserted after induction of general anaesthesia but before the start of surgery. Central line catheter is optional. Some centres advocate large internal jugular vein cannulation preferably under ultrasound guidance. Induction of anaesthesia is not much different from any other pregnant patients who are known to have higher risk of difficult airways, aspiration and awareness compared to general population.

Once fetus is delivered, the balloon arterial catheter would be inflated to reduce risk of PPH. If the placenta is left-in situ oxytocin must not be given to prevent placental separation.

Management of potential massive bleeding as recommended by World Maternal Antifibrinolytic Trial (WOMAN) 2019 involves prophylactic administration of tranexamic acid, an antifibrinolytic agent to reduce massive haemorrhage.

Damage control resuscitation involves limiting the use of crystalloid and colloids and transfusing RBC, FFP and platelets transfusion in a ratio of 1:1:1. Previous studies have shown decreased mortality from multi-organ failure when strategy of damage control resuscitation was used.

Appropriate use of cryoprecipitate and anti-fibrinolytic agents recommends a fibrinogen level of 2-3g/L as opposed to previous recommendation of 1g/L to maintain adequate haemostasis.

Introduction of Factor VIIa Recombinant (NovoSeven) has been proposed as off-label management of PPH in several case reports and case series with successful reduction in haemorrhage in 76-85% of women when used in a dose of 81.5-92mcg/kg. However, it might not be effective in the presence of hypothermia, acidosis or low fibrinogen.

Massive Transfusion Protocol (MTP) should be on the alert in case of any potential massive haemorrhage. The transfusion ratio of RBC: Platelet: FFP should follow 1:1:1 ratio as the above.

Postoperatively patient would be extubated and later observed in High Dependency Unit (HDW) if haemodynamically stable. However, in case of unstable haemodynamic parameters due to massive haemorrhage and its associated complications such as coagulopathy, acidosis and hypothermia, the patient must be admitted to intensive care (ICU) for further resuscitation and monitoring. Decision for embolization should be made immediately by both attending obstetrician and interventional radiologist depending on the severity of the placental invasion.

In the event of massive transfusion, plasma electrolytes should be checked regularly especially assessing for hyperkalaemia, hypomagnesemia, hypocalcaemia and hypechloride. In addition tests for coagulation requires baseline APTT, PT, platelet counts and fibrinogen levels. Unfortunately, none of these tests adequately assess platelet function, factor XIII levels, clot stability or fibrinolytic activity, all of which are abnormalities specific to obstetric patients. Use of thromboelastography and thromboelastometry may improve assessment of overall haemostasis and provide overall information to direct haemostatic therapy.

Good post-operative pain relief is important to encourage faster ambulation and thus promote faster recovery. It is given as multimodal analgesia as combination of patient control analgesia (PCA opioid such as Morphine of fentanyl) and oral analgesic such as Paracetamol, oxycodone and Tramadol. NSAIDS are contraindicated in PPH patient.

The most important part in the delivery planning is the involvement of the patient and her husband in the decision making. This must be on-going and documented in the records. All risks involved and planning to reduce these risks should be made known to the couple.

Process of Delivery

The team performing surgery must be led by a Consultantin O&G. Urologist / surgeon should be informed to standby if placenta percreta is suspected to involve urinary bladder. A gynae-oncologist or other experienced pelvic surgeon can be called in or informed as back up for such surgery.If there is suspected bladder involvement it would be better to stent the ureters and insert a urinary catheter as the urinary bladder may need to be bisected during the hysterectomy.

At least 4 to 6 units of cross-matched blood must be available in the OT prior to commencement of surgery. The massive transfusion protocol should be activated.

The incision on the uterus should be made away from the placenta. Placental 'mapping' should do by ultrasound the day before surgery by the surgeon to guide his incision. As a guide a low transverse skin incision allowing access to the lower half of the uterus can be performed if the upper margin of the anterior aspect of the placenta does not rise into the upper segment of the uterus. If the placenta is anterior and extending toward the level of the umbilicus, a midline skin incision may be needed to allow for a high upper-segment transverse uterine incision above the upper border of the placenta. The opening of the uterus should be by a transverse incision at a distance from the placental bed. Thus, a midline incision is recommended by most authors for PAS disorders diagnosed prenatally or at the time of caesarean delivery.

