

Original research article

A Prospective Study of Easy Gideon Suture in Management of Postpartum Hemorrhage During Cesarean Section due to Uterine Atony

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Abstract

Background: Postpartum hemorrhage is one of the major causes of maternal mortality and morbidity especially in the developing countries like India. It comprises of approximately 25% of maternal death worldwide. In EASY GIDEON suture, both uterine artery compressions with simultaneous anterior and posterior uterine wall compression is done to obliterate the uterine cavity hence controls the bleeding during cesarean section in lesser time.

Objective: To study the efficacy of EASY GIDEON suture in management of postpartum hemorrhage in cesarean section.

Methods: It was single-center hospital based prospective study conducted in the department of obstetrics and gynecology, PMCH. About 50 cases in which medical management failed to control PPH were selected (during Sept 2018 TO March 2020).

Result: The success rate of EASY GIDEON was seen in almost all cases in the present study. Most of them are regularly menstruating.

Keywords; Keywords: post partum hemorrhage, Easy Gideon suture.

Introduction

Postpartum hemorrhage is one of the major causes of maternal mortality and morbidity worldwide and comprises of approximately one-quarter of maternal deaths each year. It is classically/quantitatively defined as blood loss from genital tract exceeding 500 ml within 24 hours of vaginal delivery and 1000ml during cesarean section. It is clinically /qualitatively defined as any amount of bleeding from or into genital tract following birth of the baby up to the end of the puerperium, which adversely affect the general condition of the patient evidenced by the rise of the pulse and falling of the blood pressure[1]. The incidence of PPH is increasing due to increase in incidence of caesarean section. In India , where maternal mortality is high, a recent study shows almost 20% of it is due to postpartum hemorrhage . Its reported incidence in India is 2 to 4% after vaginal delivery and 6% after caesarean section with uterine atony being the most common cause (70%). Postpartum hemorrhage is usually unpredictable. Often a critical window of opportunity is available for taking prompt an effective action to make difference between life and death.

The EASY GIDEON suture is very simple variation of uterine compression suture techniques.[3] Bilateral uterine artery compression and simultaneously anterior and posterior uterine wall compression is done to obliterate uterine cavity there by controlling bleeding due to PPH in caesarean section. Gideon suture may be particularly useful because of its simplicity

of application in less time especially in low resource setting. It is as effective as original B lynch, Hayman and Pereira, Cho Suture and their modifications. [4]

Measures usually taken to arrest bleeding during cesarean section are successive use of oxytocics, direct pressure with warm packs, ligation of uterine arteries, ovarian arteries ligation, internal iliac artery ligation and ultimately hysterectomy when all measures fail. Control of hemorrhage is also possible with bilateral compression of uterine artery.

METHODS and METHODS

It was single-center hospital based prospective study conducted in department of obstetrics and gynecology, Patna Medical College & Hospital, Patna, Bihar.

Time Period: Sept 2018 to March 2020

Inclusion criteria:

1. In Atonic PPH with failed medical management.
2. Placenta Previa.
3. In Rupture of uterus.
4. After Suturing of lower uterine segment incision if incision line bleeds
5. When uterine incision extended laterally and bleeds.
6. Prophylactically - In prolonged labour, Non progress of Labor, Preeclampsia and Eclampsia, Over distended uterus (large baby), multiple pregnancies, multigravida and obstructed labour.

Exclusion criteria:

1. PPH followed after vaginal delivery.
2. Secondary PPH.
3. Bleeding diathesis
4. Uterine anomalies.
5. Uterine fibroid.
6. Genital track injury.

Suture Materials: Vicryl no. 1, Catgut No. 2 Steps Performed:

We use Pfannensteil incision for cesarean section. In those cases where bleeding persisted even after medical management. The uterus was taken out of the abdomen. The bladder was pushed down to prevent injury to it and to the ureters. After bimanual massage of the uterus for a few minutes, Bilateral uterine artery compression suture placed.

Using (vicryl no. 1) absorbable suture needle inserted first on left side at Lower uterine segment incision, anterior to posterior medial to round ligament and laterally to lateral border of uterus through transparent area (Avascular area of broad ligament).

Going posteriorly, encircling post wall of uterus taking care that omentum or loops of intestine not coming on the way or below suture. Then needle is inserted on right side from posterior to anterior side through avascular area, between round ligament and lateral wall of uterus and then a double knot tied in the centre below incision line as tightly as possible. Such one or two more sutures can be placed above incision if uterus is atonic. It can be placed upto the level of fallopian tube insertion (cornual end). The success of the procedure is immediately visible because blood flow through the uterus is restricted. Because both sided uterine arteries are compressed tightly as well as both anterior and posterior walls are brought together, obliterating uterine cavity. Hemorrhage is checked immediately. Uterus gives hard feeling.

In some cases there is bleeding or oozing through stitches on incision line, in such cases if Gideon Suture is placed as it traverse transversely just below or above incision line tightly, bleeding is checked immediately.

After completion of caesarean section P/S done - no bleeding found.

