

Intrauterine Condom Tamponade in Management of Post Partum Haemorrhage

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ABSTRACT

Background: Uterine tamponade is often used to control post partum hemorrhage. Among various methods, condom Foley's catheter tamponade is simple, easy to use and is believed to be effective. The study evaluates outcome of condom Foley's catheter tamponade.

Methods: In this prespective observational study, condom tamponade was applied to fourteen cases with varying degrees of PPH, not controlled with pharmacologic measures. The efficacy on control of bleeding was assessed along with the total amount of blood loss and any complications.

Results: The condom tamponade stopped bleeding in all the cases. Average amount of blood loss was 1221 ml. No complications were noted.

Conclusions: Thus, condom tamponade is an effective method to control intractable PPH. It's simple and does not require expertise to use, so, it can have a wide application even in resource poor settings.

Key words: condom tamponade, intrauterine, post partum haemorrhage

INTRODUCTION

Postpartum hemorrhage (PPH), defined as the loss of more than 500 ml of blood after delivery, occurs in up to 18 percent of births. Even with appropriate management, approximately 3% of vaginal deliveries result in severe postpartum hemorrhage. It is the most common maternal morbidity in developed countries and a major cause of death worldwide.¹

Uterine atony is responsible for 80% of primary PPH. The rest are attributed to retained placental tissues, uterine rupture, lower genital tract trauma, consumptive coagulopathy etc.²

At times, PPH does not respond to commonly used pharmacologic measures like ergometrine, oxytocin, 15 methyl analogue of prostaglandin F₂α (carboprost),

prostaglandin E1 (misoprostol). In such cases, balloon tamponade can be life saving. Some commonly used balloon techniques are hydrostatic Rusch balloon, gastric balloon, Foley's catheter, Bakri's balloon and condom catheter. This study evaluates the outcome of condom Foley's catheter tamponade in management of PPH.

METHODS

A perspective observational study was conducted in Paropakar Maternity and Women's Hospital in the year 2008-2010. Through purposive sampling, 14 cases of intractable PPH or those with high risks for intractable PPH like retained placenta, severe preeclampsia or coagulopathy were enrolled in the study. Consent was obtained from the patient and her husband.

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The study included those cases who bled more than 500 ml or who had high risk of getting PPH and who continued to bleed despite the use of pharmacologic measures like ergometrine, oxytocin, 15 methyl analogue of prostaglandin F₂α (carboprost), prostaglandin E1 (misoprostol). All these measures were tried for half an hour before the cases were termed intractable to these measures. Thus, in these cases, condom foley's catheter tamponade was applied.

The equipment was manually prepared by inserting a condom on Foley's catheter, and tying with thread. It was then aseptically inserted in the uterine cavity and inflated with normal saline 350-500ml injected through Foley's catheter drainage port. The tube was then clamped and bleeding assessed. If the bleeding stopped, the tamponade was left for about 12 to 24 hours after which it was gradually deflated. During the procedure, a surgical team was kept stand-by ready for surgical intervention (laparotomy and other necessary measures). If the bleeding did not stop within half an hour of tamponade application, the method was termed unsuccessful and surgical intervention sought. Throughout the procedure, adequate antibiotic coverage was maintained along with oxytocin drip and vaginal

packing, the condition of the patient continuously monitored in the Intensive care unit, specially noting the amount of bleeding and any other complications. Data was analysed with Microsoft Excel.

RESULTS

A total of 14 cases were included, condom tamponade worked in all of them with an average blood loss of 1.2±1.3 liters. The study participants were 27.3 ± 6.6 years of age in average and the bleeding stopped in all the cases within 15 minutes of tamponade application. Seven of them were primigravidae. Two of the patients had preterm labor.

There were 11 vaginal deliveries with one requiring forceps application. The rest were delivered with cesarean section. Uterine atony was the cause of PPH among four patients, consumptive coagulopathy among two, retained placenta among two, adherent placenta among one and eclampsia among one patient. There was one case with severe preeclampsia and one with coagulopathy and two with retained placenta making them very likely to have PPH, thus, tamponade was applied to them as well.

No	Age (years)	Gravid/parity	Gestational age	Estimated Blood loss	Causes of PPH	Mode of delivery
1	22	Primi	Term	1400ml	Consumptive coagulopathy	Vaginal
2	40	Elderly primi	33 weeks	1000ml	Adherent Placenta	Vaginal
3	24	Primi	42 weeks	2000ml	Uterine atony	Caesarean section
4	20	G ₃ P ₂	?Term	400ml	Prophylactic (Consumptive coagulopathy)	Vaginal
5	22	G ₃ P ₂	42 weeks	5000ml	Consumptive coagulopathy	Vaginal
6	30	G ₂ P ₁	Term	550ml	Uterine atony	Caesarean section
7	38	G ₁₀ P ₈₊₁	Term	1800ml	Uterine atony	Vaginal
8	18	Primi	40 ⁺³ weeks	650 ml	Ecclampsia+ uterine atony	Forceps delivery
9	32	G ₂ P ₁	?Term	900ml	Retained placenta	Vaginal
10	29	Primi	?Term	200ml	Prophylactic (Retained placenta)	Vaginal
11	24	G ₃ P ₁₊₁	40+ weeks	2000ml	Retained placenta	Vaginal
12	27	Primi	41 weeks	600ml	Uterine atony	Caesarean section
13	32	G ₂ P ₁	39+ weeks	300ml	Prophylactic (Retained placenta)	Vaginal
14	24	Primi	35 weeks	300ml	Prophylactic (Severe preeclampsia)	Vaginal

