ORIGINAL ARTICLE

Evaluation of B-Lynch Technique as an Alternative of Hysterectomy in Arresting Massive Postpartum Haemorrhage

ABIDA NASREEN[1], JAMILA M. NAIB[2]

ABSTRACT

Aim: To determine the efficacy of B lynch brace suture in control of intractable post- partum hemorrhage (PPH).
Methods: This observational case series was conducted at Department of Obstetrics and Gynaecology Unit A, Khyber Teaching Hospital Peshawar over period of two years from 1st June 2007 to 30th June 2009. Women with intractable post partum hemorrhage not responding to uterotonic agents had "B-lynch" brace suture applied. All those patients with primary PPH due to uterine atony were included in this study and Patients had primary PPH because of other causes and secondary PPH were excluded.
Results: During 2 years of study period 12 patients had B-lynch brace suture application. Among those 10 patients responded satisfactorily while one case had uterine artery ligation in addition to B-lynch suture and one case had subtotal abdominal hysterectomy via laparotomy after B-lynch brace suture.
Conclusion: Because of its simplicity and capacity of its preserving uterus in case of PPH due to uterine atony this procedure may be considered as the first line surgical treatment before considering hysterectomy especially in young patients who still have to complete their family.
Keywords: Post partum hemorrhage, Uterine atony, B-lynch brace suture

INTRODUCTION

According to World Health Organization primary post partum hemorrhage is defined as the "loss of 500mls or more of blood from the genital tract within 24 hours of the birth of a baby"[1]. Worldwide the Maternal mortality rate is estimated about 400 maternal deaths per 100,000 live births and Post partum haemorrhage (PPH) is its leading cause[2]. In under developed countries, Post partum haemorrhage related maternal deaths are even more common[3,4].

Post partum haemorrhage is a fatal obstetrical emergency without prompt diagnoses and timely management.[5] About 5% of normal vaginal delivery patients end up with life threatening post partum haemorrhage. The common causes of PPH include: flaccidity of myometrium, genital tract tears, retained products of conception like placental remnants, coagulopathy, uterine inversion and ruptured uterus, in short these factors can be summarized in the form of "4T's" (tone, tissue, trauma, thrombin)[6].

Postpartum haemorrhage management require a team work and moreover all the resources needs to be mobilized[7,8]. Management methods range from bimanual compression and pharmacological intervention to open surgical exploration[9].

[1]Assistant Professor, [2]Associate Professor Department of Gynecology & Obstetrics, Khyber Teaching Hospital Peshawar
Correspondence to Dr. Abida Nasreen e-mail: abidaibrar@yahoo.com

The surgical methods varies depending on the site of bleeding, its severity and the haemodynamic condition of the patient.[5] Surgical methods may range from ligation of uterine arteries to internal iliac arteries ligation but here in this context the B-lynch technique is being elaborated [10].

PATIENTS AND METHODS

This was an observational case series study conducted at the Department of Obstetrics and Gynaecology Unit A, Khyber Teaching Hospital, Peshawar over the period of 02 years from June 2007 to June 2009. All the patients who had primary post partum haemorrhage due to uterine atony were included in the study. For data collection a questionnaire was developed. Detailed history about the age, parity, mode of delivery, previous history of PPH duration of labour induction of labour instrumental deliveries, C/section gestational age was recorded. Those patients having primary PPH due vulval, vaginal, peri urethral, cervical, perineal laceration or tear and uterine rupture were excluded from the study. Different medical and surgical measures used for management of primary PPH due to uterine atonia were used. General physical, systemic and pelvic examination performed for diagnosis of specific complication. Relevant investigations like blood complete, blood group, cross matching, hepatitis screening and clotting profile required, were performed for the management of

