

Intraoperative Uterine Packing With Mops: An Effective, But Under Utilized Method Of Controlling Post Partum Haemorrhage-Experience From South Eastern Nigeria

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ABSTRACT

Background: Uterine packing is a simple noninvasive technique for controlling postpartum haemorrhage. However, its effectiveness has been underestimated and the procedure underutilized leading to lack of experience and expertise especially in the intraoperative usage of mops. The aim of the study was to re-evaluate the significance of intraoperative uterine packing in controlling post partum haemorrhage and preserving menstrual and reproductive functions.

Method: Twenty cases of intraoperative uterine packing with mops performed by the authors over a three-year period (December 2000-December 2003) at three different hospitals were reviewed. Mops were removed after 24 hours.

Results: The mean age of the patients was 28.9 ± 5.6 years, and the mean parity 3.1 ± 1.8 . The mean estimated blood loss was 1500 ± 461.1 millilitres and the mean number of units of blood transfused was 1.45 ± 1.2 . The commonest indication for surgery was placenta praevia (55%). None needed further treatment.

Conclusion. In carefully selected cases, intra-operative uterine packing is a simple and effective life saving option in our local environment with peculiar beliefs, lack of equipment and expertise.

KEYWORDS: Intraoperative; Uterine packing; Postpartum haemorrhage.

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INTRODUCTION

Postpartum haemorrhage (PPH) remains a leading cause of maternal mortality and morbidity worldwide. It accounts for over 125,000 maternal deaths each year and is associated with morbidity in 20 million women per year¹. It is the third leading cause of maternal deaths in the USA² and the commonest cause of maternal deaths in developing world^{3,4}.

Difficulty in measuring the actual quantity of postpartum blood loss has led to various modifications in the original World Health Organization's definition of postpartum haemorrhage^{5,6}.

Steps in management are, early identification of risk factors, prophylactic management of all cases, prompt and decisive treatment of emergent situations. Management options include, rubbing up of contractions, oxytocics, aortic compression, bimanual uterine compression, genital tract exploration, uterine tamponade and surgical methods, which has traditionally relied on ligation of internal iliac arteries and hysterectomy⁷.

When aggressive medical treatment has failed to control bleeding, and retained placenta and genital tract laceration ruled out, surgical measures should be commenced immediately.

Uterine packing is a traditional, simple, noninvasive technique that fell out of favour due to significant risk of infection and continual haemorrhage. These have however been taken care of by good technique and the use of broad spectrum antibiotics⁸.

In our environment, there is general aversion to hysterectomy due to traditional beliefs. There is also a tendency towards having many children, especially when there is unacceptable male to female ratio. We lack the equipment and expertise to perform uterine devascularization procedures (to preserve reproductive function). In desperate cases it may be very difficult to perform emergency obstetric hysterectomy especially in rural areas with lack of expertise, anaesthetist and haematologist thus making packing the only reasonable option.

Most of the uterine packing in our environment was done vaginally. Severe post partum haemorrhage encountered at caesarean section, unresponsive to oxytocics almost always ended in a hysterectomy. This may be due to the overzealousness of the practitioners. In this study we evaluated the significance of using mops intraoperatively when PPH is encountered.

SUBJECTS AND METHODS

Between December 2000 and December 2003, twenty cases of intraoperative postpartum haemorrhage managed by the authors using uterine packing in three different hospitals, University of Nigeria Teaching Hospital Enugu, Kenechukwu Specialist Hospital, Enugu and Chukwuasokam Maternity Hospital, Emene (Near Enugu) were

reviewed.

Packing was done using sterile mops tied end to end after conventional medical treatment failed to control bleeding. Packing was started from the placenta bed and then the entire uterus, side by side, top to bottom, front and back, all tightly done for effective tamponade effect.

We determined those that will benefit from packing when the initial pressure pack on the placenta bed significantly reduced or stopped the bleeding completely. To enable easy removal, especially when the cervix was closed in cases of placenta praevia, we cut the mop longitudinally and tied them end to end. In such cases we also did antegrade dilatation of the cervix with Hegars dilators up to twelve millimetres to enable the introduction the distal end of the mops into the upper

vagina. The uterine incision was closed with absolute care taken not to include the mops within the suture line.

We monitored the blood pressure, pulse, temperature, respiration, urine out-put, serial fundal height measurement, and inspection of vaginal pack. These parameters were checked, every 15 minutes for the first 4 hours, every 30 minutes for another 4 hours, thereafter three hourly for 24 hours. Prophylactic broad spectrum antibiotics were also given. In all our cases, we removed the mops after 24hours, but when this falls into the night, we delayed removal till the next morning.

The age of the patient, parity, indication for surgery, estimated blood loss, number of units of blood transfused, previous, and further surgical management were recorded.

RESULTS

Table I. Features of the Patients.

