TOWARDS SAFER OBSTETRIC PRACTICES

CASE ILLUSTRATION ON MATERNAL DEATH 1/2021

MISMANAGEMENT OF SECOND TRIMESTER MISCARRIAGE

KEMENTERIAN KESIHATAN MALAYSIA

CASE SUMMARY

A 37 years old Gravida 4 Para 2+1 with 1 previous LSCS, followed by vaginal birth. Her antenatal visits were uneventful. At 18 weeks, she presented to hospital with feeling of mass per vagina during defecation. She has no signs or symptoms of labour. Her BP was 116-135/68 mmHg, HR 80/min, RR 20/min and temperature 37°C. Vaginal examination revealed the os was 3cm with bulging membrane. Ultrasound confirmed a viable fetus in breech presentation and fetal biometry was corresponding to date. A diagnosis of inevitable miscarriage was made and she was admitted. She remained asymptomatic the following two days.

On day 3, patient was started on IV Ampicillin as she complained of leaking liquor. However, vaginal examination did not confirm this. Her antibiotic was changed to T. Cephalexin the following day. On day 4, she was sent to the ward for conservative management and to be nursed in Trendenlenburg position. However, T. Cephalexin was ceased, when her urine C&S results showed no evidence of UTI. She was started on IV Ampicillin when her HVS C&S grew Group B Streptococcus. The plan was to consider for rescue cervical cerclage after eradication Group B Streptococcus infection.

On day 5, vaginal examination revealed the os was 5cm and fetal leg was palpable within the membrane. Patient was sent to labour room for Pitocin augmentation of labour. Artifial ruptured of membrane was performed with the aim to hasten labour. Clear liquor was noted. IV Syntocinon 10units was also commenced and titrated to maximum dose. It was ceased after six hours as she did not abort. First Prostin 3mg was inserted. Her BP was 119-129/73-83 mmHg, HR 76-89/min, RR 20/min and temperature 37°C.

On day 6, 2nd Prostin was inserted as cervix was unfavorable. However, it also failed. Patient was planned for Cervagem the next day. Later that night, she complained of chills and rigors. Her BP was 146/86 mmHg, HR 133/min and temperature 39.8°C. Vaginal examination revealed os was 3cm, fetal parts were felt with meconium stained liquor. Impression was sepsis. Antibiotic was escalated to IV Cefuroxime and septic workout performed. IV fluid resuscitation was commenced.

On day 7 admission at 0330H, patient complained of breathlessness. She was alert but lethargic, BP was 107/67mmHg, HR 107/min, RR 20/min and temperature 36.6°C. Chest auscultation revealed decreased air entry over right lower zone. Chest X-ray showed clear lung field. VE showed os 3cm, POC felt at os. Cervagem was inserted to evacuate source of infection. Impression was **Severe Sepsis Secondary** to Chorioamnionitis. Antibiotic was further escalated to IV Tazocin.

Soon after Cervagem inserted, patient was tachypnea on HFM 5L/min, BP was reduced to 92/96mmHg, HR 96/min, temperature 36°C and dextrostix 1.7mmol/L (hypoglycemia). She was given 20ml IV D50% and referred to anesthesia team in view of metabolic acidosis and tachypnea. When anesthesia team was reviewing her, she complained of contraction pain. She was still alert but appeared lethargic. BP was 112/83mmHg, HR 95/min, RR 24/min, CRT less than 2 sec, temperature 36°C and SPO2 100% on high flow mask 5L/min. She was resuscitated with IV fluids (6 pints over 6 hours) as urine output was reduced.

On day 8, patient was transferred to HDW promptly as there was no urine output. Her BP was 100/69mmHg, HR 91/min, RR 24/min and temperature 39°C. Dextrostix was 2.2mmol/L and she was given another 40 ml D50%. She aborted and was seen by O&G team. She was posted for ERPOC as it was an incomplete miscarriage. While in the operation theatre (OT), she expelled a complete placenta. Total blood loss was 250mL. In the OT, her BP was 56-105/30-62mmHg, with HR 107-119/min. She was given IV Pitocin 40U over 6 hours, IV Phenylephrine 100mcg for 2 doses, IV Fentanyl 25mcg and IV Ganisetron.

