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RESEARCH ARTICLE

ESTABLISHING THE ROLE OF BALLOON TAMPONADE IN THE MANAGEMENT OF ATONIC POST- PARTUM HAEMORRHAGE (PPH) WHEN UTEROTONIC DRUG FAILED TO ARREST BLEEDING.

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Abstract

Objective: Establishing the role of Balloon Tamponade in the management of atonic PPH when Uterotonic drug failed to arrest bleeding. Methods: Retrospective review of 30 women who underwent balloon tamponade for severe PPH, during a period of 2yrs in Patna medical college & hospital, Patna . Clinical success was defined as control of bleeding without need for further intervention. Results: 30 women (mean age, 30 years; range, 18 - 42) underwent balloon tamponade. All the selected cases were delivered vaginally . Uterine atony was the main cause of PPH . Three patients in this study required hysterectomy. Conclusion: Balloon tamponade is an effective means of controlling severe PPH with success rates of around 90%.

Keywords: Balloon tamponade , PPH , Uterine atony, Uterotonic drug

INTRODUCTION

Postpartum haemorrhage (PPH) contributes significantly to the maternal mortality & morbidity all over the world(1,2). It can transform normal women in labour to a critically ill patient within minutes.Women can lose upto 500ml of blood in 1 minute during PPH .The average woman has approximately 5 liters of blood i.e 100ml/kg body wt in her circulation.At this rate ,it is possible for a woman to become exasanguinated within 10 minutes. Its incidence is about 4-6% of all delivery.Uterine atony is the most common cause of PPH, accounting for 80% of PPH. The cause of hemorrhage must be distinguished correctly to decide the treatment method. Uterine atony, placenta retention, and lacerations of the genital tracts are the most common causes. As soon as the PPH is observed, treatment options should be applied step by step. If medical treatment fails, conservative methods or surgery are indicated.

The morbidity and mortality of surgicall methods are high; therefore, new conservative methods are developed to control the bleeding, including balloon tamponade and arterial embolization. These conservative methods are very important, because most of the intractable

bleedings can be successfully treated and hysterectomy can be avoided. These methods are also more important especially for patients who wish to preserve their fertility.

Over the last two decades, balloon tamponade use has been reported for the management of postpartum Hemorrhage(3-11). Various types of balloon catheters have been reported in the literature, including Rusch balloon(6), Bakri ballon(8), the Sengstaken Blackemore tube, or Foley catheters (10,11) adopted for intrauterine tamponade. The intrauterine balloon is believed to act by exerting in inward-to-outward pressure 'that is greater than the systemic arterial pressure' to prevent continual bleeding.

MATERIAL AND METHOD:-

This prospective study was conducted in labour Room Emergency, Obstetrics and Gynaecology Department, Patna Medical College and Hospital, Patna from October 2011 to September 2013.

During this time a total of approximately (approx) 10,000 patient delivered in labour room, PMCH. During this time 300 were diagnosed to have atonic PPH and out of this 30 underwent treatment by intrauterine tamponade after failing medical treatment with oxytocic drugs.

Insertion of balloon tamponade include various procedure:-

(a) Insertion of balloon device – A condom was tied with thread to the tip 3-4 cm of the Foley's catheter. The condom catheter was inserted transvaginally by using sponge holder forceps to hold the cervix and condom catheter was inserted either digitally or by sponge holder forceps to intrauterine cavity upto 14-15cm. The distal end of the Catheter was ligated to prevent backflow. Condom was then inflated with 200-500 ml of warm normal saline by connecting it to the dripset.

(b) Vaginal pack was given to maintain the balloon in the uterine cavity but it was given only after positive tamponade test, otherwise it would obscure any continuous bleeding.

(c) Uterine fundus was palpated abdominally & marked by pen as a reference line from which any uterine enlargement as distention would be noted. 40 U oxytocin infusion continued for 2-8hrs.

(d) Antibiotics were also administered prophylactically because of presence of a foreign body inside the uterus. The triple antibiotic regime used was Ampicillin (500mg every 6hrs) Plus metronidazole (500mg every 4hrs) Plus Gentamycin (80mg every 4hrs) administered intravenously for 7 days.

(e) Proper analgesia were required during the placement of balloon tamponade.

(f) Rate of deflation – The condom catheter was kept for 6-24 hours, depending upon the initial intensity of blood loss. For those who had severe bleeding, the catheter was kept for the longer duration. Condom was deflated slowly over 10-15 minutes during the same setting.

