Original Article

B-Lynch Suture for the Management of Postpartum Haemorrhage: An Experience at Peoples Medical College Hospital Nawabshah

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ABSTRACT

Objective: To report our clinical experience of the effectiveness and safety of applying B-lynch suture for the management of primary postpartum haemorrhage.

Study Design: An observational, cross-sectional study.

Place and Duration of Study: This study was conducted at the Department of Obstetrics & Gynaecology at Peoples Medical College Hospital Nawabshah from 1st January 2009 to 30th June 2010

Materials and Methods: All the patients of primary postpartum haemorrhage in whom compression and conventional ecobolic had failed to achieve uterine contraction and haemostasis were subjected to B-lynch suture.

Results: B-lynch suture technique was applied in 33 patients, in 22 patients after vaginal delivery and in 11 patients at the time of cesarean section. This technique was successful in 31 (93.94 %) patients and failed in only 2 (6.1 %). Patients who were proceeded to hysterectomy, none of the patient had infection.

Conclusion: B-lynch suture compresses and envelopes the uterus and manages massive life threatening postpartum haemorrhage successfully. It is effective, simple and fertility conserving procedure.

Key Words: Postpartum haemorrhage, Uterine atony, B-lynch suture, Hysterectomy.

INTRODUCTION

Postpartum haemorrhage (PPH) is an obstetrical emergency that can follow vaginal or a cesarean delivery. Globally 600,000 maternal deaths occur each year and PPH is responsible for about one quarter of maternal mortality[1]. In developing countries PPH accounts for one third of all maternal deaths.[2]

Major obstetrical haemorrhage is the commonest cause of severe maternal morbidity as well with sequel such as shock, renal failure, acute respiratory distress syndrome, coagulopathy and Sheehan's syndrome.[3] So, severe obstetrical morbidity may be a more sensitive measure of pregnancy outcome than mortality alone.[4]

PPH is commonly due to abnormalities of one or a combination of four basic processes referred to as 4Ts. They include tone (Uterine atony), tissue (Retained products of conception), trauma (To genital tract) and thrombin (Coagulation abnormalities). Uterine atony is the commonest cause of PPH (75 – 90 %).[5]

The traditional management of PPH begins with conservative methods such as bimanual compression of uterus, use of uterotonic drugs, uterine packing and temponade with balloon. These are safe and effective but occasionally prove ineffective. Intervention like uterine, ovarian and internal iliac artery ligation, uterine artery embolization and hysterectomy need surgical skill, assistance and they are time consuming and complicated.

B-lynch compression suture described by Christopher B-lynch in 1997 as alternative to hysterectomy. It is an effective, simple and fertility conserving procedure. It compresses and envelopes the uterus and manage massive life threatening postpartum haemorrhage successfully.[6]

MATERIALS AND METHODS

This observational, cross sectional study was conducted from 1st January 2009 to 30th June 2010 in 33 patients in whom B-lynch suture was applied for the management of Primary Postpartum Haemorrhage (PPH) at Department of Obstetrics & Gynaecology, Peoples Medical College Hospital Nawabshah. The informed consent was obtained from the patients included in this study and the study was approved by ethical committee of hospital.

All the patients of PPH in whom manual compression and conventional ecobolic had failed to achieve uterine contraction and haemostasis are subjected to B-lynch suture.

PPH due to birth canal trauma or with irreversible shock or grand multipara were excluded from study. Patient is catheterized and under anaesthesia (General/Local), placed in Lloy-Devis position for access to vagina for the assessment of control of bleeding.

B-lynch suture technique involves the incision in lower uterine segment after dissecting down the bladder (In case of lower cesarean section, uterine cavity already opened). Uterine cavity is examined and evacuated. Uterus is exteriorized and bimanual compression is first applied to assess the potential chance of success of the procedure. Chromic 2 with 70 mm round bodied needle is used to enter and exit the uterus on the right lateral

border. The stitch is then looped over the fundus of uterus and another stitch is taken across the posterior lower uterine segment at the same level of the anterior stitch. This stitch is looped back over the fundus to lie anteriorly and needle enters and exits the left lower uterine segment to be opposite and parallel to the first bite. The both free ends of the suture are pulled taut and tight down, assisted by manual compression to achieve secure tension and haemostasis. Uterine incision is now closed. For patient with placenta praevia additional figure of eight sutures were placed over the bleeding point before the application of bleeding suture. B-Lynch sutures were applied by consultant or senior registrar on duty. The suture material used was Vicryl 1-0. All patients followed routinely. B-Lynch success was assessed by severity of PPH, number of transfusions, number of patients where B-lynch failed and preceded to hysterectomy and postoperative hospital stay. All the data was collected on preset proforma which also included age, parity and gestational age. The data was analyzed by using SPSS version 10.

