SJIF Impact Factor: 6.711

WORLD JOURNAL OF ADVANCE HEALTHCARE RESEARCH

ISSN: 2457-0400
Volume: 8.
Issue: 12
Page N. 67-69
Year: 2024

Case Report www.wjahr.com

ANESTHESIA MANAGEMENT OF POSTPARTUM HEMORRHAGE AFTER NORMAL DELIVERY – A CASE REPORT

Dr. Amit Yashwantrao Bodkhe[1]*, Dr. Soha Abdelgadir Yassin Nasr[2], Dr. Mahesh Santhemavathur Bettaiah[3], Dr. Sanjana Subhash[4], Dr. Mamatha Paturu[5] and Dr. Shafeek Acharath Kunhavaran[6]

[1]Consultant & HOD Anesthesia. Millennium Hospital, Abu Dhabi, U.A.E.
[2]Consultant Obstetrician & Gynecologist. Millennium Hospital, Abu Dhabi, U.A.E.
[3,4,5,6]Specialist Anesthesia. Millennium Hospital, Abu Dhabi, U.A.E.

Article Received date: 08 October 2024 **Article Revised date:** 27 October 2024 **Article Accepted date:** 17 November 2024

***Corresponding Author: Dr. Amit Yashwantrao Bodkhe**
Consultant & HOD Anesthesia. Millennium Hospital, Abu Dhabi, U.A.E.

ABSTRACT
Advanced age and multigravida are two independent risk factors for Postpartum hemorrhage (PPH). We present a 50-year-old multigravida patient underwent normal vaginal delivery developed primary PPH due to atonic uterus. She was explored in the operation theatre and hemostasis was achieved with vaginal packing and balloon tamponade method. Total blood loss was around two litres. Hemodynamics was restored with intravascular fluids, vasoconstrictors, blood and blood products transfusion.

KEYWORDS: Atonic uterus, postpartum hemorrhage, primary postpartum hemorrhage.

INTRODUCTION

Severe bleeding due to Postpartum hemorrhage (PPH) is the leading cause of maternal morbidity worldwide. Blood loss more than 500 ml during and 1000 ml during cesarean section is defined as PPH. This definition evolved currently to blood loss of 1000 ml or more with associated signs or symptoms of hypovolemia during any mode of delivery.[1] Primary PPH occurs during the first 24 hours of delivery. Identification of the risk factors and early intervention can result into good outcome. This case report describes the successful management of primary PPH which was caused by atonic uterus.

CASE REPORT

A lady with advanced maternal age, 50 years with 38 weeks gestation was admitted for normal delivery. She was gravida five and para two with 90 kg weight and a known case of gestational diabetes mellitus on Insulin and Metformin. She was asthmatic but not on regular treatment. She delivered 3.57 kilo gram female baby vaginally. Placenta and membrane were delivered uneventfully. There was first degree perineal tear during the vaginal birth. This was sutured by the Gynecologist in the labor room and active management of third stage of labor was done. The uterus was atonic hence there was continuous bleeding. Uterine massage was started immediately. Simultaneously, intramuscular Methergine 0.2 mg and intravenous (IV) Oxytocin 10 units given slowly over the period of two minutes followed by infusion. IV Tranexamic acid one gram was also started. Ultrasonographic (USG) scanning revealed uterine clots in the lower segment.

In view of uncontrolled postpartum hemorrhage, patient was shifted to operation theatre for exploration under anesthesia. Patient and relatives were explained about the condition and written informed consent was taken. Simultaneously blood bank was notified anticipating further blood loss. Patient was adequately fasting. General Anesthesia with invasive monitoring was planned. Patient lost almost one liter of blood in labor room.

Routine monitor was connected showing baseline blood pressure was around 100/60 mmHg, heart rate around 120 beats per minute. There was increase variability on Plethysmography. Her baseline hemoglobin was 9.6 g/dl. Rapid infusion of crystalloid fluid was started through wide bore 18gauge peripheral venous cannula.

Under all aseptic precautions right radial artery was cannulated and transduced for arterial blood pressure monitoring.

