

Balloon Tamponade with Foleys Catheter : An Effective Method of Controlling Post Partum Haemorrhage (PPH)

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Background: PPH is a life threatening condition and can cause exsanguination rapid enough to be fatal inspite of the immediate availability of blood products.

Objectives: To determine the efficacy of balloon tamponade with Foleys catheter in controlling PPH.

Study Design: Interventional study design was used.

Settings: The study was carried out at Lady Willingdon Hospital from January 2009 to June 2010.

Patients and Methods: Fifty patients having post partum haemorrhage after delivering in the emergency department of Lady Willingdon Hospital were subjected to the study. History including parity and gestational age of the patients were taken. Five patients had PPH after vaginal delivery and 45 patients had PPH at the time of C – Section. Among these ten patients were excluded from the study because of life threatening haemorrhage.

Results: This study showed that parity of the patient was not significant as far as the occurrence of PPH, p-value was 0.058. Placenta previa and accreta were the leading causes of PPH in this series, p-value = to 0.000. The outcome of balloon tamponade was independent of the mode of delivery i.e. p-value 0.503. It was effective in both vaginal delivery and caesarean section. The overall success rate was 72.5%.

Conclusion: Overall success rate was 72.5% which was highly significant. The technique of balloon tamponade should be considered in the management PPH in future.

Key Words: *Post Partum haemorrhage, Foleys Catheter, balloon tamponade.*

INTRODUCTION:

Post partum haemorrhage is defined as a loss of greater than 1000 ml of blood after delivery of a baby. PPH is a major cause of world – wide maternal mortality ranging from 13% in developed countries to 34% in developing countries. It is responsible for over 125000 maternal deaths each year.¹ In addition the morbidity of puerperal anemia and the risks associated with blood transfusion make limitation of blood loss at delivery an important objective. Major PPH or loss of over 1000 ml of blood occurs in 1 – 5% of deliveries.^{2,3}

The incidence of major PPH is on the rise because of the rising trend of caesarean section, in modern obstetrics. Different techniques are already in use to arrest post partum haemorrhage ranging from various pharmacological agents to interventional procedures like uterine artery embolization, conservative surgery like B. Lynch sutures, ligation of ovarian, internal iliac vessels and a radical approach like peripartum hysterectomy.^{4,5} The risks associated with these approaches are tremendous thus limiting their role in every patient.

Uterine tamponade means creating an intrauterine pressure, higher than systemic arterial pressure to stop bleeding. There are different ways of producing uterine tamponade. One of the older methods was uterine packing which has been used since ages.⁶ Apart from this other methods used are Sengstaken Blakemore oesophageal catheter⁷ and Bakri

Balloon Catheter.⁸ It is a two way 100% silicon catheter. Patients not benefitting from these methods known as tamponade test are then subjected to laparotomy.⁹ Another method used by some researchers is condom inflated with warm saline.¹⁰

In our study we used Foleys catheter which is an inexpensive and cost effective method readily available in the labour rooms. The results produced are comparable to other studies done for the same purpose.¹¹

Objectives

To determine the efficacy of balloon tamponade with Foleys catheter in controlling PPH.

Patients and Methods

50 patients were selected from the emergency department of Lady Willingdon Hospital, who developed postpartum haemorrhage after delivering in the hospital. The total study period was eighteen months from January 2009 to June 2010. Informed consent was taken.

Among these 5 patients had PPH after vaginal delivery and 45 patients were discovered having PPH at the time of caesarean section. Out of these 10 patients had massive life threatening haemorrhage and were excluded from the study.

After delivery of placenta the causes of PPH determined were previous history of C – Sections, placenta previa, placenta accreta, increta, coagulation failure and uterine atony.

The placenta was removed as much as possible and genital tract was examined for tears and lacerations, 4 – 5 Foleys catheter of No. 24F size were inserted, through the cervix into the uterine cavity, having an average balloon capacity of 80 – 100 ml. Warm saline was instilled into the balloons creating a total volume of 320 – 400 ml of fluid.