A classical caesarean incision may be considered if there has already been a decision to perform a hysterectomy or tubal ligation after the caesarean section.

After delivery of the fetus, and only if there is no clinical evidence of placenta percreta (i.e. no placental tissue seen invading through the surface of the uterus), the surgeon may carefully attempt to remove the placenta by a controlled cord traction and the use of uterotonics. Failure to do so suggests the diagnosis of a PAS disorder.

If the placenta fails to separate with the usual measures, leaving it in place and closing, or leaving it in place, closing the uterus and proceeding to a hysterectomy are both associated with less blood loss than trying to separate it.

Ligation of the blood supply such as internal iliac artery ligation can be considered either as a procedure by itself or before hysterectomy is performed. The latter may reduce subsequent blood loss during hysterectomy but is often not beneficial in view of the high number of collateral vessels.

Hysterectomy may be the only definitive way to stem the haemorrhage. The decision must be taken speedily before the onset of massive haemorrhage and cardiovascular instability.

In expectant or medical management, the placenta is left in situ with either no therapy or methotrexate therapy. It should be considered only when the woman wants to preserve her fertility and no active uterine bleeding is present. Conservative management of placenta accreta when the woman is already bleeding is unlikely to be successful and risks wasting valuable time.

Complications of adherent placenta

Maternal:

1. Hysterectomy
    - May range from 0.7% with one previous caesarean delivery to 9.0% with more than 6 caesarean deliveries
2. Injury to bladder 7%–48%
3. Injury to ureter 0–18%
4. Bowel injury/obstruction 2%–4%
5. Large-volume blood transfusions (>10 L) 5%–40%
6. Venous thromboembolism 4%
7. Surgical site infection 18%–32%
8. Reoperation 4%–18%
9. Maternal mortality 1%–7%
10. Admission to intensive care unit 15%–66%

Perinatal:

1. Small for gestational age
2. Prematurity

Care Bundle

It would be prudent to ensure that the care bundle listed below for suspected PAS should be applied in all cases.

The six elements considered to be reflective of good care are:

- Consultant Obstetrician planned and directly supervising delivery
- Consultant Anaesthetist planned and directly supervising anaesthetic at delivery
- Blood and blood products available
- Multidisciplinary involvement in pre-op planning
- Discussion and consent includes possible interventions (such as hysterectomy, leaving the placenta in place and intervention radiology)
- Availability of a critical care bed

Conclusion

PAS is a high risk condition. Good results would only be obtained through a multidisciplinary, planned approach with adequate blood and critical care support. The patient must be fully involved in all steps of the decision making process.

Practice Points

- There must be a high index of suspicion if the risk factors for PAS are present.
- Ultrasound by experienced personnel can lead one to suspect placenta accrete. In some cases, MRI and cystoscopy may be required.
- Experienced obstetrician/maternal–fetal medicine specialist;- For prenatal diagnosis, peripartum, intrapartum, and postpartum management.
- Surgical Expertise for complex surgery (Gynaecologic oncology, pelvic surgeon, urogynaecologist). Skills for retroperitoneal dissection, ureterolysis, internal iliac artery ligation, ureteral stent placement.
- Experienced anaesthesiologist in managing PAS and massive PPH.
- Interventional radiology; For possible placement of intravascular balloons or postoperative selective arterial embolization.
- Cell saver and perfusionists; If available, may be cost-effective depending on frequency of transfusion of allogenic blood.
- Delivery must be planned in a centre with staff and facilities that are required for a patient with a suspected adherent placenta.
- Multidisciplinary involvement and planning is crucial for optimum outcomes.
- The patient must be fully aware of the risks and the surgical approach planned for her. This must be adequately documented.

- Placental mapping must be done before surgery is performed.
- A classical incision and hysterectomy with the placenta in situ can be considered in suitable cases.
- The uterine closure has little influence on uterine scar healing and thus less impact on PAS disorders than emergent versus elective caesarean delivery.
- The placenta can be left behind in some cases of PAS.
- Adequate blood and blood products should be available in the operation theatre.
- Close monitoring in the post-operative period either in a HDU or ICU.
- Post-operative pain management as part of a complete care plan.
- Follow-up care must be planned by the O&G specialists.

