



Timely Anaesthetic Intervention, Improves Feto-Maternal Outcome after Severe Abruptio Placenta- A Case Report

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Abstract

Timely anaesthetic intervention is key to a favourable outcome in the management of severe abruption placenta and reducing fetal heart rate. We report a case of severe abruption placenta and deteriorating maternal and fetal haemodynamic parameter requiring emergency caesarean section.

Keyword: *Timely Anaesthetic, Intervention, Severe, Abruptio.*

Introduction

The goal of anaesthetic intervention in the management of severe abruptio placenta with deteriorating haemodynamics includes rapid restoration of blood volume and immediate delivery of the fetus and placenta through the fastest anaesthetic technique^{1,2,5}. Abruptio placenta refers to premature separation of normally implanted placenta from the uterus partially or completely before delivery^{2,8}. It is a leading cause of morbidity and mortality for both

mother and fetus^{3,8,11}. We report here how timely anaesthetic intervention improved fetal and maternal outcome.

Case Report

A case of 31 year old gravida 5 para 4⁺⁰, 2 alive woman (WT- 81kg HT- 5.5m) at estimated gestational age of 37 weeks presented to NAUTH labour ward on account of sudden severe abdominal pain and massive vaginal bleeding. Obstetrics review revealed severe abruption

placenta with shock. The blood pressure was 80/45mmHg. Pulse of 135 beat per minute, trendy and with poor volume. SpO₂ was 88% but improved to 92% with supplemental oxygen.

Abdomen was uniformly enlarged, tender with board like rigidity. Fetal heart rate fluctuating between 100 and 120 beat per minute. Resuscitation was commenced by the combined team of Anaesthesiologists and Obstetrics teams. Two wide bore cannular (16 and 18) were used to secure intravenous access, urgent packed cell volume revealed 24% while bedside clothing profile appeared normal. Other investigation including urgent full blood count, blood chemistry, serum urea, electrolyte and creatinine were being awaited. Patient relation was counseled for general Anaesthesia and informed consent obtained. Resuscitation was continued as patient was been transported to the theatre in left lateral position with high flow supplemental oxygen by face mask. The haematologist was invited and 4 units of grouped and cross-matched fresh whole blood were immediately available and one commenced before induction of anaesthesia.

A quick equipment check was done followed by administration of 50mg Ranitidine and 10mg metochlopramide intravenously. Modified rapid sequence Anaesthesia was induced with 100mg of ketamine in left lateral position with a view to improve the venous return and prevent further circulatory impairment. Cricoid pressure was applied by an assistant thereafter a size 7mm internal diameter tracheal tube preloaded with gum elastic bougie was inserted to secure the airway facilitated by 75mg of suxamethonium and correct placement of the tube was confirmed by auscultation and capnography. Anaesthesia was maintained with aliquot of 20mg of ketamine given intermittently throughout the surgery and patient was manually ventilated using 100% oxygen. 1g of intravenous paracetamol and 100mg Tramadol were given for analgesia.

Within seven minutes from the time of induction of anaesthesia a live male baby was delivered weighing 3.0kg with an apgar's score of 4 and 8 at

1 and 5 minutes respectively. She received 3 units of fresh whole blood, colloid and crystalloids due to significant blood loss. The haemodynamic changes improved towards the end of the surgery and in the early post operative period. The third stage of labour was managed with 10 international units (iu) of oxytocin bolus, 20iu of oxytocin in 1000mls of normal saline infusion and 1mg ergot. Surgery lasted for 90 minutes, she was recovered from anaesthesia, tracheal tube extubated and closely monitored for about 4-6 hours in the post anaesthesia care unit (PACU). Patient was subsequently discharged home with her baby after 10 days.

Discussion

Challenges often encountered during induction of general anaesthesia in pregnant women include potentially difficult airway, aspiration pneumonitis, cardiovascular instability following aorta-caval syndrome²⁻⁴ etc. The risk of these complications increases in emergency situation therefore timely anaesthetic intervention with early securing of the airway is key⁵⁻⁶. Video laryngoscopy may just be the instrument of choice because of ease of application with better view of the laryngeal structures however this equipment is not readily available in a low resource setting as ours⁷. In order to obviate the increased risk of failed tracheal intubation or multiple attempts with the traditional laryngoscopy especially in emergency situation and left lateral position, we decided to preload the tracheal tube with the gum elastic bougie. As soon as the bougie enters the trachea evidenced by the feel of tracheal rings, the tube is railroaded in.

