

A Clinical Study of Effectiveness of B-Lynch Sutures to Control Postpartum Hemorrhage [PPH] in the Atonic Uteri and Their Outcome

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Abstract: Postpartum Hemorrhage in atonic uterus with 'C' section is an important complication and commonly encountered condition. We in the present study tried to evaluate the effectiveness of B-Lynch suture to control PPH in atonic uterus. The study was conducted on n=100 patients in the Department of Obstetrics & Gynecology, Rajiv Gandhi Institute of Medical Sciences [RIMS] Adilabad during Feb 2016 to Dec 2017. 50% of patients were in age groups 20-25 years and 26% belonged to age groups 25-30 yrs and 24% were in the age group of 30- 35 yrs. Primi gravida was in 75% of the cases and 25% of cases were second gravid. Hydramnios was present in 20% of cases PET was in 25% of cases, prolonged labour was in 30% of cases and Previous LSCS and PET was present in 25% of cases each. In 76% of cases no blood transfusion was required, 15% of cases required 1 unit blood transfusion, and 9% required 2 units' blood transfusions. The complications due the procedure were nil and mortality was nil. Conclusion: The B-Lynch suture is still one of the best methods to control Postpartum Hemorrhage PPH in atonic bladder especially in low resource settings. If used properly it can control PPH without need of blood transfusions and complications and the procedure also preserves the uterus functions and future fertility.

Keywords: B-Lynch Sutures, Postpartum Hemorrhage, atonic uterus.

INTRODUCTION

Maternal mortality is defined as death of a woman while pregnant or within 42 days of termination of pregnancy. Maternal mortality rate is considered as a strong indicator of international development, developing countries strongly focus on preventable deaths especially from maternal causes [1]. Postpartum hemorrhage [PPH] is defined as estimated maternal blood loss of 1500 ml [2]. This hazardous hemorrhage is known by the violence of the discharge, wetting fresh cloths as fast as they are applied; from the pulse becoming low and weak, and the countenance turning pale; then the extremities grow cold, she sinks into fainting and, if the discharge is not speedily stopped, or diminished, is seized with convulsions which often terminate in death" [3]. It is one of the leading causes of maternal mortality and it is estimated that every year 125,000 women die every year because of this complication [4]. The World Health Organization estimated 20 million annual maternal morbidities due to haemorrhage [5]. In the developing world, the risk of maternal death from PPH is approximately one in 1000 deliveries [6]. PPH remains among the top five causes of maternal death in both the developing and developed world. It is estimated that over 1,25,000 women in

developing countries die of PPH each year out of 125 million births [7]. Uterine atony is the most common cause of primary postpartum haemorrhage. Although atonic PPH has various predisposing factors, it can occur without any apparent cause. Unplanned caesarian delivery may end in atonic PPH, putting the surgeon in dilemma in management of atonic PPH regarding conservation of uterus or peripartial hysterectomy [8]. Conservative treatment such a bimanual compression of the uterus can control blood loss while resuscitative measures are undertaken. Uterotonics such as tyntocinon, prostaglandins may be used. The surgical management of PPH in the past has included use of intra-uterine pack with or without thromboxane [9]. A conservative procedure as describe by B-Lynch *et al.*, in 1997 [10] uterine artery ligation, hypogastric artery ligation, x-ray guided artery embolization and hysterectomy may be performed. This technique consists of corporal compressive suture of the uterus that can be associated with a separate anteroposterior suture of the lower uterine segment [11]. The latter part of this procedure appears to fulfill most of the desired characteristics and could be effectively used to treat hemorrhage after removal of placenta previa. Therefore we in the present study decided to study the effects of

B-lynch suture of the lower uterine segment for the treatment of atonic PPH.

MATERIALS AND METHODS

The study was conducted in Department of obstetrics and gynecology, Rajiv Gandhi Institute of Medical Sciences and Hospital [RIMS], Adilabad during the period from Sept 2015 to Dec 2017. A total of 100 patients diagnosed with the clinical conditions of Hydramnios in 20%, Pre-eclamptic toxemia [PET] 25%, and previous LSCS in 25% of cases placenta. All the patients underwent ‘C’ section with post-operative PPH due to atonic uterus. At the beginning of the surgical procedure all the patients were in stable condition and coagulation profile and other laboratory parameters were within the normal range. During the surgical procedure blood loss was measured from the moment of placental removal based approximately on the amount of blood aspirated from surgical fields. After surgical delivery 5 IU oxytocin IV bolus was given, followed by 20 IU Oxytocin in 500 ml for 10-15 mins. Initially manual compressing of lower uterine segment was applied for at least one minute to stop

bleeding. If bleeding reappeared then B-Lynch suture was used for controlling atonic PPH. A No. 2 Catgut suture with round body needle was taken and suture was passed from anterior to posterior aspect of uterus starting from a point 3 cm below the uterine wound and 2-3 cm medial to lateral border. Two such sutures were applied on either side with simultaneous application of manual pressure and to compress the uterus and tied tightly with surgical knots. Damage or injury to fallopian tubes was avoided during the procedure. Success of the procedure was assessed by absence of fresh bleeding/clots in the vagina before the closure of abdomen. The standard post-operative care was taken and patients were followed up for 3 months for any complications. In all the 100 cases caesarian hysterectomy was not required.

RESULTS

A total of 100 patients were included in the study, the most common age group of patients were 20-25 years 50% of patients belonged to this group. Followed by 25 – 30 yrs 26% and 24% were in 30 -35 yrs age group given in Table-1.

Table-1: Distribution of patients in the study

Age group in years	Number of patients / Percentage
20 – 25	50
25 – 30	26
30 – 35	24
Total	100

The clinical conditions of the cases involved in the study were Hydramnios in 20%, Pre-eclamptic

toxemia [PET] 25%, Hydroamnios 20%, and previous LSCS in 25% of cases given in Table-2.