primary PPH, conservative measures done before doing surgical intervention i.e. uterine message, Inj syntocinon 10iu intravenous state, along with 60 units of syntocinon in 1000 cc R/Lactate infusion, Inj PGF2X intra myometrally, Inj syntocinon 10i.u intra mymetrally, insertion of misopostol 800ugm per rectally in cases of massive post partum haemorrhage women with interactable post partum haemorrhage not responding to utertonic agents had B-lynch brace suture applied, preoperatively in caesarean section and by laparotomy in patient having PPH after normal vaginal deliveries and instrumental deliveries. Mr. Lynch in this technique applied 2 embracing suture connected together at the lower end of the uterus (Figs. 1-2)[11]. Then from the intra uterine position it is brought out through the anterior uterine wall (site 2), wrapped over the fundus 3-4cm medial to the corneal area of the fallopian tube, and inserted through posterior uterine wall at site 3 (Fig. 2). From the intra uterine position the needle was directed through the posterior wall at site 4 then wrapped over the fundus and directed into and out of the anterior uterine wall at sites 5 and 6, respectively (Fig. 1). Then the uterus was compressed and suture tied across the lower uterine segment. The suture was applied with same technique as used by B-lynch et al[10] except that they recommended No. 2 chromic catgut and in our unit we use vicryl No. 2 (45mm round body, non cutting needle) post operatively patient were kept for 6 days with antibiotic cover then discharge & follow up done after 2 weeks. Data was analyzed by using SPSS version 10. Descriptive statistics in terms of percentages were determined and chi square test was applied to compare the frequency of different causes of PPH.

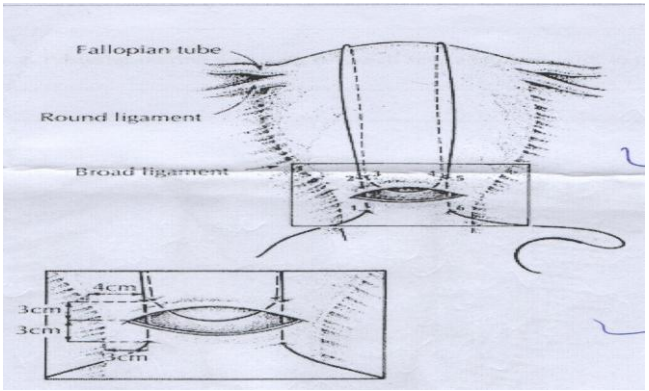

Fig. 1: The needle was inserted through anterior uterine wall at site

RESULTS

Among 6297 patients delivered during this period 159 patients had primary PPH (2.14%). Among 159 patients, 46 patients delivered normally (28%) 51 patients (32%) had normal vaginal delivery with episiotomy, 18 patients (11.31%) by outlet forceps delivery 10 patients (6.1%) by vacuum and 34 patients (21%) had caesarean section. Among these 34 patients 5 patients had PPH because of placenta previa while 29 patients have uterine atonia during C/Section 48 patients who had PPH because of uterine atonia, 29 patients delivered by C/section. Among 159 patients 57 were primigravida, 73 multigravida, 16 grand multigravida while 13 patients were great ground multigravida. Among 48 patients of uterine atonia 29 patients, were ground and great multigravida. Seven patients had twin deliveries and one patient had triplet vaginal delivery. Thirty three patients responded to simple conservative measures including intra venous syntocinan 10i.u i/v state and 50 i.u in 1000cc R/lect solution. Inj PGF2x intra mynectrially and per rectal misoprostol (saollgms) while 2 patients had stitches in placental beds because of placenta previa. In 12 patients of B-lynch suture the one who had subtotal hysterectomy was great grand multi gravida and the 1 patient who had bilateral uterine arteries legation in addition to B-lynch had type IV placenta previa in addition to uterine atonia, 6 patients were multigravida, 2 patients were grand multigravida and 2 patients were primigravida.

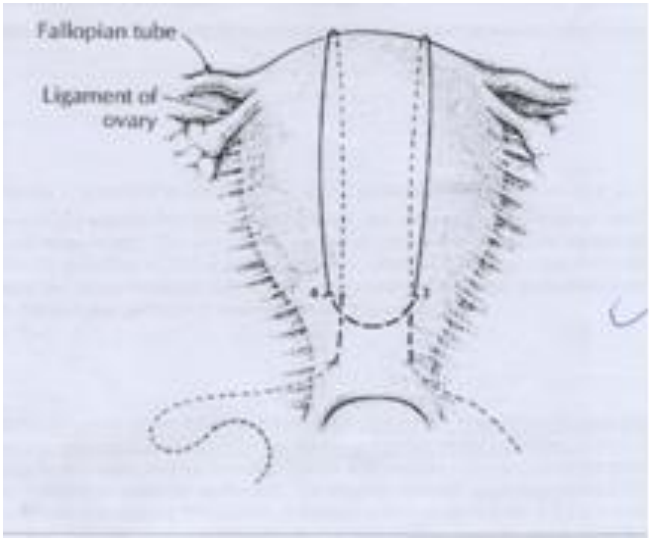

Fig. 2: Intra-uterine position it is brought out through the anterior uterine wall