Abruptio placenta refers to premature separation of the normally implanted placenta from 24 weeks of gestation to the delivery of the baby⁸. It is one of the obstetrics emergencies with a leading cause of morbidity and mortality for both the mother and baby globally⁸⁻¹⁰. The specific aetiology is unknown but there are associated factors including Pregnancy Induced Hypertension (PIH), advanced maternal age, polyhydraminous,

anaemia, gestational diabetes, premature labour, premature rupture of membranes, chorioamionitis, oligohydraminous, short umbilical cord, maternal alcohol syndrome, immunodeficiency and trauma⁹⁻¹².

The incidence of abruptio placenta in the developing countries is 2 in every 100 deliveries and 1 in every 200 deliveries in the United States of America¹⁰. The maternal and perinatal mortality is about 1.8-2.8% and 30-40% respectively. Twenty percent (20%) of moderate to severe case of abruptio is complicated with coagulation disorders^{10,12}.

The management of severe abruptio placenta like the case under review requires a multidisciplinary approach incorporating the anaesthesiologists, obstetrician, neonatologists and haematologist. The anaesthesiologist will be responsible to ensuring stable cardio-pulmonary parameters through careful maintenance of the blood volume and provision of the fastest anaesthetic technique that will facilitate immediate delivery of the fetus and the placenta¹¹⁻¹².

Modified rapid sequence general anaesthesia with special skill in quickly maneuvering the tracheal tube laden with bougie is a technique of choice where video laryngoscope is absent with patient lying in lateral position on the background of severe bleeding because the airway must be secured timely as well as other haemodynamic variables which are controlled better with this technique.

Our decision was in tandem with many international protocols for the management of obstetrics haemorrhage¹⁰. Some authors advocated that regional anaesthesia may significantly reduce bleeding through sympathetic blockade of the vessels in conditions where the coagulation parameters were normal⁹⁻¹⁰. This could not be used because the case under review presented in hypovolemic shock and regional technique may worsen the outcome. Inhalation agents were also not used in this case because of their propensity to cause cardiopulmonary depression thereby complicating the poor haemodynamic reserve.

Conclusion

Our result showed that timely intervention with a multidisciplinary team approach of anaesthesiologists, obstetrician, neonatologists and haematologists was fundamental to the overall well being of the mother and baby. Modified rapid sequence anaesthesia and intubation using tracheal tube preloaded with bougie in left lateral position is a veritable skill needed by every anaesthesiologists involved in obstetric care.

Conflict of interest: None

References

1. Agastic T.K. Textbook of Anesthesia for Postgraduate First Edition: by in JP medical Ltd, 2011:974.
2. Ducloy, A.S, Lee J, Obstetric Anaesthesia-Placental abruptio, Updates in Anaesthesia, 2002 (14):17;1
3. Yeo L, Ananth C, *et al*, placental abruptio. Glob libr Women's Med, 2008;10:3843.
4. Murugam T, Bleeding ipaturrent-Anaesthesia management
5. Practice guidelines for Obstetrics Anaesthesia, Updated report by American society of Anesthesiologist. Anesthesiology 2007;106:843-863.
6. Philips JM, Evans JA, Acute anesthetic and Obstetric management of patient with severe abruptio placenta. Anaesth Analg 1970;49(6).998-1006.
7. Kenta N, Nobuyasu K, Yusuke K, Toshiaku M. Rapid-Sequence Intubation in the left lateral Tilt Position in Pregnant Woman with Premature Placental Abruptio Utilizing Videolaryngoscope. AJP 2015;5(1):30-32
8. Walfish M, Neuman A, Wlody D, Maternal haemorrhage. Br J Anaesth 2009: 103(1); 147-15.
9. H SK, PIC, unrecognized abruptio in rural Nigerian woman. A case for early referral and intervention. The internet

Journal of gynaecology and obstetrics.
2009 (14):2.

10. Bates J, Obstetric emergencies for every provider. *Anaesthesia* 2013: 1-17.
11. Adigun TA, Eyelade O, Choice of Anesthetic technique for delivery of pregnancy complicated by placenta previa in Ibadan. *J Anesth Clin Res* 2012;3:205, doi. 10.4172/2153-614:10002.
12. Abbasi MR, Rizwan N, Mumtaz F, Farooq S, Fetomaternal outcome among Abruptio placenta at a university Hospital of Sindh. *Journal of Liaguart university of health and medical sciences JLUMHS* 2008.