Result

Demographic Characteristics Subject of Study		
Demographics	Frequency (N=50)	Percentage
AGE		
<20	14	28
21 TO 25	21	42
26 TO 30	15	30
GRAVIDA		
PRIMI	19	38
MULTI	31	62
SOCIO ECONOMIC STATUS		
LOW	32	64
MIDDLE	10	20
HIGH	8	16
BOOKING STATUS		
BOOKED	10	20
UN BOOKED	40	80
GESTATIONAL AGE(wks)		
<28	0	4
29-32	2	16
33-36	8	14
37-40	7	48
>=41	24	18

COMPARISON - SOME COMPRESSION SUTURES

COMPARISON	B-LYNCH	HAYMAUN	EASY
NO. OF PT	25	25	50
TIME TAKEN	5 MIN	4 MIN	40 SEC
THREADS	1	2	< 1/3 rd
TRANSFIXATION OF UTERINE WALL	NO	YES	YES
HEMOSTATIS	100%	100%	100%
MENSTRUATION	YES	YES	YES
PREGNANCY	YES	YES	YES

DISTRIBUTION BASED ON OUTCOME

OUTCOME	FREQUENCY (N=50)	PERCENTAGE (%)
SUCCESSFUL	48	96
FAILURE	2	4

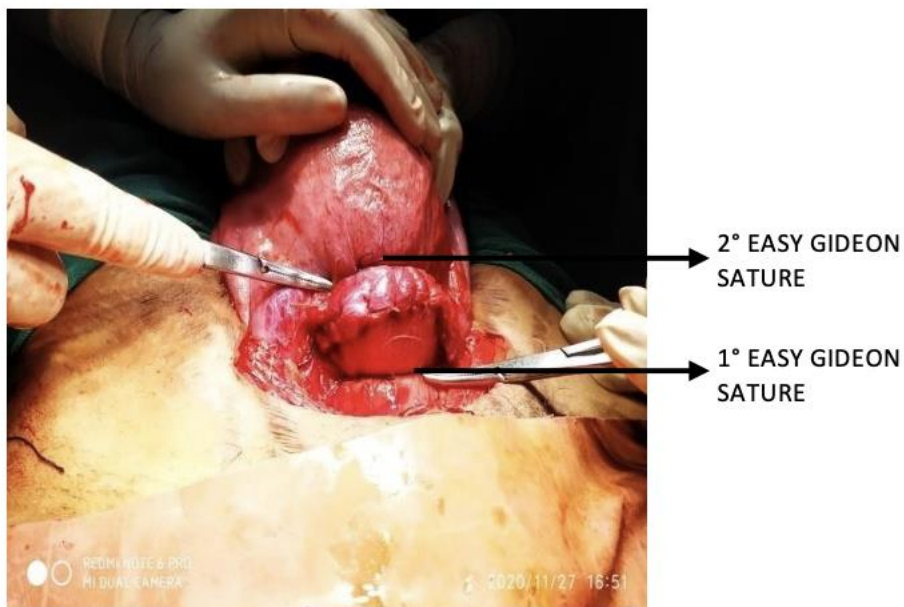
DISTRIBUTION BASED ON OUTCOME

IMMEDIATE COMPLICATIONS	FREQUENCY (N=50)	PERCENTAGE (%)
WOUND GAPING	0	0
FEVER	0	0
HOSPITAL STAY >8	3	6
WOUND INFECTION	2	4

S.NO.	OTHER SUTURE	EASY GIDEON
1.	First uterine artery ligation is done then B lynch or Hayman suture are applied[5]	Simultaneously compresses both uterine arteries and anterior and posterior walls of uterus thus obliterating uterine cavity.
2.	take time in finding uterine artery	takes 30 to 40 seconds in whole process.
3.	Need experience and training	Easy to learn Can be used even at CHC level with less facilities .
4.	Penetration of cavity so more chances of complications like <u>Haematometra</u> , <u>Pyometra</u> , <u>Asherman's Syndrome</u> . [6][7]	No penetration through cavity.
5.	Vertically placed compression suture using B lynch and Hayman technique may obstruct uterus, arcuate blood vessels which run transversely leading to uterine necrosis.[8]	NO

DISTRIBUTION BASED ON CASES AND THEIR SUCCESS OUTCOME

INDICATIONS OF C-S	NO. OF CASES WITH GIDEON SUTURE	SUCCESS	FAILURE
PREVIOUS 1	12	11	1 (PREVIOUS 1 + RUPTURE UTERUS + BROAD LIGAMENT HEMATOMA)
PREVIOUS 2	5	5	0
PLACENTA PRAVIA	7	6	1 (PLACENTA PERCRETA)
TWIN	4	4	0
OBSTRUCTED LABOUR	9	9	0
POLYHYDRAMNIOS	6	6	0
RUPTURE UTERUS	3	3	0



Discussion

Gideon Suture is new approach in the management of PPH. The rising caesarean section rate, adds to the rising incidence of PPH. The different uterine compression suture techniques have proved to be valuable and safe alternative to avoid hysterectomy; hence menstruation and fertility are conserved. Gideon Suture technical is very simple, effective, less time consuming, and if applied properly, has no side effect.

Conclusion

When postpartum haemorrhage is caused by uterine atony, different compression sutures effectively manage 90% of cases if suture is placed in expedient manner. The EASY Gideon Suture is very effective, simple to place, easy to learn for PPH management in caesarean section. As not going through uterine cavity no complications occur as seen in other compression sutures. Both uterine arteries as well as anterior and posterior walls are compressed simultaneously leading to quick check of hemorrhage. At CHC level where less staff and fewer facilities are there, if this suture is placed we can save the near miss cases due to PPH.

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