Table 1: Mode of delivery in patients with PPH (n = 159)

Mode of delivery	No.	%
NVD	46	28.9
NVD with episiotomy	51	32.0
Outlet forceps delivery	18	11.4
Vacuum	10	6.3
C section	34	21.4

Table 1: Mode of delivery in patients with PPH (n = 159)

Mode of delivery	**No.**	**%**
NVD	46	28.9
NVD with episiotomy	51	32.0
Outlet forceps delivery	18	11.4
Vacuum	10	6.3
C section	34	21.4

Table 2: Uterine atonia (n=48)

Uterine atonia	No.	%
Grand multigravida	16	33.4
Great ground multi gravida	13	27.0
Twins	7	14.7
Triplet	1	2.0
Others	11	22.9

Table 3: Frequency of different causes of PPH

Cause of PPH	**No.**	**%**
Uterine atonia	48	30.3
Genital tract tears	109	68.5
Uterine inversion	1	0.6
Uterine fibroid	1	0.6

Table 4: Management of cases of uterine atony (n=48)

Management	**No.**	**%**
Conservative	34	70.8
Placental bed sutures	2	4.2
B-Lynch suture	12	25.0

Table 5: Application of B. Lynch during different procedures (n = 12)

Application	**No.**	**%**
Caesarean Section	10	83.4
NVD followed by laparotomy	2	16.6

Table 6: Outcome of B. Lynch (n = 12)

Outcome	**No.**	**%**
Completely successful	10	83.4
Additional uterine artery ligation	1	8.3
Hysterectomy	1	8.3

DISCUSSION

Post partum hysterectomy is one of the lifesaving surgical procedures in the management of sever post partum haemorrhage. In Placental abnormalities for example placenta previa and variations of placenta accrete, caesarean hysterectomy is commonly indicated.[12] But this a major surgical procedure for the patients of already compromised physiology hence this procedure is not devoid of complications which include further blood loss, long operative time, and infection morbidity and transfusion rates, in addition to future loss of fertility.[13] A variety of surgical techniques have been proposed to avoid hysterectomy, each is associated with identifiable benefits and risks. Ligation of ovarian, uterine or internal iliac arteries is recommended, in most cases of massive haemorrhage. One series[14] shows that bilateral uterine artery ligation was successful in 95% of cases in arresting haemorrhage; but it failed in cases of placenta previa or accreta. Bilateral internal iliac ligation is successful in avoiding hysterectomy in about half of the cases. However, delay in carrying out procedure leads to a poor prognosis. It also has a number of recognized potential complications, including ligature of external iliac artery, damage to internal or external iliac veins, urethral injury and retroperitoneal hematoma. Uterine packing is another attractive alternative option but there is a significant risk of continued haemorrhage and infection.[15]

The brace suture initially reported by B-Lynch[10] and emerged as very useful alternative to hysterectomy and other surgical interventions for control of massive postpartum haemorrhage and can be performed even in cases of placenta previa and accreta. The aim of this technique is to provide uterine compression just like bimanual compression. Moreover this technique is cost effective, easy to learn and avoids all the complications associated with post partum hysterectomy.

B-Lynch et al[10] reported 5 cases, where this suture technique was used successfully to control massive PPH. Pal et al[16] reported 6 cases of primary PPH during caesarean section in primigravidas who underwent B-Lynch suturing and none of them required blood transfusion or developed DIC. Postoperative recovery was uneventful in all these cases. Similarly, Mazhar et al[17] reported two cases of intractable PPH managed by brace suturing.

In a case report [18] this technique was applied as "last ditch" measure before hysterectomy. Anjali et al[19] reported a case of placenta accreta causing spontaneous rupture of uterus in late pregnancy and managed by closure of defect and putting B-Lynch suture together with bilateral uterine artery ligation.