RESULTS

The mean age ± SD was 26.87 ±5.57 and range was 18 – 40 years and mean parity ±SD 2.66 ±1.291 and gestational age ranged from 34 – 41 weeks. B-lynch suture technique was applied in 22 patients after vaginal delivery and in 11 patients at the time of cesarean section.

Table No.1: Cross Tabulation B-Lynch Suture Procedure and Blood Loss

	Blood Loss during Procedure			Total
	1000 – 1500 ml	1600 – 2000 ml	> 2000 ml	
Applied Successfully	10 (30.30%)	17 (51.5 %)	04 (12.1%)	31 (93.9%)
Failure	00	01 (3.0%)	01 (3.0%)	02 (6.1%)
Total	10 (30.3%)	18 (54.5%)	05 (15.2%)	33 (100%)

Table No.2: Cross Tabulation B-Lynch Procedure and Causes of PPH

	Blood Loss during Procedure		Total
	Uterine Atony	Placental Causes	
Applied Successfully	25 (75.8 %)	06 (18.2 %)	31 (93.9%)
Failure	02 (6.1 %)	00	02 (6.1%)
Total	27 (81.8 %)	06 (18.2 %)	33 (100%)

The estimated blood loss was 1000 – 1500 ml in 10 (30.3%) patients, 1600 – 2000 ml in 18 (54.5%) patients and > 2000 ml in 5 (15.2%) patients (Table-1).
Twenty seven (81.8 %) patients had uterine atony and 06 (18.2 %) patients had placental causes of PPH (Table-2) and B-lynch was successful in 31 (93.94 %) patients and failed in only 2 (6.1 %) patients and proceeded to hysterectomy.

All the patients discharged within 7 days. None of the patients had infection. All the patients were in satisfactory condition at the time of discharge and no complications develop during three month follow-up.

DISCUSSION

It has been estimated that more than 125,000 women died of postpartum haemorrhage (PPH) each year.[7] It remains one of the top three causes of direct maternal death.[8]
Uterine atony is a most common cause of PPH (75-90%) [5] and death can occur within two hours if not managed immediately.[3] When conservative management of PPH fails to control non traumatic blood loss, operative intervention is required. Before proceeding to last option i.e. hysterectomy, B-lynch compression suture, stepwise uterine devascularization or uterine artery embolization can be considered. The later two options required special surgical training or the possibility of emergency intervention radiology and may thus not be an option in an emergency situation.
The B-lynch surgical technique for the management of massive postpartum haemorrhage has been used successfully since 1989. The technique is particularly useful when preserving the uterus and retaining fertility potential is extremely vital.[9]
Worldwide many cases have been performed successfully.[10, 11, 12] There are very few cases of failure reported. These failures were because of delay in application, poor technique, inappropriate material, placenta percreta and coagulopathy.[13] In Pakistan, few studies of B-lynch suture technique have been reported.[14, 15] According to their results; this technique is very effective for the management of PPH. In our study, out of 33 patients, only 02 (6.06 %) patients ended up in hysterectomy and in 31 (93.94 %) patients, it was very successful.
B-lynch suture may also beneficial in cases of placenta praevia, placenta accrete, increta and percreta.[16, 17] In our study, 6 (18.18 %) patients had PPH of abnormal placentation and managed with this technique effectively along with placement of haemostatic suture where needed. There have been isolated reports of adverse consequences of B-lynch suture application.[18, 19] Majority of studies reported no immediate or long term complications and many patients on long term follow up have demonstrated resumption of periods and successful pregnancies.[12, 20]
In developing countries like Pakistan, this simple, inexpensive and quick procedure is of great value to save the life and fertility of woman. This can be performed by surgeon with average skill with limited resources and it can be considered by prophylactic and therapeutic purposes.