In caesarean sections first layer of uterine wound was closed before inflating the balloons and the vagina was packed with roll gauze to ensure a tight fit. Bleeding was assessed at the outer ends of Foleys catheters for further evaluation.

Results

50 Patients were recruited for study out of which ten were excluded because of massive PPH. They had peripartum hysterectomy and ultimately two patients expired because of the development of disseminated intravascular coagulopathy.

5 patients had vaginal delivery and 3 underwent caesarean section. Patients having vaginal delivery had uterine tamponade and was successful in all five as the cause of PPH in these patients was uterine atony. In 35 patients undergoing caesarean section balloon tamponade was tried, 26 patients had reduction in the amount of blood loss to normal. 9 patients did not respond. In 5 patients uterine packing was attempted and it succeeded. 4 patients ended up in laparotomy followed by devascularization of uterus or

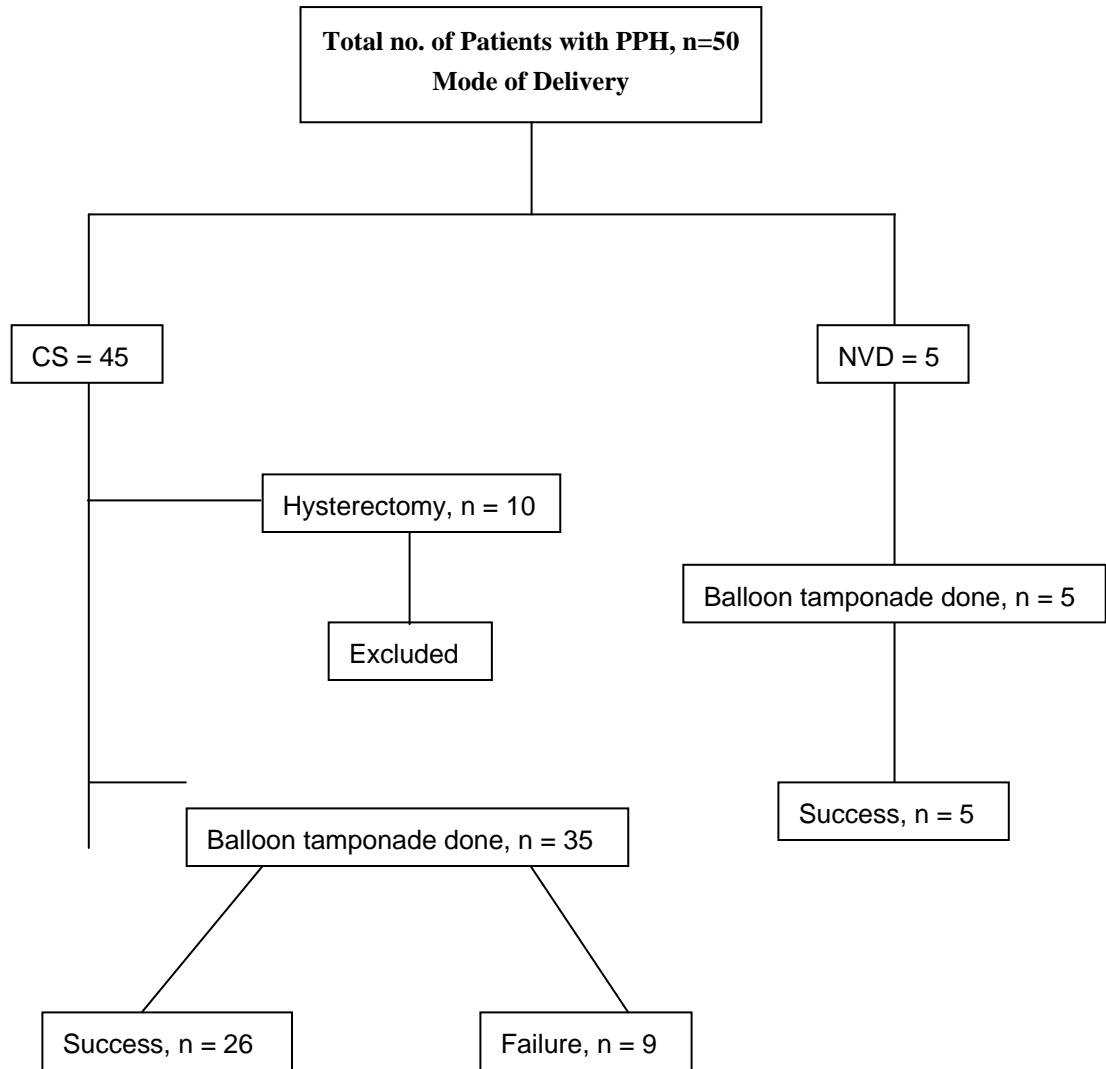


Fig. 1:

hysterectomy.

Table 1: Frequency distribution of age (years) and Gestational age (weeks).

Age Distribution in Years	No. of Patients	Mean Gestational age (weeks)
20 – 25 years	5	32
26 – 30	22	36.5
31 – 35	18	38
35 – 40	5	37.5

In the patients in whom tamponade succeeded the average blood transfusions given were 3 units with a 24 hours syntocinon drip and a broad spectrum antibiotic cover. Fresh frozen plasma was transfused in four patients.

Our results showed that the role of parity of the patient

was insignificant in the causation of PPH. P. value was 0.058. The significant factor in the causation was placenta previa P. Value equal to 0.000. The mode of delivery was not associated with the out come of balloon tamponade, p-value 0.503.

