



ANALYSIS OF EFFICACY AND LIMITATION OF CLASSIC B-LYNCH SUTURE AND ROLE OF MODIFIED B-LYNCH SUTURE IN THE MANAGEMENT OF PPH

Obstetrics & Gynaecology

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ABSTRACT

Introduction: Postpartum hemorrhage is a life threatening obstetric complication and is the leading cause of maternal mortality in developing countries like India. Uterine compression sutures (classic B-Lynch and new modified uterine compression sutures) are simple, life saving and fertility preserving method for controlling PPH. Professor B-Lynch shocked the world of Obstetrics & Gynaecology in 1997 with his publication of the uterine compression suture for the control of massive PPH.

Aim And Objective-The objective of study is to analyze the efficacy and limitation of Classic B-Lynch suture and role of modified uterine compression suture in the management of PPH in those cases where conservative treatment fails. The ultimate aim is to decrease Maternal Mortality.

Material And Method-A prospective observational study was conducted in the department of Obstetrics and Gynaecology, PMCH, Patna regarding efficacy and limitation of Classic B-Lynch suture and role of various new modified uterine compression sutures in PPH during LSCS not responding to conservative treatment. Duration of study was from October 2017 to January 2019 (sixteen months).

Observation & Result- classic B-Lynch suture is very effective (95%) in atonic PPH but not so effective in cases of bleeding from lower Uterine segment (Placenta Praevia) for which different modified Cervico-isthmic compression sutures were needed to control PPH.

Conclusion- Classic B-Lynch suture and different modified Cervico-isthmic compression sutures are simple, less time consuming, fertility preserving and very effective in controlling PPH, thereby decreasing maternal mortality. Classic B-Lynch suture is very effective for atonic PPH but not so effective for bleeding from lower uterine segment for which modified cervico-isthmic compression suture is required.

KEYWORDS

Post Partum Haemorrhage(PPH), Lower segment caesarean section (LSCS).

INTRODUCTION-

- Postpartum hemorrhage is a life threatening obstetric complication and is the leading cause of maternal mortality in developing countries like India.
- Atonic Uterus accounts for more than 80% cases of postpartum hemorrhage. Postpartum haemorrhage is an obstetric emergency that can lead to emergency hysterectomy in patients with uncontrolled life threatening bleeding.
- The classic B-Lynch suturing technique involves a pair of vertical brace sutures around the uterus essentially to appose anterior and posterior uterine walls.
- The first description of uterine compression sutures was published in 1996 as a single case report from Zurich, that was followed by the famous report of five consecutive cases utilizing the B-Lynch suture in 1997. Various new modified uterine compression sutures have been devised during the last 15 years after B-Lynch suture.

AIM AND OBJECTIVE-

The objective of study is to analyze the efficacy and limitation of Classic B-Lynch suture and role of modified uterine compression suture in the management of PPH in those cases where conservative treatment fails. **The ultimate aim is to decrease maternal mortality due to PPH.**

- **Material And Method-** A prospective observational study was conducted in the department of obstetrics and Gynaecology, PMCH, Patna regarding efficacy and limitation of Classic B-Lynch suture and role of various new modified uterine compression sutures in PPH during LSCS not responding to conservative treatment like uterine massage & uterotonic drugs (oxytocin, methyl ergometrine, carboprost, misoprostol). Duration of study was from October 2017 to January 2019 (sixteen month).
- Total one hundred (100) patients with PPH were included in the study and were divided into two groups. –
 - 1.Group 1 - Atonic PPH (80 cases) &
 - 2.Group 2- PPH due to bleeding from lower uterine segment like Placenta Praevia.

B-Lynch suture was applied in these patients for management of PPH during lower segment caesarian section. Modified uterine compression sutures were applied in PPH cases, where Classic B-Lynch sutures failed, like cases of bleeding from lower uterine segment.

Compression Suture Used Were-

1. Classic B-Lynch suture-(Christopher B-Lynch)
2. New modified compression suture-
 - (a) Arulkumaran - Transverse full thickness cervico-isthmic compression suture
 - (b) Cho et al - Haemostatic multiple square suture over lower uterine segment
 - (c) Hwu et al- use of two parallel vertical compression sutures placed in the lower segment to control bleeding from placenta praevia

Steps of Classic B-Lynch suture-

B-Lynch suture is a form of compression suture used to mechanically compress an atonic uterus in massive PPH. chromic catgut No. 2 on round body needle was used.