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APPENDIX 1

Recommendations for prenatal diagnosis and screening of placenta accreta spectrum (PAS) disorders

Recommendations	Resource Settings	Quality of Evidence and Strength of Recommendation
Ultrasonography is a relatively inexpensive and widely available imaging modality and therefore should be the first line for the diagnosis of PAS disorders	All	High and Strong
Women diagnosed with caesarean scar pregnancy in the first trimester should be counselled regarding the high risk of requiring a hysterectomy owing to PAS disorders. They should be followed up by the most experienced operator available, preferably one with expertise in diagnosis of PAS disorders	All	High and Strong
At the mid-trimester examination for fetal anomaly, all women should be asked if they have had a previous caesarean delivery. If so, this should prompt careful assessment of the placental implantation site especially if it is anterior, low lying, or previa	All	Medium and Strong
The ultrasound signs observed for the diagnosis of PAS disorders should be described using standardized protocols	All	Medium and Strong
The recorded presence or absence of each ultrasound sign will be influenced by the operator's interpretation of what constitutes that marker	All	High and Strong
MRI is not essential for making a prenatal diagnosis of suspected PAS disorders but may be useful in evaluating the pelvic extension of a placenta percreta or areas difficult to evaluate on ultrasound	High-income	Medium and Weak

APPENDIX 2

Recommendations for conservative management of placenta accreta spectrum (PAS) disorders

Recommendations	Resource Settings	Quality of Evidence and Strength of Recommendation
Leaving the placenta in situ is an option for women who desire to preserve their fertility and agree to continuous long-term monitoring in centres with adequate expertise	High	High Moderate and Strong
The extirpative approach or forcible manual removal of the placenta should be abandoned	All	High and Strong
When a conservative treatment is attempted in cases of PAS disorders diagnosed prenatally, the exact position of the placenta should be confirmed by a preoperative ultrasound and the equipment and expert surgical team should be on stand-by for an emergent hysterectomy	High	Moderate and Strong
After the delivery of the fetus, and only in cases with no clinical evidence of invasive PAS disorders, the surgeon may carefully attempt to remove the placenta by controlled cord traction and the use of uterotonics	All Low and Strong	All Low and Strong
Postoperative antibiotic therapy (amoxicillin and clavulanic acid or clindamycin in case of penicillin allergy)should be administered prophylactically to minimize the risk of infection when the placenta is left in situ	High Low and Weak	High Low and Weak
The use of methotrexate is not recommended until further evidence is available on its efficacy and safety	High	Moderate and Strong
Preventive surgical or radiological uterine devascularisation is not recommended routinely	High	Low and Weak
There is insufficient evidence to recommend the use of magnetic resonance imaging and/or measuring serum β-hCG for the monitoring of conservative management cases	High	Low and Weak
Women who want another pregnancy should be advised that the recurrence risk of PAS disorders is high	All	High and Strong
The one-step conservative surgery is less reproducible than other conservative management approaches, mainly because the efficacy of haemostasis is operator dependent	High	Low and Weak

APPENDIX 3

Recommendations for the surgical non conservative management of placenta accreta spectrum (PAS) disorder

Recommendations	Resource Settings	Quality of Evidence and Strength of Recommendation
Women presenting with PAS disorders with or without placenta previa should have their delivery scheduled in a Centre of Excellence with a dedicated multidisciplinary team and care plan	High	Moderate and Strong
The care plan for women with PAS disorders should include logistic support for access to blood products, capacity to perform complex pelvic surgery, intensive care facilities (adult and neonatal) and obstetric anaesthetists	High	Moderate and Strong
Surgical expertise in complex pelvic surgery should be available throughout the surgical procedure	All	Moderate and Strong
Where available, tranexamic acid should be administered (1 g slow IV or 1000–1300 mg orally) immediately prior to or during caesarean delivery for PAS disorders	All	High and Strong
In the absence of spontaneous placental separation, the placenta should be left in situ to minimize blood loss during planned immediate caesarean hysterectomy and uterotonics should not be used	All	Moderate and Strong
Total hysterectomy with placenta in situ is preferred over subtotal hysterectomy in cases of placenta previa increta or percreta	All	Low and Strong
In cases of placenta percreta with extensive pelvic invasion, delayed hysterectomy with placenta in situ may be considered	High	Low and Weak

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