



Isthmic-cervical apposition suture – an effective method to control postpartum hemorrhage during cesarean section for placenta previa

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OBJECTIVE(S) : To study the control of postpartum hemorrhage in cases of placenta previa by isthmic-cervical apposition suture.

METHOD(S) : Isthmic-cervical apposition suture was applied in eight cases. A No.2. Chromic catgut on straight needle was passed through the uterus above the bladder reflection, 3 cm below the lower edge of uterine incision and 2 cm medial to the lateral edge of lower segment. The needle was passed from the anterior to the posterior aspect of the uterus and then brought back from the posterior through the anterior wall 1 cm medial to the entry point and tied anteriorly. The same procedure was repeated on the other side.

RESULTS : Isthmic-cervical apposition suture was effective in all cases.

CONCLUSION(S) : Isthmic-cervical apposition suture is a simple, effective, quick and safe method for controlling postpartum hemorrhage in placenta previa during cesarean section.

Key words : postpartum hemorrhage, placenta previa, isthmic-cervical apposition suture.

Introduction

Postpartum hemorrhage is one of the major causes of maternal mortality. In developing countries approximately 28% of maternal deaths each year are caused by postpartum hemorrhage and the risk is 1 in 1000 deliveries¹. In India where maternal mortality is high, a recent study shows that hemorrhage is responsible for one quarter of the maternal deaths and almost 50% of it is due to postpartum hemorrhage². Postpartum hemorrhage is usually unpredictable. However few conditions like antepartum hemorrhage (both placenta previa and abruption placenta), prolonged labor and multiple pregnancy increase the risk of postpartum hemorrhage¹. When the risk of hemorrhage is anticipated one should be prepared to manage the situation promptly and efficiently. Sometimes the bleeding may be

uncontrollable in placenta previa, as the lower segment has less musculature and is poorly retractile in nature. Often a short but critical window of opportunity is available for taking prompt and effective action to make the difference between life and death. Measures usually taken to arrest bleeding from placental sites in placenta previa during cesarean section are successive use of oxytocics, direct pressure with warm packs, undersewing bleeding points with figure of eight sutures, continuous locked sutures, ligation of uterine arteries and ultimately hysterectomy when all measures fail. Control of hemorrhage is also possible with circular interrupted chromic sutures around lower segment. Pelvic artery embolization is also gaining importance for arresting placental site bleeding. Bleeding from the lower segment can also be arrested by applying isthmic-cervical apposition sutures which occlude placental bed vessels by the apposition of the anterior and posterior walls³.

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Methods

This study was conducted from July 2001 to December 2002. We use Pfannenstiel incision for cesarean section unless the

incision for previous cesarean section is vertical. Placenta previa cases having persistent excessive bleeding from the placental bed following removal of placenta during cesarean section were problematic. In those cases where bleeding persisted even after oxytocics and direct pressure, isthmio-cervical apposition sutures were applied to arrest bleeding. The uterus was taken out of the abdomen. The bladder was pushed down to prevent injury to it and to the ureters. Number 2 chromic catgut suture on a straight needle was passed through the uterus above the reflection of the bladder, about 3 cm below the lower edge of uterine incision and 2

cm medial to the lateral edge of lower segment, from anterior wall through posterior wall and brought back from posterior wall through anterior wall about 1 cm medial to entry of the suture and tied anteriorly (Figures 1 and 2). A pair of closed artery forceps was introduced in the cervical canal through the uterine incision to prevent accidental closure of cervical canal. Similar suture was placed on the other side of midline³. In one case, a second set of similar sutures was needed below the first one for perfect hemostasis. In this series isthmio-cervical apposition sutures were applied in eight cases. The summary of the cases is given in Table 1.

Table 1. Details of the cases.

Age (years)	Parity	Gestational age (weeks)	Booked or unbooked	Grade of placenta previa	Past obstetric history	Type of CS
31	P 2+0	37	Booked	II Anterior	1 st Normal delivery 2 nd Cesarean section	Elective
22	P 1+0	35	Unbooked	III Posterior	1 st – Normal delivery	Emergency
27	P 0+0	37	Booked	II Posterior	— 1 st – Abortion 2 nd – Abortion	Elective
32	P 2+2	37	Unbooked	II Anterior	1 st cesarean sections	Elective
30	P 1+0	38	Unbooked	III Anterior	1 st normal delivery (Neonatal death)	Emergency
25	P 2+0	36	Booked	Central	1 st Normal delivery 2 nd Forceps delivery	Emergency
24	P 3+0	34	Unbooked	Central	Three normal deliveries	Emergency
30	P 0+0	37	Booked	I Anterior	—	Elective