Patient was pre medicated with IV Glycopyrrolate 0.2 mg, IV Ondansetron 8 mg and IV Midazolam 2mg. This

was followed by IV Fentanyl 100 micrograms. She was pre oxygenated and induced with IV Etomidate 12 mg. After adequate relaxation with IV Succinylcholine 100 mg, trachea was intubated with 7.0 cuff endotracheal tube. After confirmation of adequate ventilation, she was put on volume control mode of ventilator with tidal volume 520 ml, respiratory rate 14 per min and positive end expiratory pressure of 5 mmHg. She was maintained on Oxygen: N2O (1:1) and Sevoflurane to maintain the adequate MAC. Muscle relaxation was maintained with IV Cis-atracurium 12 mg and later maintenance doses. Hemodynamics was well maintained during induction and intubation.

Right internal jugular vein was cannulated with triple lumen catheter under ultrasonography guidance and transduce to measure central venous pressure (CVP). IV fluids connected to other lumens and CVP was noted around 5-6 mmHg.

Patient was placed in the lithotomy position. Vulva, vagina and cervix were explored and there was no bleeding from the present tear nor any other additional tear. Clots were evacuated completely and bimanual examination of uterus revealed no retain products. This was confirmed on intraoperative USG scanning. She lost approximately another one liter of blood in operation theatre. Bimanual uterine compression done, Bakri balloon was inserted for tamponade effect and vaginal packing was done. This maneuver stopped the bleeding. Thus, total blood loss was around two liters. There was intermittent episode of hypotension which was managed timely with rapid infusion of 3.5liter crystalloid fluid, two units of group specific packed cells and Phenylephrine infusion. There was increasing trend of CVP and adequate clear urine output. At the end of surgery, patient was maintaining vitals parameter with no vasoconstrictor support. There was good oxygenation and no metabolic derangement on arterial blood gas report. She was reversed with IV Neostigmine 2.5 mg and IV Glycopyrrolate 0.4 mg and extubated uneventfully. She was conscious and well oriented.

She was shifted to Intensive Care Unit (ICU) on Oxygen mask. Her postoperative hemoglobin level was dropped to 8.8g/dl so she was transfused with two more units of packed cells and four units of fresh frozen plasma over next 24 hours. On next day her hemogram and coagulation profile was normal. Bakri balloon and vaginal pack was removed. There was no vaginal bleeding. Rest of her stay in ICU and hospital was uneventful and discharged home on fifth postoperative day.

DISCUSSION

Postpartum hemorrhage (PPH) is the leading cause of obstetric morbidity and mortality worldwide, accounting for approximately 1% to 3% of all deliveries.[2] It is characterized by excessive blood loss after delivery and can lead to severe complications if untreated. Hemostasis depends on the uterine contractions which causes mechanical squeezing of musculature deficient spiral arteries.[3] In our case it was primary PPH as it started immediately after birth. Trauma and tone were the two suspected causes as there was perineal tear during delivery. Multigravida and advanced maternal age are known risk factors for PPH which were associated in this case.[4,5] Blood loss more than 500 ml is abnormal during normal vaginal delivery and there is potential need for intervention.[6,7,8]

A rapid assessment of the entire lower genital tract, including vaginal walls, cervix, and labia, for lacerations, hematomas, or signs of uterine rupture should be performed.[9,10] There was no other laceration or trauma. Examination revealed atonic uterus as the source of bleeding. Uterine atony is a principal cause of postpartum hemorrhage, an obstetric emergency. Quantification of blood loss is recommended with the involvement of multidisciplinary team. Blood loss in the labor room should be accounted to intra operative blood loss. Simultaneously, rapid crystalloids or colloids IV fluids and vasoconstrictors should be administered through large venous access. Invasive monitoring like CVP line and arterial line is indicated as per the severity of PPH. Signs of hypovolemia and blood loss more than 1000 ml categorized our case as severe PPH.[9] We opted invasive monitoring anticipating the further blood loss and severity of the PPH.