CONCLUSION

B-lynch suture compresses and envelopes the uterus and manages massive life threatening postpartum haemorrhage successfully. It is effective, simple and fertility conserving procedure.

REFERENCES

1. World Health Organization (WHO). Recommendations for the prevention and postpartum haemorrhage (Summary of results from a WHO technical consultation, October 2006). Geneva: WHO; 2007.
2. Khan KS, Wojdyla D, Say L, Gulmezoglu AM, Van Look PF. WHO analysis of causes of maternal death: a systematic review. Lancet 2006;367: 1066-74.
3. Abou-Zahr C. The global burden of maternal health and disability. British Medical Bulletin 2003; 67: 1 – 11.
4. Stergios K.D, Sabaratnam A. Postpartum haemorrhage: Changing practices. In: William D, William LL, editors. Recent Advances in Obstetrics and Gynaecology. London: Royal Society of Medicine Press Ltd; 2008.p.89.
5. Mousa H, Alffirevic Z. Treatment for primary postpartum haemorrhage (Cochrane Review). The Cochrane Library, Vol: 01. Oxford: Updated Software; 2003.
6. B-Lynch C, Coker A, Lawal AH, Abu J, Crown MJ. The B-lynch surgical technique for the control of massive postpartum haemorrhage: an alternative to hysterectomy? Five cases reported. Br J Obstet Gynaecol 1997; 104: 372 – 5.
7. Drife J. Management of primary postpartum haemorrhage. Br J Obstet Gynaecol 1997; 104: 275– 7.
8. Lewis G editor. The confidential enquiry into maternal and child health (CEMACH). Saving mother's lives: Reviewing maternal deaths to make motherhood safer – 2003 – 2005. The seventh report on the confidential enquiries into maternal deaths in the United Kingdom. London. CEMACH, 2007.
9. Hilda H, Roel N, Aad H, Julien D, Paul P van den Berg. The B-lynch technique for postpartum haemorrhage: an option for every gynaecologist. Eur J Obstet & Gynaecol and Reprod Biol 2004; 115: 39 – 42.
10. Koh E, Devendra K, Tan LK. B-Lynch suture for the treatment of uterine atony. Singapore Med J 2009; 50 (7): 693 – 7.
11. Price N, B-Lynch C. Technical description of the B-lynch brace suture for the treatment of massive postpartum haemorrhage and review of published cases. Int J Fertil Women Med 2005;50: 148 – 63.
12. Fotopoulou C, Dudenhausen JW. Uterine compression sutures for preserving fertility in severe postpartum haemorrhage: An overview 13 years after the first description. J Obstet & Gynaecol 2010;30 (4):339 – 49.
13. B-Lynch C. B-lynch brace suture (technique details), Available at htt://www.cblynch.com/ html/technique.html accessed September 25, 2003.
14. Naheed F, Shakila Y, Joveria S. Combined use of B-lynch brace suture and uterine packing in primary postpartum haemorrhage: Saving life and fertility. J Surg Pak 2010; 15 (3): 144 – 46.
15. Faruqi NJ, Javed I, Yousaf F, Salick A, Alam AN, Nausheen S. B-lynch suture for the management of postpartum haemorrhage – A local experience. Annals 2004; 10 (4): 370 – 73.
16. Chez R, B-Lynch C. The B-Lynch suture for control of massive postpartum haemorrhage. Contemp Obstet Gynaecol 1998; 43: 93 – 8.
17. Chaudhary P, Sharma S, Yadav R, Dhaubhadel P. B-Lynch brace suture for conservative surgical management for placenta increta. Katmandu University Med J 2003; 2 (2): 149 – 51.
18. Grotegut CA, Larsen FW, Jones MR, Livingstone E. Erosion of a B-Lynch suture through the uterine wall: a case report. J Reprod Med 2004;49:849-52.
19. Joshi MV, Shrivastava M. Partial ischaemic necrosis of the uterus following a uterine brace compression suture. BJOG 2004; 111: 279 – 80.
20. Tsitlakidis C, Alalade A, Danso D, B-Lynch C. Ten year follow up of the effect of the B-lynch uterine compression suture for massive postpartum haemorrhage. Int J Fertil Womens Med 2006;51 (6): 262-5.

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