



បន្ទីរមណ្ឌលជាតិគាំពារមាតា និងទារក
National Maternal and Child Health Center

ទិវាសល្យសាស្ត្រ សម្ព័ន្ធ និងរោគស្រ្តី លើកទី៣

ប្រធានបទ៖ «ពង្រឹង និងបង្កើនសេវាកម្មសេវាសាធារណៈ ថែទាំ សង្គ្រោះ ប្រកបដោយគុណភាព»

**B-Lynch compression suture technique in the
management of atonic Postpartum Hemorrhage
from January 1st to December 31st 2021 at
NMCHC**



Presented by Ass. Prof. Nou Sok Bona

ថ្ងៃទី៤-៥ ខែកញ្ញា ឆ្នាំ២០២៥
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Objective :

To show the effectiveness of B-lynch compression suture in the management of Atonic postpartum hemorrhage

Plan

I. Introduction

II. Materials and methods

III. Results

IV. Discussion

V. Conclusion

I. Introduction

- Postpartum hemorrhage (PPH) is a major factor in maternal morbidity and mortality in the world.
- 25-30% of maternal deaths in both the developing and developed countries.
- It is responsible for the deaths of 125,000 to 140,000 women each year or one maternal death every four minutes.
- It is defined as blood loss estimated in more than 500mL in the first 24 hours after vaginal delivery, and greater than 1000mL after a cesarean, or decrease in the hematocrit level of 10%; or the blood loss that causes hemodynamic involvement in the postpartum, making it necessary to transfuse blood products.
- Postpartum hemorrhage (PPH) occurs in 2 to 4% of deliveries and in 6 to 7% of cesarean sections.

- The causes of PPH have been simplified with the “4T” mnemonic, looking for an easy way to remember them

	features	%
Tone	Atony or uterine inertia	70
Trauma	Uterine trauma(rupture and uterine inversion), vagina and cervix tears	19
Tissue	Retention of placenta and clots and abnormal placenta	10
Thrombin	Congenital or acquired coagulopathies	1

- Multiple risk factors for PPH have been identified: chorioamnionitis, multiple pregnancies, fetal macrosomia, maternal obesity, preeclampsia, maternal anemia, primigravidae and extended labor
- The sign of PPH :
 - . Uncontrolled bleeding
 - . Decreased blood pressure (dizziness, blurred vision or feeling faint)
 - . Increased heart rate
 - . Decrease in the red blood cell count (hematocrit)

- The treatment of PPH involves finding and ceasing the cause as soon as possible.
- Management includes: medical (oxytocin, ergot alkaloids, prostaglandins, tranexamic acid, etc.) and non-medical (manual massage, selective arterial embolization, arterial ligation, uterine tamponade, uterine compression sutures and hysterectomy).
- B-lynch compression suture for the control of PPH, are useful in cases in which bleeding secondary to uterine atony cannot be controlled, and there is the desire to preserve the reproductive capacity.

- In 1997, Christopher B-Lynch reported a new approach for surgical management: a so-called B-Lynch uterine compression suture.
- This report described a technique, which used a continuous suture to apply vertical compression to an atonic uterus in an attempt to avoid hysterectomy.
- This suturing technique, when applied correctly, has been highly successful without any problems or apparent complications.
- Nowadays, the B-Lynch procedure is used worldwide to treat various causes of PPH, especially in developing countries as in Africa and Asia.
- Because the procedure is faster and simpler than hysterectomy and internal iliac artery ligation, and it produces excellent outcomes.

II. Material and Method

Retrospective study of consecutive patients diagnosed with intractable PPH who were subsequently treated with the B-Lynch compression suture, 57 cases from January 1st to December 31st 2021 at NMCHC

- Inclusion criteria: Patient undergoing caesarean sections landing up in atonic PPH with failure of medical line of management
- Exclusion criteria: Patients with traumatic post-partum hemorrhage, complete placenta previa/accreta, bleeding disorders, disseminated intravascular coagulation, and retained bits of placenta, PPH after vaginal delivery

III. Results

Table 1 :Distribution of age group patients with B-lynch suture

Age group (year)	N= 57	Percentage
< 20	7	12.28
21 - 25	17	29.82
26 - 30	29	50.87
31 - 35	4	7.03

Majority of the patients were in the age range of 26-30 years and then 21 - 25

Table 2: Distribution of gravidity

Gravida	N= 57	Percentage
G1	28	49.12
G2	22	38.59
G3	7	12.29

Primigravida constituted 49.12% of the studied patients, while three gravida represent 12.29%.