ND- Normal Delivery

CS- Cesarean Section

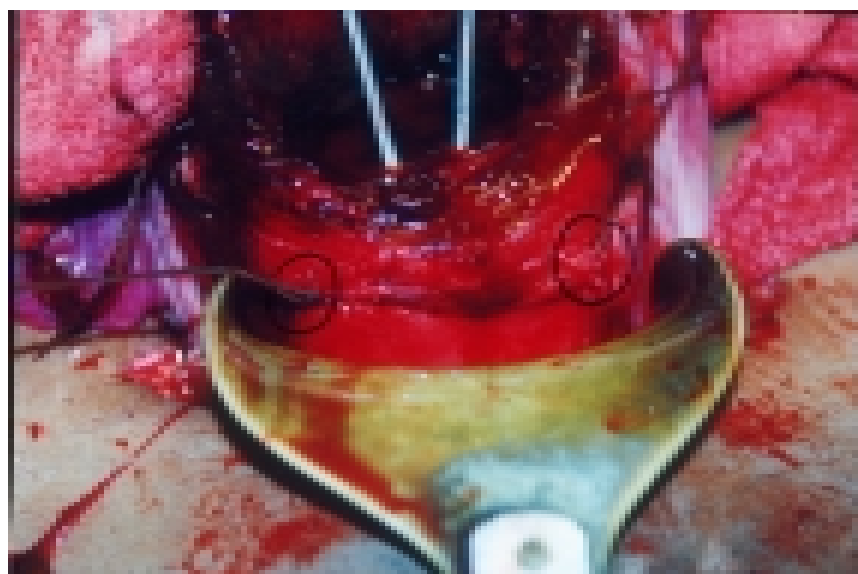


Figure 1. Isthmic - cervical apposition suture given on both sides keeping an artery forceps inside the cervical canal.

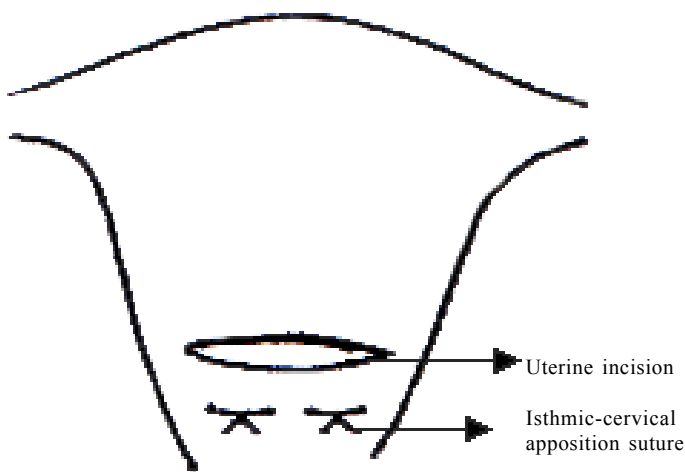


Figure 2. Diagrammatic representation of the isthmic-cervical apposition suture.

Results

Isthmic-cervical apposition suture was effective in all cases. Neither any major vessel surgery nor hysterectomy was needed in any of the cases. Post-operative period was uneventful. Lochial discharge was within normal limits. No abnormality was detected on routine check up after 6 weeks. None of the patient turned up with any complaint afterwards.

Discussion

B-Lynch et al⁴ reported a new approach in the management of postpartum hemorrhage by giving brace suture. This suture is effective if bimanual compression appears to control the bleeding. It requires the opening of the uterus through lower segment transverse incision and sequence of suturing is quite difficult to remember in an emergency situation. Mukhopadhyay and Arulkumaran³ modified B-Lynch suture technic to a simpler form. They also advocated isthmic-cervical apposition suture in case of persistent bleeding from

the lower segment during cesarean section due to placenta previa³. This method was also practiced subsequently by a few workers⁵. Kafali et al⁶ effectively employed hemostatic compression cervical sutures approximating anterior and posterior cervical lips in three cases of intractable postpartum hemorrhage originating from the cervical canal. A major advantage of this procedure is the ease of application besides the avoidance of hysterectomy, hence menstruation and fertility are conserved. Isthmico-cervical apposition suture technic is very simple, effective, less time consuming, and if applied properly, has no side effect. Obviously it is a better alternative to major vessel surgery and radical measures like hysterectomy. In our series it was effective in all cases. Hysterectomy was not necessary in any of the cases. On follow up, no complication like cervical stenosis leading to hematometra was seen in any of the cases. This suture technic is a new but effective method to arrest hemorrhage due to placenta previa. However, it needs a large trial for universal acceptance.

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