- The patient is placed in Lloyd Davis position. Uterus is exteriorized and compressed antero - posteriorly to test whether compression is successful in controlling bleeding. When compression is successful then B-Lynch suture is taken.
- The uterus is punctured at about 3cm from the right lower edge of the uterine incision and 3cm from the right lateral border.
- The thread is passed through the uterine cavity to emerge at the upper incision margin 3 cm above and approximately 4 cm from the lateral border.
- The catgut is passed over the uterine fundus approximately 3 – 4 cm from the right cornual border. The catgut is passed posteriorly to puncture the **Posterior wall of uterus to enter the cavity and the needle was passed through the same surface marking as for the right side, the suture lying horizontally.**
- The catgut is passed vertically over the fundus compressing the fundus on the left side as occurred on the right. The needle is passed in the same fashion on the left side through the uterine cavity and out approximately 3 cm anteriorly and below the lower incision margin on the left side. **The two lengths of catgut are pulled taut assisted by bimanual compression to minimize trauma and aid compression.**

While the uterus is compressed by an assistant, the principal surgeon ties the two lengths of catgut to secure tension. The lower transverse uterine incision is now closed in the normal way.

Main outcome measures were- control of PPH, avoiding Caesarean hysterectomy and preventing maternal death.

After controlling PPH these patients were transferred to the ICU for

Postoperative follow up

When the clinical condition of the patients become stable for 48 hours. patients were shifted to ward.

DISCHARGE -

on day 10 to 15 depending on their condition & were called for follow up after one month, three month and six month.

OBSERVATION & RESULT-

Table-1. Showing Role Of Classic B-Lynch & Modified Uterine Compression Suture

Suture type	Group-1 No(%)	Group-2 No (%)
Classic B-Lynch suture alone	76(95%)	01(05%)
Classic B-Lynch suture+ Modified uterine compression suture	02(2.5%)	16(80%)

The above table shows that classic B-Lynch suture alone is effective in 95% cases of atonic PPH but only 05% cases of Placenta praevia. Classic suture along with different modified Cervico-isthmus compression sutures were effective in 80% cases of PPH due to Placenta Praevia

Table-2 Outcome Among Two Group

Item	Group-1	Group-2
Total number	80	20
Hysterectomy	02(2.5%)	02(10%)
Maternal death	00	01(DIC)
Successful outcome	78(97.5%)	17(85%)

The above table shows that there was no mortality in group-1 and one maternal death in group -2. Hysterectomy was required in two cases(2.5%) in group-1 and 10% cases in group -2. Successful outcome was 97.5% and 85% in group- 1 and group-2 respectively.

- Subtotal Hysterectomy was effective in atonic PPH and Total abdominal Hysterectomy was required in cases of PPH due to Placenta Praevia.
- There was no complication like uterine necrosis, Hematometra, pyometra, bowel loop obstruction, etc.
- Only 25 patients turned up for follow up within three months and 10 patients turned up for follow up between three to six months.
- Twenty six patients resumed normal menses in six months.

DISCUSSION -

- Postpartum haemorrhage is an obstetric emergency that can lead to emergency hysterectomy in patients with uncontrolled life threatening PPH.
- There are many treatment options developed to control PPH, where uterine massage and Oxytocics fail. These options are Balloon tamponade, uterine packing, uterine artery embolization, uterine and internal iliac ligation, uterine compression sutures and ultimately hysterectomy. The first description of uterine compression sutures was published in 1996 as a single case report from Zurich, that was followed by the famous report of five consecutive cases utilizing the B-Lynch suture in 1997. Various new modified uterine compression sutures have been devised during the last 15 years after B- Lynch suture.
- **In 2000, Cho et al** described a haemostatic multiple square suture to approximate the anterior and posterior uterine wall.
- **In 2002, Hayman et al** proposed a uterine compression suture that involved two vertical apposition sutures together with two transverse horizontal cervico- isthmus sutures.
- **In 2005, Hwu et al** described the use of two parallel vertical compression sutures placed in the lower segment to control bleeding from placenta praevia.
- **Hayman's suture-** Hayman stitch which is a simplified approach to uterine compression sutures was performed by tying two parallel vertical sutures from just above the bladder reflection to the fundus of the uterus.
- **Arulkumaran-** Transverse full thickness cervico-isthmus compression suture.
- Classic B-Lynch suture alone was not effective in controlling PPH in cases of PLACENTA PREVIA as bleeding occurs from placental bed over lower segment.

CONCLUSION-

- Classic B-Lynch suture and different modified Cervico-isthmus

compression sutures are simple, less time consuming, fertility preserving and very effective in controlling PPH thereby decreasing maternal death.

- Classic B-Lynch suture is not effective in controlling PPH from lower uterine segment as in Classic B – Lynch compression sutures are applied to compress upper uterine segment, it does not compress lower uterine segment.
- Various new modified uterine compression sutures like vertical and horizontal cervico –isthmus apposition suture over lower segment in addition to classic B-Lynch sutures has got higher success rate in comparison to classic B-Lynch suture alone in cases of bleeding from lower uterine segment as in Placenta Praevia.

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