Table 3: Distribution of parity

Parity	N= 57	Percentage
P1	26	45.62
≥ P2	31	51.38

Out of 57 patients, 26 (45.62%) women were primipara while 31(51.38%) were multipara.

Table 4: Gestational age

Gestational age	N= 57	Percentage
29 - 36	15	26.31
37 - 40	33	61.40
41 - 42	7	12.29

In our study, 61.40% were term pregnancies whereas 26.31% were preterm pregnancies.

Table 5: Distribution of causative factor for PPH

Risk factor	N= 57	Percentage
Prolonged labor	21	36.84
Macrosomia	12	21.05
Pre-eclampsia/ eclampsia	10	17.54
Multiple pregnancy	7	12.28
Previous cesarean section	4	7.01
Polyhydramnios	3	5.28

Table 6: B-lynch suture application

B-lynch suture application	N= 57	Percentage
B-lynch suture uterine compression	55	96.49
Hysterectomy	2	3.51

About 96.49% of the cases were successful and 3.51% failed (hysterectomy) in our study.

IV. Discussion

1. Distribution of age group patients with B-lynch suture

Country	Author	21 - 25	26 - 30
Mumbai, India 2016	Nidhi Kalkal et al	20%	56.67%
Peshawar, Pakistan. [L] [SEP] 2019	Farnaz Zahoor et al	47.4%	31.6%
NMCHC, Cambodia	Our study	29.82%	50.87%

Our study, a total of 57 women who underwent B-lynch suturing for control of atonic PPH during cesarean section. The maternal age are most commence 21 to 25 were 29.82% which are higher to the study by Nidhi Kalkal et al (20%) but lower the study by Farnaz Zahoor et al (47.4%) whereas 26 to 30 years were 50.87% which are higher to the study by Farnaz Zahoor et al (31.6%) and lower to the study by Nidhi Kalkal et al (56.67%).

2. Distribution of gravidity

Country	Author	G1	G2
Aswan, Egypt 2021	Keriman Nabil Read Abdelhafeez et al	23.3%	20%
Maharashtra India 2019	Shrikant Warade et al	46%	54%
NMCHC,Cambodia	Our study	49.12%	38.59%

In our study of gravidity, we observe that primigravida were 49.12% which are superior to a study done by Shrikant Warade et al (46%) and by Keriman Nabil Read Abdelhafeez et al (23.3%) whereas second gravida were 38.59% which are superior to the study done by Keriman Nabil Read Abdelhafeez et al (20%) but inferior to Shrikant Warade et al (54%).

3. Distribution of parity

Country	Author	P1	≥ P2
Peshawar, Pakistan, 2019	Farnaz Zahoor et al	47.4%	52.6%
Nepal,2023	Poonam Koirala et al	57.89%	42.10%
NMCHC,Cambodia	Our study	45.62%	51.38%

Regarding our study, primiparous (45.62%) are superior to a study done by Farnaz Zahoor et al (47.4%) but inferior to a study done by Poonam Koirala et al (57.89%) whereas multiparous (51.38%) are almost same to a study Farnaz Zahoor et al (52.6%) but higher to a study Poonam Koirala et al (42.10%).

4. Gestational age

Country	Author	29 - 36	37 - 40
Maharashtra India, 2019	Shrikant Warade et al	30%	60%
Aswan, Egypt, 2021	Keriman Nabil Read Abdelhafeez et al	26.7%	73.3%
NMCHC, Cambodia	Our study	26.31%	61.40%

Regarding our study, 29 to 36 week (26.31%) are almost same the study by Keriman Nabil Read Abdelhafeez et al (26.7%) but lower a study by Shrikant Warade et al (30%) whereas 37 to 40 week (61.40%) are similar to a study by Shrikant Warade et al (60%) but lower a study by Keriman Nabil Read Abdelhafeez et al (73.3%).

