

Short Communication

Post Partum Hemorrhage: A Case Report of Successful Management via Conservative Surgery

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Abstract

Postpartum hemorrhage is an obstetric emergency. Conservative management of hemorrhage is gaining popularity. Initial management consists of uterotonic administration but in cases of failure of response to medication, uterine cavity tamponade can be effective. The balloon is an alternative method to the surgery approach. The authors describe a case which a uterine tamponade with Bakri balloon successfully used to control postpartum hemorrhage after a cesarean delivery, in a 41 years old woman, in her third pregnancy. A Bakri balloon was placed transvaginally and inflated with 400 ml of saline. Atony and post partum hemorrhage were resolved.

ABBREVIATIONS

PPH: Post partum hemorrhage

INTRODUCTION

Post partum hemorrhage (PPH) is commonly defined as blood loss of more than 500 mL following vaginal delivery or more than 1000 ml following cesarean delivery, and it occurs with a frequency of around 5% [1]. PPH is a major cause of pregnancy related death in both developed and non developed countries and, in addition, is the highest cause of obstetric disease specific morbidity [2-4]. Several risk factors for PPH are known such as multiple pregnancy, operative delivery and chorioamnionitis [1], however PPH may occur among patient with no known risk factors. Our ability to reduce the risk of PPH depends on ongoing investigations of previously unaccounted for causes and risk factors.

The leading cause is uterine atony, up of 80% of the causes result from suboptimal contraction of the myometrium following placental separation, but the incidence of atony has been reduced by intrapartum care by active management with oxytocin [5-7]. Retained placental tissue, genital tract trauma (vaginal and cervical laceration), uterine rupture or maternal coagulation disorders also results in PPH. The recommendation is a stepwise approach to management of PPH from less invasive therapy like uterine massage and uterotonic drugs to more invasive one like uterine arteries embolization, uterine compression sutures, uterine artery ligation and hysterectomy in case of

failure of conservative management, which may be associated with further blood loss and additional morbidity [8-9]. Recently intrauterine balloon tamponade is an effective intermediate, fertility sparing therapy option that can be used in any situation which hemorrhage should be conservatively managed. Multiple type of balloon are available but Bakri balloon is specifically designed for postpartum intrauterine tamponade and is the only device approved by US Food and Drugs Administration for this application [10]. The Bakri balloon has become an integral part of the "HEMOSTASIS" management algorithm advocated in the UK [8,11].

CASE PRESENTATION

We report a case of a 41 years old woman. It was her third pregnancy: in the 2013 an urgent cesarean section, at 32 weeks, for preeclampsia and uterine artery's flow alteration, the placenta had posterior localization; the baby was female, with birth weight of 1300 gr. In the 2015 the woman had an abortion. On her medical history she had a controlled hypertension during all the pregnancy.

The patient was admitted for the first time to the present department due to an increased blood pressure, at 28+6 weeks' gestation, treated with drugs. The ultrasound examinations of the three trimester were normal and the thickness of the lower uterine segment was of 2.5 mm (cut-off 2.0-3.5mm) and the myometrium was of 1.6 mm (cut-off 1.4-2.0) [12].

At 36+4 weeks she referred to our obstetric department with

irregular uterine contractions and a cervix dilation of 1 cm. She had a blood pressure of 130/80 mmHg and a pulse rate of 78/min. Placenta was anterior and with normal insertion, no vasa previa. CTG was normal. After 30 minutes an emergency cesarean was performed because of initial labor in fetus in breech position, in woman with hypertension. Blood was taken for hemoglobin and grouping and cross matching.

Entering in abdominal cavity the authors noted a dehiscence at previous cesarean section. A male baby was delivered and he weighed 2600 gram and had 5 and 10 minute Apgar score of 10. After fetal extraction, the placenta was removed difficulty because of a lateral left part of the placenta was tenaciously adherent to uterine wall. At macroscopic examination appear to be accreta; histological examination was done and the result was of 5 % of placental infarction.