DISCUSSION

PPH prevails as a common and dreaded complication of parturition. Though there are many pharmacological and non-pharmacological measures to control it, some cases of PPH simply do not respond to any of them leaving surgical intervention as the ultimate option. Since, delivery is a routine, normal procedure and PPH is hard to predict, it is not justifiable to have a surgical team stand-by for each and every delivery conducted. Specially, in a resource poor setting like ours, surgical expertise may not be even available or it may take some time, before the patient is taken to a higher resource center.

In such settings, intrauterine tamponade could be a good option to stop bleeding or if not, to keep bleeding to a minimum while seeking surgical intervention. Tamponade test not only identifies the need of laparotomy, it also allows time to correct any consumptive coagulopathy.³ Many times it also serves as a therapeutic maneuver and avoids the need of surgical intervention at all. The method is very simple. It can be used even in remote areas with limited resources. Even primary level health workers with limited training can perform this maneuver.

There are other methods of uterine packing as well like roller gauze, hydrostatic uterine packing, but they are blind procedure, more traumatic, time consuming with unpredictable outcome. Thus, they are used infrequently and have almost become outdated.

In this study, bleeding stopped with in 15 minutes at maximum, after insertion of condom tamponade, no further bleeding was noted after removal and thus no further intervention like laparotomy were required. Indeed, it is easily available, cheap, is easy to insert and take out, consumes less time, requires minimal anesthesia, and is less traumatic, needs no trained personnel, and acts immediately. Even if it does not work properly, it reduces blood loss and gives some time till surgical help becomes available. So, tamponade test can be performed in all the cases with failed medical means and maneuvers.

There have been several reports on the use of intrauterine condom tamponade. Dabelea et al reported 23 cases with postpartum hemorrhage unresponsive to medical therapy but managed successfully with intrauterine balloon tamponade.⁴ Likewise, Airede LR et al reported four cases of PPH due to uterine atony in which intrauterine tamponade with inflated condom stopped bleeding.⁵

In one study of 152 cases of PPH, Akhter et al shared that they managed 109 with medical measures; 20 with B-Lynch procedure, and 23 with condom catheter. Those cases managed with condom tamponade were the ones, who had uterine atonicity or morbid adhesion (accreta) and whose bleeding could not be controlled with uterotonics or surgical procedure like B-lynch. They also stated they introduced condom catheter immediately in patients who were in shock due to massive hemorrhage, before seeking further medical management.⁶ Likewise, Bagga R et al reported two cases of post partum hemorrhage with impaired coagulation managed by condom catheter.⁷

Condous GS et al tested intrauterine condom tamponade among 16 patients with intractable haemorrhage; 14 (87.5%) had positive test and 2 (12.5%) had negative test. They concluded that the tamponade test is the procedure that can identify who will or will not need surgical intervention, the test is said to be positive if bleeding ceases and negative if bleeding continues.⁸

Johanson R et al also supported tamponade method as innovative, simple and effective. They used Rüscher urological hydrostatic balloon catheter. They reported two cases, in which medical therapy failed to control PPH, but the catheter worked and avoided further surgical interventions.⁹ Doumouchtisis SK et al had similar results with balloon tamponade. They used Sengstaken-Blakemore Oesophageal Catheter (SBOC) on 27 cases of PPH not responding to medical management. Bleeding stopped satisfactorily among 22 of them, but five required surgical intervention - four had hysterectomy. They did not notice any significant complication of the procedure.³ Among other forms of tamponade, Vitthala S et al used Bakri balloon tamponade with an effectiveness of 80%.¹⁰

Marcovici I et al also found high efficacy of intrauterine inflated Foley's catheter balloon for tamponade. They reported one case of profuse hemorrhage following evacuation of 17 week fetus, controlled with intrauterine balloon tamponade.¹¹

CONCLUSIONS

Condom tamponade is an effective measure to control PPH. At times when PPH do not respond to pharmacologic measures, condom tamponade would be an emergency life saving procedure. It is simple, cheap, acts rapidly and maintains natural contour of the uterus. It also helps to decide for surgical intervention and more importantly gives time till surgical help becomes available. It does not need special expertise, so can be used effectively even by people with limited medical expertise.

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