5. Distribution of causative factor for PPH

Country	Author	Prolonged labor	Multiple pregnancy	Macrosomia	Pre-eclampsia/eclampsia
Mumbai, India, 2016	Nidhi Kalkal et al	33.33%	6.67%	6.67%	
Aswan, Egypt, 2021	Keriman Nabil Read Abdelhafeez et al	13.3%	6.67 %	3.3%	10%
Nepal, 2023	Poonam Koirala et al	5.26%	5.26%	5.26%	5.26%
NMCHC, Cambodia	Our study	36.84%	12.28%	21.05%	17.54%

The causative factors accounting for atonic PPH in our study, Prolonged labor(36.84%) are higher in a study by Nidhi Kalkal et al (33.33%), Keriman Nabil Read Abdelhafeez et al(13.3%) and Poonam Koirala et al (5.26%).

In our study, macrosomia (21.05%) are higher in a study by Nidhi Kalkal et al (6.67%), Poonam Koirala et al (5.26%) and Keriman Nabil Read Abdelhafeez et al (3.3%), whereas pre-eclampsia/ eclampsia (17.54%) are higher in a study by Keriman Nabil Read Abdelhafeez et al (10%) and Poonam Koirala et al (5.26%).

6. B-lynch suture application

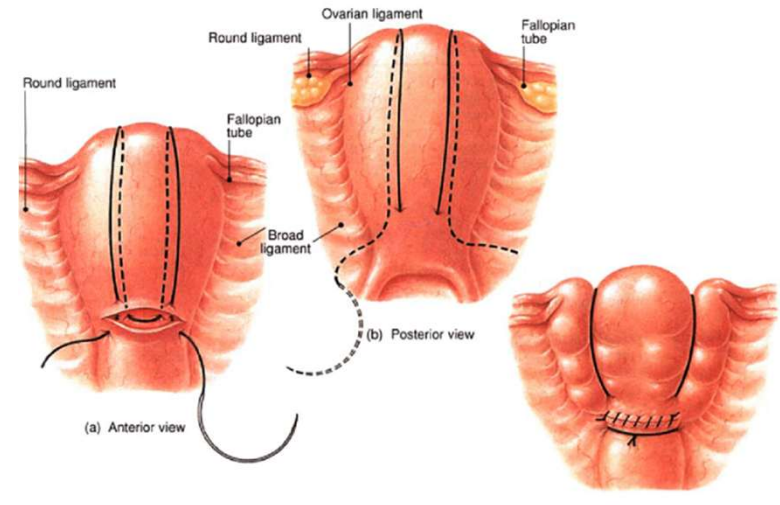
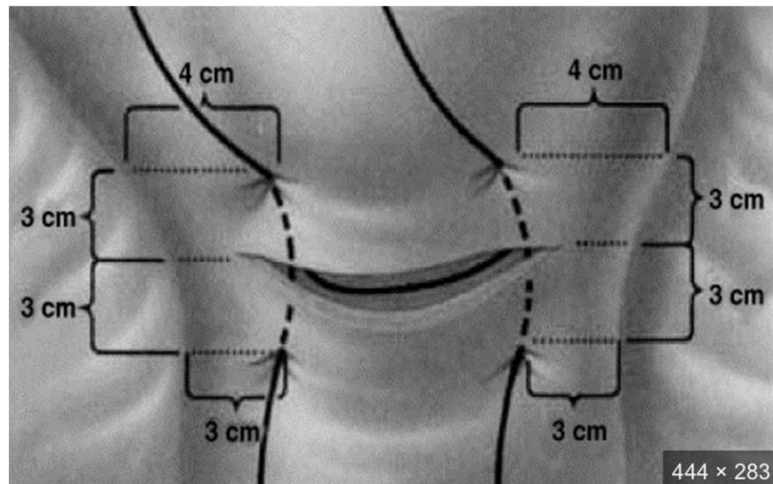
Country	Author	B-lynch suture	Hysterectomy
Mumbai, India, 2016	Nidhi Kalkal et al	100%	0
Aswan, Egypt, 2021	Keriman Nabil Read Abdelhafeez et al	86.7%	13.3%
Nepal, 2023	Poonam Koirala et al	94.74%	5.26%
NMCHC, Cambodia	Our study	96.49%	3.51%

The success rates of the procedure in our study was 96.49% which was higher when compared to a study by Poonam Koirala et al (94.74%) , Keriman Nabil Read Abdelhafeez et al (86.7%) and lower when compared to a study by Nidhi Kalkal et al(100%) whereas Hysterectomy (3.51%) which was lower when compared to a study by Keriman Nabil Read Abdelhafeez et al (13.3%) and Poonam Koirala et al (5.26%).