Following repair of lower segment, an uterine bleeding occurred while oxytocin (the prophylactic dose: 10 UI of Syntocinon intravenous in 250 cc of physiological solution and the therapeutic dose: 20 UI intravenous in 250 cc of physiological solution) and carbetocin (1 ml of Duratocin that contains 100 microgram of carbetocin) were administered. It was reached a first hemostasis' control. Uterus appeared contract and the vaginal loss stopped with an amount of 1100 cc. Soon after the open wound was closed, uterus appeared flabby and 5 misoprostol's tablets intrarectal (Cytotec 200 mg) and 1 gram in 100 cc of physiological solution intravenous of tranexamic acid were administrated. The intra-procedure control of hemoglobin showed a value of 7.9 g/dl. Hemorrhage continued so for its management Bakry balloon was placed through vaginal way, filled with 400 cc of saline, under sonographic guide and a vaginal swab was placed. The bleeding stopped briefly. Total amount of lost was 2300 cc.

The patient received 5 pached cells, 1 pool of platelets and 2 units of fresh frozen plasma. When transfusion started, the hemoglobin level reached the lowest value (6.3 g/dl). The patient remained circulatory stable but she was transferred to the intensive care unit for close monitoring of her hemodynamic status and replacement of fluid and other blood components.

During our observation post operative hemoglobin level was 8.3 g/dl. The tamponade was emptied and removed after 36 hours and no substantial bleeding occurred. The woman was covered with broad spectrum of antibodies. The transvaginal sonographic examination revealed an echoic mass, with a poor vascularization, measuring 38 mm in its maximum diameter, compatible with retained placental fragment. The woman remains in stable conditions and she was discharged home well on post delivery day 6 with hemoglobin of 9,3 g/dl. She was given oral haematinics, antihypertensive therapy, postnatal prophylactic LMWH and antibiotics.

Two days later the patient was returned at our attention for a transvaginal ultrasound control, in which the echoic mass appeared not more vascularized and its maximum diameter was 30 mm. Hemoglobin was of 9.6 g/dl. We programmed a new access to our department, 6 days later, to monitoring the mass and the uterine cavity appeared to be empty, the bHCG value was negative and uterus was contract. In the follow up she hasn't got complications.

DISCUSSION

This case report demonstrates that the uterine tamponade with Bakri balloon was an useful intervention for the management of post partum hemorrhage [13]. The mechanism of action in stopping the bleeding is by creating an intrauterine pressure which exerts hydrostatic pressure on the capillaries and veins in the uterus [8,14]. In the literature the successful utilization of tamponade techniques has been well described in case of hemorrhage due to uterus' atony or placenta previa [15]. Failure may be due to damage or displacement of the balloon or others causes not well defined. There are some review in which are described cases of PPH non responsive to tamponade and that needed additional procedure or hysterectomy. Some authors remarked that diagnostic "tamponade test" rapidly identified patients with PPH that might otherwise warrant a laparotomy [13,16].

Management of PPH is a life sparing intervention. Using uterotonic agents is the preferred primary medical treatment. In case of failure, surgery can be the second option. Intrauterine balloon application should be considered as an alternative method when that has several advantage include being promptly implantable, cost effective and capable of eliminating major surgeries and their complications in cases with successful outcomes [17].

Bakri balloon device doesn't contains latex and once inflated it conforms very closely to the shape of the entire uterine cavity, unlike the Foley; this last one, such as condom, doesn't allow for drainage of the uterine cavity and it's possible for blood to accumulate [18]. It cannot be applied in case of organ failure associated with sepsis or disseminated intravascular section.

In our case we performed Bakri Balloon procedure according to the algorithm for the management of PPH, in a woman that had in her medical history some risk factors that we analyzed retrospectively: history of hypertension, a previous urgent cesarean section complicated by preeclampsia and retained placenta.

We remember that despite the identification of risk factors, primary PPH occurs unpredictably in women without any risk factor and in absence of effective medical intervention, patients with PPH on the average die within 2 hours. It is necessary to highlight the importance to shared hemorrhage protocols to improve outcomes related to postpartum hemorrhage. In this way the multidisciplinary approach, a team work communication and practice skills play a key role to improve systems processes in the health care setting.

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