S/No	Age (Yrs.)	Parity	Indications for Surgery.	Estimated blood loss (ml.)	No of units transfused	Previous Surg. mgt	Further Surg Mgt.
1.	26	3	Fetal distress	1000	None	None	None
2.	28	2	Placenta praevia	1000	None	None	None
3.	30	4	Fetal distress	1000	None	None	None
4.	36	3	Malpresentation	1500	2	None	None
5.	22	1	Obstructed labour	1500	2	None	None
6.	32	4	Placenta praevia	2000	2	None	None
7.	29	2	Placenta praevia	1000	None	None	None
8.	38	8	Obstructed labour	1500	2	None	None
9.	23	3	Placenta praevia	2300	3	Under sowing	None
10.	25	4	Placenta praevia	2300	3	Under sowing	None
11.	28	2	Placenta praevia	1200	None	None	None
12.	31	1	Obstructed labour	1600	2	None	None
13.	34	2	Placenta praevia	1800	2	None	None
14.	36	7	Obstructed labour	1000	None	None	None
15.	28	3	Placenta praevia	2400	3	Under sowing	None
16.	20	2	Placenta praevia	1500	2	None	None
17.	21	2	Breech/one previous cls.	1400	2	None	None
18.	22	2	Fetal distress	1000	None	None	None
19.	32	3	Placenta praevia	1500	2	None	None
20.	37	4	Placenta praevia	1500	2	None	None

Table II. Summary of Results

	Mean	SD	SEM
Age (Years)	28.9	5.6	1.3
Parity	3.1	1.8	0.4
Blood loss (millilitres)	1500	461.1	103.1
No of units transfused	1.45	1.2	0.3

Table III. Indications For Surgery

	Frequency	Percentage
Fetal distress	3	15.0
Malpresentation	2	10.0
Obstructed labour	4	20.0
Placenta praevia	11	55.0
Total	20	100

The features of the twenty patients are shown in Table I.

The mean age of the patients was 28.9 ± 5.6 years and parity was 3.1 ± 1.8 . The mean blood loss was 500 ± 461.1 millilitres and the mean number of units transfused was 1.45 ± 1.2 (Table II).

Table III shows the indications for surgery.

DISCUSSION

When postpartum haemorrhage is encountered during caesarean section and medical treatment has failed to stop bleeding, conservative surgical methods are usually attempted before resorting to hysterectomy. These include, undersowing the placenta bed⁷, haemostatic multiple square suturing technique⁹, uterine compression techniques¹⁰, uterine artery ligation¹¹, internal iliac artery ligation¹², and embolization of uterine arteries¹³. Uterine tamponade procedures which have successfully been used include uterine packing^{8,14}, tamponade balloon¹⁵, Sengstaken-Blakemore tube¹⁶, condom balloon¹⁷, and military antishock trouser¹⁸.

Among all these procedures, uterine packing is easy, simple and quick to perform. It requires no special equipment and should be used especially in developing countries. It has also proved successful in cases of placenta praevia accreta¹⁹, provided cases are well selected and other non atonic causes of PPH excluded. Some authors used roll gauze^{8,14} for packing, but in all our cases we successfully used abdominal mops. In most of our centres, only 4x4

inch dressing gauze is made available during surgery and valuable time will be lost waiting for sterile roll gauze or attempting to tie the dressing gauze together. Mops are also heavier than gauze and usually provide better tamponade effect. However, the only problem was difficulty in removal especially when the cervix was closed. We overcame these difficulties by careful retrograde dilatation of the cervix and longitudinal division of the mops.

The "tamponade test" as was done in all our cases is very important in determining those that will benefit from packing²⁰. This test is usually done with inflated stomach balloon⁷, but in our cases, we used mops to apply pressure on the placenta bed and completed the packing process for those whose bleeding stopped or significantly reduced.

Those who failed the "tamponade test" were excluded from the packing and other surgical methods were then used to avert bleeding.

Packing can also serve as a useful technique to reduce blood loss while arrangements for alternative surgical procedures, if possible or transfer of patient to another hospital with appropriate facilities. Despite the fact that packing has stopped bleeding or significantly reduced it, the need to monitor patients for further bleeding cannot be over emphasized. We monitored further blood loss by measuring the pulse rate, blood pressure, urine output, serial symphysiofundal height measurement (to exclude intra-cavitary bleeding) and inspection of the vulval pad (to exclude external bleeding).

There is a theoretical risk that foreign body in the uterus may elicit further bleeding and form a nidus for infection, but these potential complications were averted by good technique and broad-spectrum antibiotic coverage. We also noticed that in the few cases where we attempted other conservative surgical procedures like undersowing before resorting to packing, there was increased incidence of blood transfusion as reported by some authors⁸. Thus, as a result of the high scourge of HIV/AIDs and the lack of adequate and proper screening facilities in our environment, early packing in cases where medical treatment has failed to control bleeding should be the rule. Synchronous medical treatment and packing of the lower segment may avert the need for blood transfusion in cases of placenta praevia. In this situation the pack should be removed immediately before closing the abdomen or reapplied and left *in situ* as in the other cases if significant bleeding occurs. Further studies are advocated.

We removed the packs 24 hours after the procedure with excellent results; however, whenever the time fell into the night, we delayed removal till the next morning. This was to enable us mobilize enough resources in case further bleeding occurred. This agrees with other studies where removal within 24-36 hours was done, although packs have been removed as early as 5 hours and as late as 96 hours⁹.