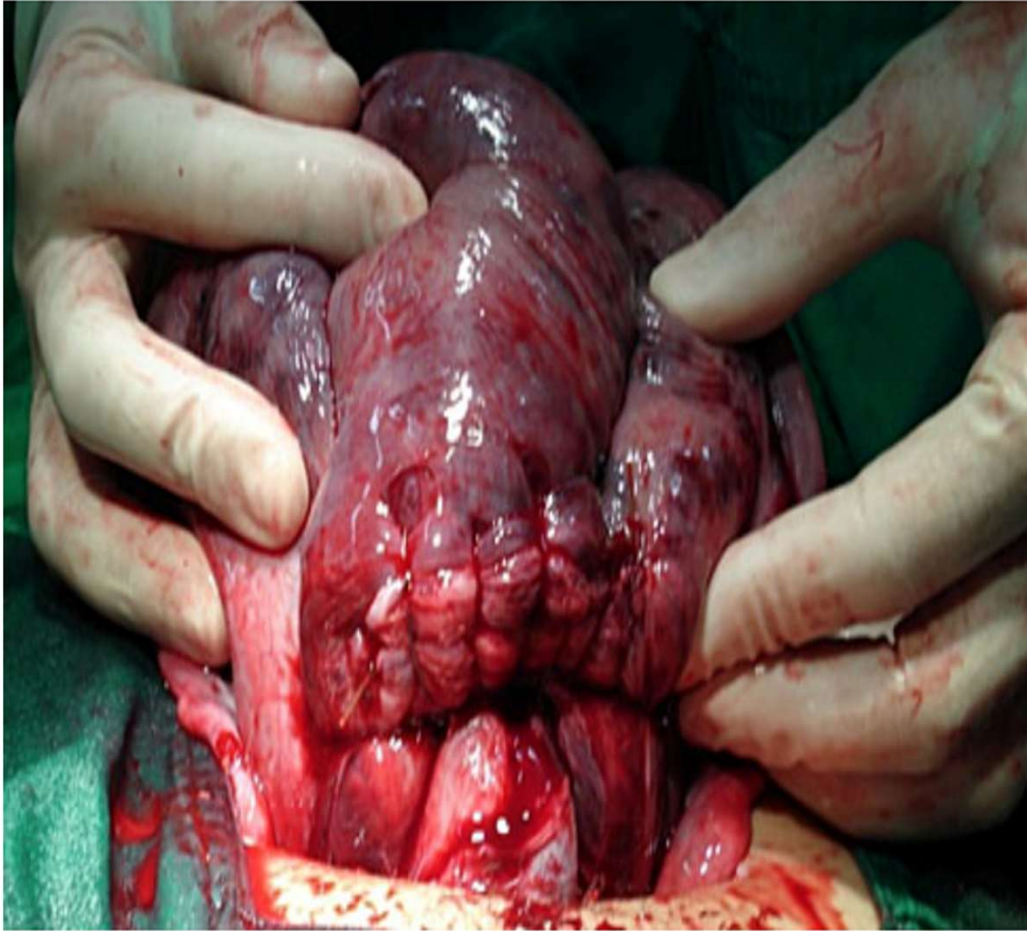
V. Conclusion

- Highly effective, simple, and fertility-preserving surgical technique for managing severe postpartum hemorrhage due to atony when medical therapy fails.
- Success rates of 96.49% , it significantly reduces the need for hysterectomy and preserves future reproductive potential.
- Lesser time of application, lesser blood loss, lesser blood transfusion, and lesser skill required.
- Prophylactic application considered in patients at high risk of atonic PPH.
- Rare complications such as uterine ischemia and intrauterine adhesion.
- Making the B-lynch suture a life-saving intervention in modern obstetric practice.

- Apply suture correctly with tension (no shouldering)



- Check bleeding control vaginally, using the instrument.



► Take home message

- perform for the uterine atony
- effective, simple, safe, quick and preserving fertility

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- B-LYNCH SUTURE IN THE MANAGEMENT OF POSTPARTUM HAEMORRHAGE;^[SEP]A CROSS-SECTIONAL STUDY^[SEP]Farnaz Zahoor¹, Muhammad Ilyas Siddiqui², Sarwat Masud³, Sadaqat Jabeen⁴ .Department of Obstet-^[SEP]rics and Gynaecology, Lady Reading Hospital, Peshawar - Pakistan.^[SEP]³Agha Khan University Hospi- tal, Karachi - Pakistan.

Thank You