

# COMBINED USE OF B-LYNCH BRACE SUTURE AND UTERINE PACKING IN PRIMARY POST PARTUM HEMORRHAGE: SAVING LIFE AND FERTILITY

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## ABSTRACT

*Objective* To find out the effectiveness and safety of combined use of B-Lynch brace suture and uterine packing in primary postpartum hemorrhage.

*Study design* Descriptive case series.

*Place & Duration of study* Obstetrics and Gynaecology Unit II, Bahawal Victoria Hospital Bahawalpur, from September 2007 to August 2009.

*Methodology* Patients of primary postpartum hemorrhage (PPH) at cesarean section and after vaginal delivery, who were refractory to the routine medical treatment, were subjected to the application of B-Lynch brace suture combined with peroperative uterine packing with saline soaked rolled gauze.

*Results* A total of twenty two cases were managed by study protocol. Only two patients (9.1%) had secondary PPH after removal of the uterine packing that was managed by obstetrical hysterectomy. In all other patients (90.9%) there was an effective control of the bleeding. None of the patients had infection.

*Conclusions* Combined use of B-Lynch brace suture and uterine packing is an effective and safe method to control primary postpartum hemorrhage, hence saving life and fertility.

*Key words* B-Lynch brace suture, Uterine packing, Primary postpartum hemorrhage.

## INTRODUCTION:

Postpartum hemorrhage is the most common cause of maternal mortality and accounts for one-quarter of all maternal deaths. In the developing countries it accounts for almost one-third of all maternal deaths.<sup>1,2</sup> Severe obstetric morbidity may be a more sensitive measure of pregnancy outcome than mortality alone and out of obstetric complications the disease specific morbidity is highest for hemorrhage.<sup>3</sup>

The baseline incidence of postpartum hemorrhage

has been estimated as 4-6% of all pregnancies.<sup>4</sup> Recurrence will depend on the cause but overall a previous history of postpartum hemorrhage carries a recurrence risk of about 20-25%.<sup>5</sup> Postpartum hemorrhage is commonly due to the abnormalities of one or a combination of four basic processes.<sup>6</sup> They are referred to as "4Ts" namely tone (poor uterine contractions), tissue (retained products of conception or blood clots), trauma (to the genital tract) and thrombin (coagulation abnormalities). Uterine atony is the main cause of postpartum hemorrhage accounting for about 75-90% of all cases.<sup>6</sup>

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In our setup where half of the obstetric population is anemic, the risk and incidence of postpartum hemorrhage is very high. The purpose of application of this technique is to evolve a method that is less time consuming and readily effective than

progressive pelvic devascularization and hysterectomy, thus saving life of women along with saving uterus and fertility.

#### **METHODOLOGY:**

All patients who developed primary postpartum hemorrhage were included in the study. Those patients in whom bleeding was controlled with routine medical management or in whom, the cause of bleeding was trauma to the genital tract or retained products of conception, were excluded.

All the patients were subjected to the application of B-Lynch brace suture with chromic catgut no.2. Then uterine cavity was packed with saline soaked rolled gauzes. Firstly one end of the gauze was passed through the cervix for the easy removal afterwards. After that, lower segment up to the incision line, was packed. Other rolled gauze was used to pack the fundus and cornu of the uterus. Both the gauzes were tied at the incision line and uterus was stitched in two layers taking care that no piece of the rolled gauze was entrapped in the stitches. The B-Lynch suture was then tied and patient assessed for any vaginal bleeding. If no bleeding noted then abdomen was closed. Oxytocin infusion, 40 IU in 1000ml Hartman solution, was setup and continued for 24 hours.

Patients were monitored every half an hour for vital signs and vaginal bleeding for first 6 hour and then hourly. Uterine packing was removed in the morning after 24-36 hours. During this period patients were given intravenous antibiotics. Blood transfusion was done according to preoperative hemoglobin level and the amount of blood loss. All the patients were kept in the hospital for seven days and monitored for secondary postpartum hemorrhage and infection.

#### **RESULTS:**

Out of twenty two, eight patients were having uterine atony, four after vaginal delivery and four at the time of cesarean section. Eight patients had placenta previa and lower segment was bleeding, while four patients had couvelliur uterus after abruptio placentae. In two patients placenta was morbidly attached at previous myomectomy scar and after removal of placenta there was heavy bleeding. Majority of the cases (n 14) were having intraoperative PPH i.e. the abdomen and uterus were already open to deal with our treatment protocol. The remaining eight patients were shifted to the theater and laparotomy was performed; uterus was opened with the lower segment transverse incision.

Only two patients underwent secondary postpartum

hemorrhage after removal of the uterine packing, necessitating obstetrical hysterectomy to manage it. In all other patients (90.9%) there was an effective control of the bleeding. None of the patients had infection.

#### **DISCUSSION:**

Blood vessels supplying placental bed run through an interlacing network of myometrium. The main driving force to control bleeding from the placental bed is myometrial contraction and constriction of blood vessels. Active management of third stage of labor enhances this physiological process and reduces blood loss. Absence of this mechanism leads to PPH in placenta previa because of lack of these living ligatures in the lower segment.<sup>7,8,9</sup>

Postpartum hemorrhage is still a challenge for the obstetricians and a major cause of maternal mortality and morbidity. Surgical management starts with the uterine packing but it is not frequently used method. The other option is laparotomy and compression suture application. B-Lynch brace suture is effective and safe method which was used in this study. It can only controls upper segment bleeding.

Combined use of uterine packing and B-Lynch brace suturing results in direct compression of uterine walls in upper as well as lower segment thus compressing from both surfaces and this combined effect helps in securing blood loss and both of these were used in this study population. The lower segment bleeding that does not sometimes respond to B-Lynch alone or even uterine or internal iliac ligation also respond to combined use of uterine packing and B-Lynch suture, as reported in literature.<sup>10</sup>

The best known version of the hemostatic brace suture was described by B-Lynch in 1997.<sup>11</sup> A review published in 2005 summarized nine case series of B-Lynch suturing (a total of 32 patients), reporting success in all but one case. Uterine packing for the tamponade effect has been practiced since long and new variant of it like, balloon tamponade, are being used recently.<sup>12</sup> Combined use of balloon tamponade and B-Lynch suture has been used to arrest the PPH after mid trimester termination of the pregnancy. But it is for the first time that uterine packing and B-Lynch suture are being used to arrest the bleeding from upper as well as lower uterine segment where B-Lynch alone was thought to be ineffective. However combination of both these techniques is not only fast but also easy to learn, apply and highly effective in primary PPH as demonstrated in this series.

**CONCLUSION:**

Combined use of B-Lynch brace suture and uterine packing was an effective, safe, and easy method to control primary postpartum hemorrhage hence saving life and fertility.

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