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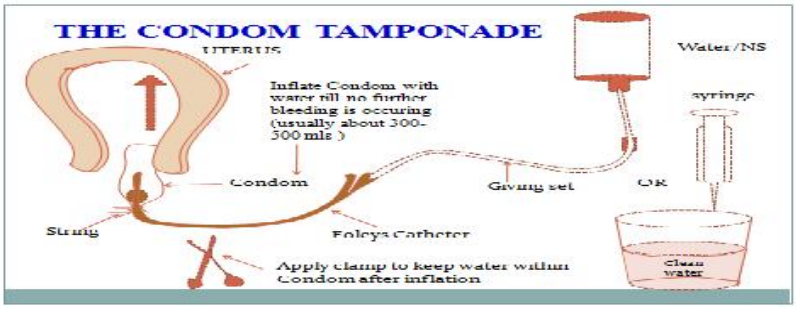
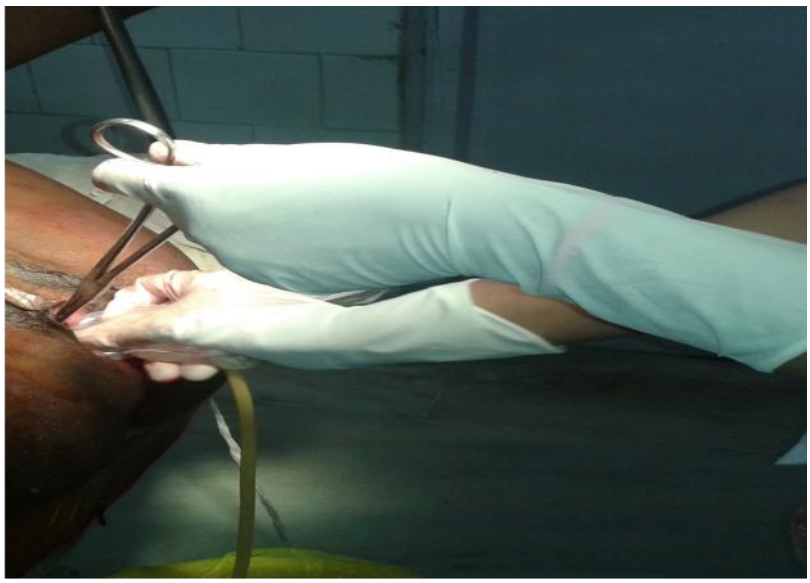
THE CONDOM TAMPONADE





RESULT:--

The present study showed the effectiveness of balloon tamponade in the management of PPH. We found that balloon tamponade was highly effective in the management of postpartum hemorrhage unresponsive to standard therapy. Further, balloon tamponade was highly successful in controlling hemorrhage due to uterine atony when the catheter was properly placed.

Using balloon tamponade in a management algorithm will allow the clinician to decide quickly if more surgical intervention are needed. If bleeding persists,laparotomy or uterine artery embolization should be considered. We did not include a comparison group of patients with similar blood loss who did not have balloon tamponade.

Because of the ease of use, rapid placement, immediate results, low cost, availability, low morbidity, and success of these catheters, we recommend that labor and delivery units stock balloon catheters for use in cases of postpartum hemorrhage unresponsive to medical treatment.

Table – 1→ Showed distribution of cases according to age groups 46.66% cases belonged to age group >30yrs .33.33% cases belonged to age group 20-25yrs.

Though PPH is not directly related to age.But it is found that chances of PPH increases in Elderly primigravida, Teenager pregnancy & Elderly multigravida.

TABLE – 1: Show distribution of cases according to age group.

Age in yrs	No. of Cases	Percentage
<20	1	3.33
20-25yrs	10	33.33
26-30 yrs	5	16.66
>30 yrs	14	46.66

Table – 2 - Showed distribution of cases according to parity.

The present study showed that the incidence of PPH increased with increasing parity. Blood loss was maximum in multigravida as compared to primigravida.

Blood loss with increasing parity might be due to atonic uterus, adherent placenta or increased collagen deposition between muscle fibres. So there is increase in fibrous tissue & decrease in muscular tissue.

TABLE – 2: Show distribution of cases according to parity

Parity	No. of cases	Percentage
Primigravida (G1)	8	26.66
Elderly primigravida (G1+0); >30yrs	1	3.33
2^{nd} to 4^{th} gravid	5	16.66
Grand multigravida (≥G5)	16	53.33

Table – 3 – Showed that in 56.66% cases of PPH were associated with risk factor . So, 3rd stage of labour should be conducted properly in high risk cases.Despite this in 17 cases (56.66%) ,PPH occurred which was not responding to uterotonics drugs .In these cases PPH was effectively managed by inflating balloon tamponade.

TABLE- 3: Showing associated of risk factor present during pregnancy

Risk factor	No. of cases	Percentage
Risk factor Present	17	56.66%
Polyhydramnios	1	3.33%
Twin + Grandmultipara	1	3.33%
Severe anaemia	2	6.66%
Twin	5	16.66%
Elderly Primigravida+PIH	1	3.33%
Precipitate labour	1	3.33%
Big Baby	3	10%
PIH	1	3.33%
APE	1	3.33%
Postdated	1	3.33%
Risk factor Absent	13	43.33%

Table -4- Showed how long intrauterine Balloon tamponade was kept to manage postpartum haemorrhage. .

The condom catheter was kept for 6- 24 hours, depending upon the initial intensity of blood loss, and gradually deflated over 10-15 minutes when bleeding ceased.

TABLE – 4: Showing duration of application of balloon tamponade to control PPH.

Duration of application of balloon tamponade	No. of cases	Percentage
6-10 hrs	8	29.62
11-15 hrs	13	48.14
16-20 hrs	6	22.22

Table - 5- Showed volume of inflation of intrauterine balloon tamponade for arresting bleeding. 14 cases (46.66%) of PPH were managed by inflating balloon by 251ml -300ml of normal saline.

