

Use of Condom tamponade to manage Massive Obstetric Hemorrhage at a tertiary centre in Rajasthan.

INTRODUCTION:

Conventionally PPH has been defined as blood loss of more than 500ml following vaginal delivery and 1000 ml following a caesarean section (1). Another definition labels PPH as any blood loss which causes a 10% drop in hematocrit (2) or which threatens the hemodynamic stability of the patient and necessitates blood transfusion (3).

Postpartum hemorrhage (PPH) is a leading cause of maternal death all over the world.(4)In developing countries, it is responsible for an annual mortality of approximately 150,000 women per year. It remains a serious complication of childbirth in both developed and developing countries. From 2% to 5% of deliveries may lead to PPH with a blood loss of > 1000 mL within the first 24 hours.(5) Blood loss during first 24 hours after delivery is known as primary PPH (placental / extra-placental, depending upon the site of bleed), whereas blood loss from after 24 hours up to six weeks is termed as late or secondary PPH (6).The most common cause of PPH is uterine atony. A delay in correction of hypovolemia and delay in the control of bleeding are the main avoidable factors in most maternal deaths caused by hemorrhage.(7)

The idea of using a condom as a balloon tamponade was first generated and evaluated in Bangladesh in 2001 by Dr. Sayeba Akhter to fill a need and in response to the high cost of commercially available UBT devices (8).The precise mechanism of action for UBT is still unclear. The placenta is a low-pressure system, so it seems likely that when the placenta is the source of hemorrhage, the direct pressure of the balloon, even well below systemic pressure, will halt bleeding. When the hemorrhage is instead from an arterial source in the endometrium, it is possible that the balloon's exerted pressure exceeds the arterial pressure and thus promotes clot formation. A third possibility is that the introduction of the balloon in the atonic uterus causes it to contract.(9) Further study is needed to determine the mechanism of action, which will in turn help ensure proper placement and monitoring.

The purpose of this study is to evaluate the effectiveness of condom tamponade in the management of massive obstetric hemorrhage.

OBJECTIVE;

To evaluate the efficacy of a condom as a tamponade for intrauterine pressure to stop massive postpartum hemorrhage (PPH).

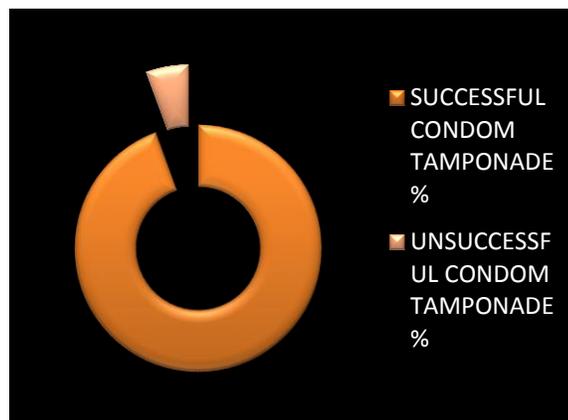
METHODS;

This prospective study was done in the Obstetrics and Gynecology Department of NIMS Medical College and Hospital, Jaipur, between December 2013 and February 2015. This hospital is located at suburban area. Because of its location at suburban area, it caters to the rural as well as urban women. Initial management of atonic PPH included resuscitative measures, correction of hypovolemia with intravenous fluid/blood transfusion, uterotonics, uterine massage and/or bimanual compression. In the majority of cases the decision for condom tamponade was made when active continuous hemorrhage persisted despite of these initial conservative measures.

With aseptic precautions, a sterile rubber catheter fitted with a condom was introduced into the uterus. The condom was inflated with 250-500 mL normal saline according to need. Vaginal bleeding was observed and further inflation was stopped when bleeding ceased. To keep the balloon in situ, the vaginal cavity was filled with roller gauze and finally a sanitary pad. If bleeding continues, this vaginal pack will usually become soaked with blood, and if profuse it will trickle through the introitus to soak the outside pad and undergarments. This did not happen in any of our cases. contractility was maintained by Oxytocin drip for 24 hours. Prophylactic antibiotics were administered intravenously as long as the condom catheter was in situ. The condom catheter was kept in situ for 24 - 72 hours depending on the severity of initial blood loss. Bleeding did not resume in any patient when the condom catheter was gently deflated over 10 - 15 minutes.

RESULTS:

Patients were in the age group of 19 to 37 years with a mean age of 28 years with their parity ranging from 1 to 6 with a median of 3. Of the 36 patients 32 (88.88%) were of primary PPH and 4 (11.12%) of secondary PPH. Six patients were in shock at the time of intervention. Majority of cases 33(91.66%) had spontaneous vaginal delivery and 3 (8.34%) cases were following a caesarean section. In 34 (94.44%) cases, condom catheter was introduced within 6 hours while in 2 (5.56%) cases of secondary PPH on day 2. In all but 2(94.44%) the cases post partum bleeding was stopped within 10 mins of creation of tamponade . On an average 350 ml of normal saline was required to create adequate tamponade to stop the bleeding. Blood and crystalloids were transfused as per the assessment of individual patient. No patient went into irreversible shock and no patient developed any signs of sepsis. Patients were monitored in the hospital for one week. Of the 34 patients (94.44%) with successful tamponade none required any further intervention and did not develop any further complication. Out of the remaining two patients who didnt respond to tamponade and continued to bleed one was treated with B-lynch suturing and in the other one emergency hysterectomy was performed.



DISCUSSION;

PPH—a major composite of obstetric hemorrhage— is ubiquitous as it can kill “even a healthy woman within two hours, if unattended” (10). Despite its ubiquity, the root causes of PPH remain obscure, however, the four Ts (Tone, Trauma, Tissue and Thrombin) (11) are considered the major factors resulting into the PPH. About 1 in 200 women suffer from massive hemorrhage, which can be severe enough to cause hypotension and shock. Although most can be treated successfully with conservative measures, such as medication, about 10% of the women with PPH require major surgical procedures and even hysterectomy to save their lives (Rouf S et al, unpublished data).

Surgical options for major PPH include uterine compression sutures, vessel ligation and hysterectomy. These procedures are invasive, involve laparotomy, require specialist expertise, may be associated with significant morbidity and may compromise future fertility. In contrast the balloon tamponade is simpler and handy alternative for arresting the bleeding. It is a well recognized therapy in patients of intractable PPH especially due to atony, coagulopathy and placenta accreta and most of the patients with intractable PPH do respond to tamponade by various balloon devices like Sengstaken-Blakemore tube , Foley catheter and the less expensive 'Bakri tube' and condom catheter.

From our results, we can state that condom tamponade saves both time and money with positive results in approximately 95% cases. It can be used effectively in developing countries as an efficient alternative to the surgical methods of controlling obstetric hemorrhage.

CONCLUSION:

Use of condom tamponade can effectively help in reducing both maternal morbidity and mortality associated with PPH. Our study encourages use of condom tamponade which is efficient, cost effective, easily available and requires lesser skills as compared to the traditional surgical procedures.

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