In this current surgery, all the patients showed uneventful recovery. Our series of seven patients illustrates the usefulness of the B-Lynch procedure in the management of intractable PPH, thus avoiding hysterectomy. To date, we have no further data of continued fertility in patients whose uteruses were conserved. There is no randomized controlled data comparing B-Lynch procedure to other methods of haemostasis for PPH, and it is unlikely that such data would ever be forthcoming, given that PPH is often unanticipated and occurs under urgent or life-threatening situations, thereby rendering extremely difficult, if not impossible, to implement and ethically questionable.

The B-lynch technique use here, is a simple and effective procedure with conservation of the uterus for future fertility in the child bearing age group of the patients successful pregnancies has been reported

by B-lynch when advanced surgical techniques are not available the choice will be for b-lynch.

A study conducted in Islamabad[20] during April 2005, 5 cases had B-lynch brace suture application, 4 women responded satisfactorily while one required caesarean hystrectomy.

CONCLUSION

B-lynch and its modified brace or compression technique is a simple and cost effective and uterus conserving procedure thus fertility is preserved .It is easy to learn which requires basic surgical skills.

REFERENCES

1. WHO. The prevention and management of post partum haemorrhage report of technical working group. Geneva: World health organization, 1990.
2. WHO. The world health report 2005 Make every mother and child count. Geneva: World Health Organization, 2005.
3. Khan KS, Wojdyla D, Say L, Gulmezoglu AM, Van LooK PF. WHO analysis of causes of maternal death: a systemic review. Lancet 2006;267:1066-74.
4. American college of obstetrician and Gynecologosts. Post partum haemorrhage. ACOG educational bulletin No. 243 Washington DC: American College of Obstetricians and Gynaecologists 1998.
5. Milibary AM. Modified B-lynch technique for the control of massive post partum hemorrhage an alternative to hysterectomy. Saudi Med J 2004;25(12):1999-2000.
6. Sturgis K. Doumouchtsis Sabaratnam. Arulkumaran. Post partum haemorrhage: changing practice. Recent advances vol:24.page 89-103
7. Varner M. obstetrics emergencies ()post partum haemorrhage) crit care clin 1991:7:883-97.
8. Reports on confidential enquiry into maternal deaths in England and wales 1982-1984. London (UK) :HMCO; 1989.
9. Bobrowsri RA, Jones JB, A thrombogenic uterine pack for post partum haemorrhage. Obstect Gynecol 1995;85:836-7.
10. B-Lynch C, Corer A, Lawal AH, Abu J, Cowen MJ. The B-lynch surgical technique for the control of massive post partum haemorrhage. An alternative to hysterectomy? Five cases reported Br J Obstet Gynaecol 1997;104:372-5.
11. Ferguson JE, Bourgeois FJ, Underwood PB, B-lynch suture for postpartum haemorrhage. Am J Obstet Gynecol 2000; 95(6): 1020-22.
12. Oyelese Y, Smulian JC. Placenta previa, placenta accreta, and vasa previa. Obstet Gynecol 2006; 107(4): 927–41.
13. Machado LSM. Emergency peripartum hysterectomy: Incidence, indications, risk factors and outcome. N Am J Med Sci 2011; 3(8): 358–61.
14. O'Leary JA. Uterine artery ligation in the control of postcesarean haemorrhage. J Reprod Med 1995; 40(3):189–93.
15. 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: 420-22.
16. Pal M, Biswas AK, Bhattacharya SM. B-Lynch Brace suturing in primary postpartum haemorrhage during caesarean section. J Obst. Gynaecol Res 2003; 29(5): 317-20.
17. Mazhar SB, Yasmin S, Guljar S. Management of massive postpartum haemorrhage by "B-Lynch" brace suture. J Coll Physicians Surg Pak 2003; 13(1): 51-2.
18. Yasmin S. B-Lynch brace suture as an alternative to hysterectomy for severe PPH. Pakistan J Med Res 2003; 42(3):146-8.
19. Anjali G, Smriti N, Pushpa D, Meennakshi C, Krishna S. Placenta percreta causing spontaneous uterine rupture in late pregnancy: conservative surgical management. ANZJOG 2003; 43(4): 334.
20. Mazhar SB, Gul-e-Irum. Fetomaternal outcome in pregnancy with cardiac disease. J Coll Physicians Surg Pak 2005;15(8):476-80.