Complications of the procedure are minimal. In a recent review of uterine packing in New York, continual haemorrhage that necessitated hysterectomy occurred in one out of 9 cases reviewed¹⁴. However the study was a retrospective study and was silent on whether the tamponade test was done. We had no such complication because we carefully selected our cases to determine those who will benefit by doing the tamponade test.

Since postpartum haemorrhage has continued to be the leading cause of maternal mortality and morbidity in developing countries, any cheap, quick and effective intervention that requires no special equipment and expertise should be embraced by all practitioners. When cases are carefully selected, and meticulous and good technique applied, the need for hysterectomy will almost always be averted, operative morbidity diminished, menstrual and reproductive function preserved. The tamponade effect of packing on the vascular sinuses may obviate the need or reduce the amount of blood to be transfused. However, there should be no delay in performing a hysterectomy when careful assessment indicates that it is the only life saving option.

Uterine packing, an old procedure is now beginning to re-emerge as a life saving option especially in developing countries with lack of adequate equipment and expertise. By preserving the uterus, it also protects the psychosociocultural inclinations of our women thus increasing their confidence in orthodox medicine. The overall reduction in maternal mortality and morbidity makes the safe motherhood initiative an achievable goal.

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REFERENCES

1. Fawcus S, Mbizvo MT, Lindmark G, Nystrom LA. Community based investigation of causes of maternal mortality in rural and urban Zimbabwe. *Maternal mortality study group. Cent Afri J Med* 1995; 41: 105-113.
2. American College of Obstetricians and Gynecologists (ACOG). Educational Bulletin. No. 243. Washington D.C: ACOG, 1999.
3. Akpala CO, Ozumba BC. Maternal mortality in a rural Community in Northern Nigeria. *Orient J Med* 1991; 3: 168-171.
4. Aboyeji A P. Trends in maternal mortality in Ilorin. *Trop J Obstet Gynaecol* 1999; 16: 1-5.
5. Drife J. Management of Primary post partum haemorrhage. *Br J Obstet Gynaecol* 1997; 104: 275-277.
6. Roberts WE. Emergent Obstetric Management of Post partum haemorrhage. *Obstet Gynecol Clin N Am* 1995; 22: 283-302.
7. Tamizian O, Arulkumaran S. The Surgical Management of Post Partum haemorrhage. *Best Practice and Research. Clin Obstet Gynaecol* 2002; 16(1): 81-98.
8. Maier CR. Control of Post Partum haemorrhage with Uterine Packing. *Am J Obstet Gynecol* 1993; 169: 317-321.
9. Cho JH, Jun HS, Lee CN. Haemostatic Suturing technique for uterine bleeding during caesarean delivery. *Obstet Gynaecol* 2000; 96: 129-131.
10. Ferguson JE, Bourgeois FJ, Underwood PB, *et al.* B-Lynch Suture for Post Partum haemorrhage. *Obstet Gynaecol* 2000; 95: 1020-1022.
11. O' Leary JA. Uterine artery ligation in the Control of Post Caesarean haemorrhage. *J Rep Med* 1995; 40: 189-193.
12. Nandanwar YS, Thalman L, Mayadeo N, Guttal DR. Ligation of Internal Iliac arteries for the control of pelvic haemorrhage. *J Post Grad Med* 1993; 39: 194-196.
13. Badawy SZ, Etman A, Sigh M, *et al.* Uterine artery embolization: the role in Obstetrics and Gynecology. *Clinical Imaging* 2001; 25: 288-295.
14. Hsu S, Rodgers B, Lele A, Yeh J. Use of packing in Obstetric haemorrhage of uterine origin. *J Reprod Med* 2003; 48(2): 69-71.
15. Bakri YN, Amri A, Abdul JF. Tamponade balloon for obstetrical bleeding. *Int J Gynaecol Obstet* 2001; 74: 139-142.
16. Katesmark M, Brown R, Raju KA. Successful use of Sengstaken Blakemore tube to control massive post partum haemorrhage. *Br J Obstet Gynaecol* 1994; 101: 249-260.
17. Akhter S, Begur MR, Kabirz Z, Rasheed M, Lela TR, Zabeen F. Use of condom in the treatment of massive Post Partum haemorrhage. *Med Gen Med* 2003; 5(3): 38.
18. Andrae B, Erickson LJ, Skoo GG. Anti Shock Trouser (MAST) and transcatheter embolization in the management of massive Obstetric haemorrhage. A report of two cases. *Acta Obstet Gynaecol* 1999; 78(8): 740-741.
19. Druzin M L. Packing of lower uterine segment for control of Post Caesarean bleeding in Instances of Placenta Praevia. *Surg Gynaecol Obstet* 1989; 169(6): 543-545.
20. Condous GS, Arulkumaran S, Symonds I, Chapman R, Sinha A, Razvi K. The "tamponade Test" in the Management of massive Post Partum haemorrhage. *Obstet Gynecol* 2003; 101(4): 767-72.