Roller gauze packs were used originally but now balloon tamponade is the most favored uterine packing procedure. This is one of the first steps in PPH management which is rapid, least invasive and devoid of significant complications. This technique not only arrests the bleeding but allows obstetrician to identify the requirement of further surgical intervention.[11,12]

There are more invasive procedures like arterial embolization, surgical arterial ligation and hysterectomy. These procedures should not be delayed if patient continue to bleed.

CONCLUSION

The successful management of PPH requires a multidisciplinary team approach. Anesthesiologists play a vital role in ensuring adequate resuscitation when Obstetrician is busy in operative management. Vigilance and early intervention with aggressive approach reduce the morbidity and mortality.

REFERENCES

1. Wormer KC, Jamil RT, Bryant SB. Postpartum Hemorrhage. [Updated 2024 Jul 19]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing, 2024 Jan. Available from: https://www.ncbi.nlm.nih.gov/books /NBK499988/
2. Corbetta-Rastelli CM, Friedman AM, Sobhani NC, Arditi B, Goffman D, Wen T. Postpartum Hemorrhage Trends and Outcomes in the United

States, 2000-2019. Obstet Gynecol., 2023 Jan 01; 141(1): 152-161. [PubMed]
3. Gill P, Patel A, Van Hook JW. Uterine Atony. [Updated 2023 Jul 4]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing, 2024 Jan. Available from: https://www.ncbi.nlm.nih.gov/books/NBK493238/
4. Mesfin S, Dheresa M, Fagesg, Tuna AK, Assessment of Postpatrum Hemorrhage in a University Hospital in Eastern Ethiopia: A Cross-Sextional Study. *Int J Women's Health.*, 2021; 13: 663-669. https://doi.org/10.2147/IJWH.S300143
5. Pubu ZM, Bianba ZM, Yang G, CyRen LM, Pubu DJ, Suo Lang KZ, Zhen B, Zhaxi QZ, Nyma ZG. Factors Affecting the Risk of Postpartum Hemorrhage in Pregnant Women in Tibet Health Facilities. Med Sci Monit., 2021 Feb 13; 27: e928568. doi: 10.12659/MSM.928568. PMID: 33579890; PMCID: PMC7887994.
6. Lin L, Chen YH, Sun W, Gong JJ, Li P, Chen JJ, Yan H, Ren LW, Chen DJ. Risk factors of obstetric admissions to the intensive care unit: An 8-year retrospective study. Medicine (Baltimore)., 2019 Mar; 98(11): e14835. [PMC free article] [PubMed]
7. Changede P, Chavan N, Raj N, Gupta P. An Observational Study to Evaluate the Maternal and Foetal Outcomes in Pregnancies Complicated with Jaundice. J Obstet Gynaecol India., 2019 Feb; 69(1): 31-36. [PMC free article] [PubMed]
8. Joseph CM, Bhatia G, Abraham V, Dhar T. Obstetric admissions to tertiary level intensive care unit - Prevalence, clinical characteristics and outcomes. Indian J Anaesth, 2018 Dec; 62(12): 940-944. [PMC free article] [PubMed]
9. Muñoz M, Stensballe J, Ducloy-Bouthors AS, Bonnet MP, De Robertis E, Fornet I, Goffinet F, Hofer S, Holzgreve W, Manrique S, Nizard J, Christory F, Samama CM, Hardy JF. Patient blood management in obstetrics: prevention and treatment of postpartum haemorrhage. A NATA consensus statement. Blood Transfus, 2019 Mar; 17(2): 112-136. [PMC free article] [PubMed]
10. Evensen A, Anderson JM, Fontaine P. Postpartum Hemorrhage: Prevention and Treatment. Am Fam Physician., 2017 Apr 01; 95(7): 442-449. [PubMed]
11. Doumouchtsis SK, Papageoghiou AT, Arulkumaran S. Systematic review of conservative management of postpartum hemorrhage: what to do when medical treatment fails, Obstet Gynecol Surv, 2007; 62: 540-7.
12. Mayor DC, Smith KA. Chestnut's Obstetric Anaesthesia Principles and Practice, 4th Edn. Missouri: Elsevier Mosby, 2009; 825-30.