Patient was transferred back to HDW from OT. She became increasingly restless on 5L/min oxygen. MAP was 90, HR 108/min, SPO2 95% and GCS 13/15. She was not obeying commands and peripheries were cold with feeble peripheral pulse. She was immediately seen by O&G team and examination revealed no active bleeding with uterus well contracted. Ultrasound showed uterine lining intact, minimal fluid at Pouch of Douglas and no free fluid at Pouch of Morrison. ABG revealed severe metabolic acidosis (pH 6.803, HCO3 4.6 and Lactate 22). FBC: HB 9.2, TWC 11.5 and Platelet count was 19000. Massive Transfusion Protocol was activated and patient was intubated.

Post intubation, BP was unrecordable, PR was tachycardia and SPO2 was 100%. She was resuscitated with IV Gelafundin, IV Sodium Bicarbonate, IV Adrenaline, IV Calcium gluconate and 2 inotropes. However, she remained persistently hypotensive. IV Vasopressin added, however she still remained hypotensive and went into pulseless electrical activity. Despite multiple cycle of CPR, she succumbed on day 7 admission. Posthumous, blood and placenta swab C&S grew ESBL E. Coli. Urine C&S had no growth.

Cause of death: Extended Spectrum Beta-Lactamase (ESBL) E. Coli Septicemia

DISCUSSION

This is defined as a loss (miscarriage or termination for fetal abnormality) after the 12th and before the 22th completed week of pregnancy (13+0 weeks to 21+6 weeks).[1]

This is a case of an inevitable miscarriage at 18 weeks. The spontaneous expulsion of fetus is the natural process. This case had unnecessary interventions which were not in keeping with the standard practice for obstetric care. These unnecessary interventions have resulted in iatrogenic infection which the patient finally succumbed.

Conventionally, the management of this case should be watchful wait. Invariably, the natural process would be expulsion of product of conception. If this did not occur and there was a need to intervene for maternal condition, the use of Gamesprost (prostaglandin E1) pessary would have been the drug of choice to get the "labour" process started. In view the uterus is small, the response to Prostagandin E2 may not be optimum; hence the use of Prostin may not be suitable in the case. High dose oxytocin infusion has been documented as a drug that can be used but it should be reserved only when the cervical os is ripened (open). In this case low dose Oxytocin was used.[2]

Literature search revealed numerous reports on modalities used for termination of second trimester miscarriage. Common drug used globally is Misoprostol and Mifepristone. However, these two drugs are not licensed in Malaysia.

Gemeprost has similar outcomes as compared to misoprostol. However, it has higher cost, requires refrigeration and can only be used vaginally. High-dose Oxytocin can be used in circumstances when Prostaglandins are not available or are contraindicated. Oxytocin can be used in doses that are much higher than those used for term induction. Higher doses are needed because of the relative paucity of oxytocin receptors early in gestation. Oxytocin alters the characteristics of uterine contractions by increasing contraction frequency, baseline tone (transiently) and contraction amplitude (strength).[2]

If the membranes are ruptured, digital vaginal examination should be avoided to minimize the risk of ascending infection. If the cervix needs to be assessed with a view to induction, vaginal examination in the presence of ruptured membranes should be deferred until induction so that the examination to delivery interval is minimized.

There was no indication for artificial rupture of membrane. This was the likely source for introduction of infection and maternal septicemia. In addition, she already showed signs of sepsis on day 6, the delivery process should have been expedited whatever the mode. In this case, expectant or medical management was adopted for too long where sepsis had become overwhelming (anuria, hypoglycaemia, metabolic acidosis, coagulopathy) and irreversible. Fetus was only expelled after more than 48 hours after showing signs of sepsis.

LESSON LEARN

The management of this case should have been a watchful wait (expectant management). The practice of induction of miscarriage was not justified in this case as there was no sign of infection. The choices of drugs used for the process of induction were not in keeping with standard practice globally. The use of Prostin (Prostaglandin E2) and low dose Oxytocin may not be suitable. Creating a Guideline for the Management of Second Trimester Miscarriage in the Ministry of Health would assist in the management of such cases in the future.

REFERENCES

1. NW Second Trimester Pregnancy Loss Guideline_V2 March 2018.

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PREPARED BY:

1. **Datuk Dr. Tham Seng Woh**
   Senior Consultant and Head of O&G Department, Hospital Melaka

2. **Dr. Sharmini Diana Parampalam**
   Senior Consultant and Head of O&G Department, Hospital Pulau Pinang