Table-2: the procedure was done in the following cases

Case presentation	Number of patients / Percentage
Hydramnios	20
Pre-eclamptic Toxemia [PET]	25
Prolonged Labour	30
Previous LSCS	25

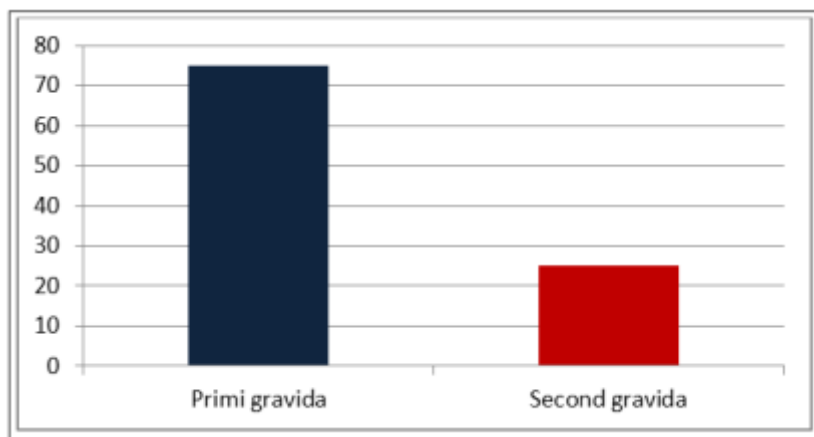


Fig-1: Distribution of procedure as per gravida

In the study cases operated 75% were Primi and 25% were second gravid shown in figure-1.

The success of the procedure was also assessed by lesser requirements of blood transfusions post

operatively. No blood transfusion was required in 75% of cases and 1 unit blood transfusion was given in 16% of cases and 2 units of blood transfusions was given in 9% of cases shown in figure-2. Post operative follow up for complications morbidity and motility was nil.

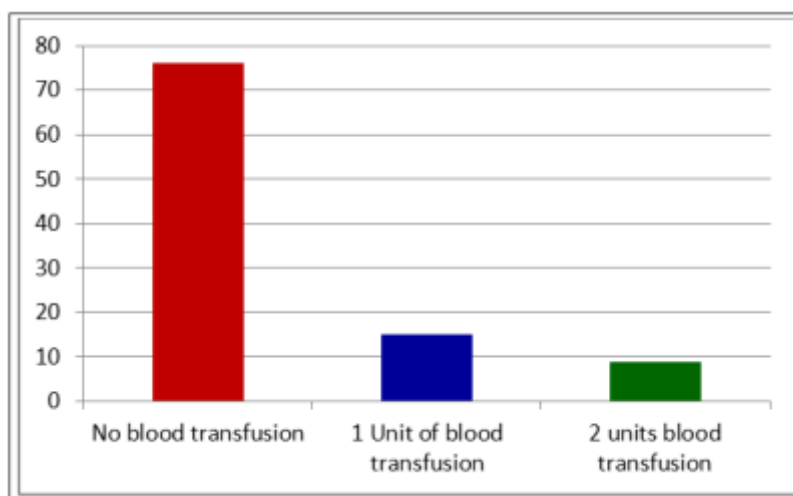


Fig-2: Requirements of blood transfusion

DISCUSSION

PPH in atonic bladder is a common emergency in obstetrics and leading cause of mortality and morbidity [12]. The management of PPH might differ depending on the case and causes and route of delivery. One of the common causes of PPH is atony of uterus in approximately 80% of cases. Since the majority of cases of PPH are due to uterine atony, primary interventions should be targeted to preserve the uterine contractions by uterotonic drugs and uterine massage. We in the present study followed the same procedures. These conservative treatment fail to stop PPH then use of sutures such as B-Lynch should be considered. Surgical methods controlling uterine bleeding by inserting compression sutures have been developed to reduce the incidence of emergency hysterectomy and to preserving fertility in these patients. B-Lynch suture is an alternative operative method for stopping PPH especially in uterine atony. B-lynch described a surgical technique in 1997 for compression and opposition between the anterior and posterior walls of the uterus [10, 13] modified B-Lynch technique was described by some authors [14, 15]. The efficacy of B-Lynch suture has been reported to be up to 80%. [16 -19] In the present we had success rates of 75% these patients did not required any blood transfusions. There have been reports of adverse consequences after B-Lynch sutures, like erosions through uterine walls [20] partial ischemic necrosis of the uterus [21, 22] and risk of uterine synechia developing later [23] some studies have reported slippage of or overlapping of the suture which by using of B-Lynch sutures. In the present we did not have any such complications; we in the present study have taken adequate care of the possible complications.

Sometimes uterine artery ligations have been performed along with B-Lynch sutures however such artery ligations are associated with complications such as devascularization in lower uterine segments and increasing in risk of abnormal placentation in subsequent pregnancies especially in cases of previous CS [1, 14, 24]. Hysterectomy are required to be performed in PPH cases resistant to conservative medical and surgical managements [25]. In a study by Danisman *et al.*, [26] 61 severe PPH patients and evaluated the efficacy of treatment modalities in these patients. The overall hysterectomy rates was 41% and Kaya *et al.*, [27] evaluated 36 PPH cases of patients with uterine atony refractory to medical managements treated with B-Lynch compression suture with or without other surgical procedures. In our study we did not have any case requiring hysterectomy.

CONCLUSION

The B-Lynch suture is still one of the best methods to control Postpartum Hemorrhage PPH in atonic bladder especially in low resource settings. If used properly it can control PPH without need of blood transfusions and complications and the procedure also preserves the uterus functions and future fertility.

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