The overall success rate was 72.5% and failure rate was 27%.

Table 2: Frequency distribution of Parity.

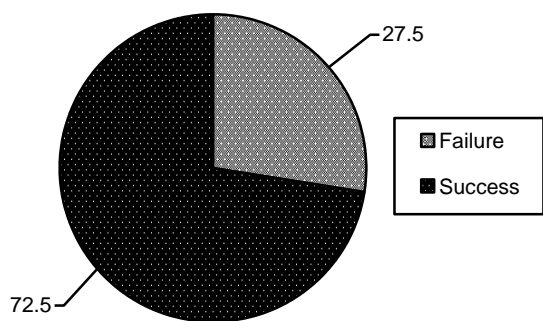
Total No. of Patients = 50 Parity Specific PPH	
Primigravida	12
2 nd Gravida	6
4 th Gravida	15
5 th Gravida	5
8 th Gravida	12

p-value = 0.058

Table 3: Frequency distribution of causes of post partum haemorrhage.

Causes of Post Partum Haemorrhage	
Uterine atony	18
Placenta Previa	22
Placenta Accreta	4
Placenta Increta	1
Previsions 4C – sections	3
Previsions 3C – Sections	2

p-value = 0.000



Graph 1: Frequency distribution of Outcome of balloon tamponade.

Discussion

The Management of PPH involves a stepwise approach and the choice of technique will depend on the setting i.e condition of the patient and experience of the operator.

Using balloon technique has many potential advantages: success rates are similar to other methods, it is simple and easy to use, can be deployed rapidly avoiding Laparotomy or need for specialized units. It is associated with low complication rates and allows the option being used along side other methods.¹² Attempts to control haemorrhage should not result in undue delay. The probability of survival decreases after the first ‘golden’ hour.

The principle behind this method is analogous to exerting pressure on a severed vessel, resulting in the formation of a coagulum thus minimizing blood loss.¹⁴

Conclusion

In this study the technique of applying balloon tamponade with foleys catheter was highly effective and cost-effective. It is recommended that it should be used in future, in selected cases thus reducing the burden on health providers and the hospital management.

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