11 (36.66%) cases of PPH were managed by inflating balloon by 200ml-250ml of normal saline.

In most cases, inflation of the condom was stopped when there was resistance to more saline or when bleeding ceased.

TABLE – 5: Showing volume of inflation of balloon tamponade required for the management of PPH.

Volume infected	No. of cases	Percentage
200 – 250ml	11	36.66
251-300ml	14	46.66
301 – 350 ml	2	6.66
351-400 ml	3	10

Table -6- Showed success of balloon tamponade in arresting bleeding during PPH.

In 27 cases(90%) balloon tamponade were effective in arresting bleeding.In 3 cases(10%) need hysterectomy to save the life of patients.

TABLE – 6: Showing success of balloon tamponade to arrest bleeding.

Success	No. of cases	Percentage
Successful	27	90
Unsuccessful	3	10

In 90% cases intrauterine balloon tamponade could successfully arrest bleeding while in 10% other surgical intervention was required to arrest bleeding.

These study suggest that balloon tamponade is helpful in managing PPH secondary to a wide variety of causes in resource-poor settings, including uterine atony, placenta praevia. Complication rates were low in their use, with no reported cases of uterine rupture and no increased risk of infection. Thesefacts, combined with low cost and easy availability, make balloon tamponade in form of condom catheter , an ideal addition to the armamentarium against PPH in the low-resource setting

DISCUSSION

Postpartum haemorrhage is the leading cause of maternal death. Effective interventions addressing postpartum haemorrhage are critically required to reduce maternal mortality. Prophylactic measures like use of uterotonics will reduce the risk of PPH by about 60%. Patients with massive blood loss after delivery can quickly become haemodynamically unstable and develops a chain of life threatening events which can finally lead to the death of the patient. Surgical haemostasis is to be initiated sooner rather than later. Pelvic artery ligation (uterine or internal iliac) require complex pelvic dissection and though successfully tried is not always feasible in all situations. Embolization of pelvic arteries needs interventional radiologists , trained and experienced surgeons and expensive infrastructure.This facility is not available in most of the peripheral hospitals. Hysterectomy was the ultimate solution which could be provided conventionally, however the pressures to preserve fertility and avoid hysterectomy have led to the evolution of number of techniques in the recent years . Compression sutures like B-lynch for control of atonic PPH is also an option but again it is an invasive procedure. In contrast uterine balloon catheter is simple and very effective in the treatment of intractable PPH

due to uterine atony, coagulopathy and placenta accreta. The mechanism of action of UBT is by means of compressing the uterine sinuses and thereby arresting PPH. Our results with the use of Foley's catheter as uterine tamponade and control intractable postpartum haemorrhage has been effective in 90% cases. Adoption of this technique and dissemination of knowledge about its use in the management of atonic PPH may save lives in many under resource settings where uterotonics, safe blood, anaesthsia and experienced surgeons are unavailable round the clock.

Conflict of interest – none; Funding – none.

REFERENCE

1) La LandeA ,Daviss BA, Acosta A, Herschdafer K. Postpartum haemorrhage today.ICM/FICO initiative 2004-2006. IntJ.GynaecolObstet 2006.94.243-5

2) World Health Organization. Attending to 136 million births, every year make every mother and child count. Chapter 4: risking death to give life. The World Health Report 2005. Geneva Switzerland WHO; 2005

3). Tamizian O, Arulkumaran S. The surgical management of postpartum haemorrhage. Curr Opin Obstet Gynecol 2001; 13:127–131

4). Chan C, Razvi K, Tham KF, Arulkumaran S. The use of a Sengstaken-Blakemore tube to control postpartum hemorrhage. Int J Obstet Gynaecol Obstet 1997;58:251–252

5). Marcovici I, Scoccia B. Postpartum hemorrhage and intrauterine balloon tamponade: A report of three cases. J Reprod Med 1999;44:122–126

6). Johanson R, Kumar M, Obhrai M, Young P. Management of massive postpartum haemorrhage: Use of a hydrostatic balloon catheter to avoid laparotomy. BJOG 2001;108:420–422

7). Seror J, Allouche C, Elhaik S. Use of Sengstaken-Blakemore tube in massive postpartum hemorrhage: a series of 17 cases.Acta Obstet Gynecol Scand 2005;84:660–664

8). Bakri YN, Amri A, Abdul Jabbar F. Tamponade-balloon for obstetrical bleeding. Int J Gynaecol Obstet 2001;74:139–142

9). Condous GS, Arulkumaran S, Symonds I, Chapman R, Sinha A, Razvi K. The ''tamponade test'' in the management of massive postpartum hemorrhage. Obstet Gynecol 2003;101:767–772

10). Goldrath MH. Uterine tamponade for the control of acute uterine bleeding. Am J Obstet Gynecol 1983;147:869–872

11). De Loor JA, van Dam PA. Foley catheters for uncontrollable obstetric or gynecologic hemorrhage. Obstet Gynecol 1996; 88:737.