

Closure Versus Non Closure of the Visceral Peritoneum in Gynaec and Obstetric Major Operations

Saha S.K., De K.C., Bhattacharya P.K., Sanyal M.K., Pal D.

Dept. of Obs and Gynae., MCH, Calcutta

Summary:

Lower uterine segment caesarean section is the most common intraperitoneal surgical procedure in obstetrics. Similarly abdominal hysterectomy is one of the common operations performed by a gynaecologist.

Visceral peritonization after muscle closure in LSCS and after vaginal stump closure in abdominal hysterectomy has been a widely performed routine procedure.

The rationale behind the procedures that visceral peritonization prevents adhesion formation between the bowel and the wound wall. Our present study, encompasses the postoperative morbidity analysis of one hundred cases of non-closure of visceral peritoneum in LSCS and abdominal hysterectomy. LSCS group consists of 50 cases of closure of visceral peritoneum and 50 cases of non-closure of visceral peritoneum. Abdominal hysterectomy group bears the same numerical divisions as in LSCS group. The results of our study indicate that the postoperative morbidity and hospital stay are lower in non-closure group than closure group. Moreover the operating time and doses of anaesthetic drugs are reduced in non closure group. Also the hospital stay is shorter in nonclosure group.

Material and Methods

One hundred patients who underwent LSCS and 100 patients who underwent abdominal hysterectomy were included in our study.

All the patients who underwent LSCS were randomized to one of the two groups. In the first group of 50 cases closure of visceral peritoneum was done and in the 2nd group it was not done. Similarly abdominal hysterectomy patients were randomly divided into similar two groups as were done in LSCS patients.

In closure groups visceral peritoneum was closed by 1-0 atraumatic chromic catgut continuous suture. Closure of the perital peritoneum was performed by No. 1-0 atraumatic chromic catgut suture in a continuous manner.

The following patients were excluded from this study.

1. History of previous lower abdominal operations.
2. Presence of pelvic infection and adhesions.

The type of anaesthesia was chosen by the anaesthetist without reference to treatment group. All the patients were given same antibiotic (i.e. Inj. Ampicillin and Gentamycin) for 5 days. Patients who developed post-operative febrile morbidity required antibiotic for more days.

Analgesia was administered as follows:

Tramadol hydrochloride 100 mg IM for 2 days. All patients received a single dose of bowel stimulant on the 3rd postoperative day. During hospitalization the following parameters were carefully assessed:

1. Duration of general anaesthesia.
2. Total operation time (from the incision to skin closure)
3. No. of the patients requiring additional narcotic postoperatively.
4. a febrile morbidity (temperature 38°C for 2 days postoperatively). All patients received same antibiotic (Ampicillin and Gentamycin) but

dose and duration varied. Other clinical variables were chorioamnionitis featured by maternal fever 37.5°C, maternal tachycardia, fetal tachycardia, purulent vaginal discharge, urine tenderness, foul smelling amniotic fluid in the absence of other sources of infection, urinary tract infections and wound problems (serous and purulent discharge from the skin incision). Hospitalization was meant as the period from the day of the operation to the day of discharge from the hospital.

Results

Statistical data analysed the characteristics and variables of 100 patients in whom the visceral peritoneum was left open with those of 100 patients with classical suture peritonization.

Table II contains the indications of the operations. Time

of operation and anaesthesia, postoperative narcotics, post-operative febrile complications and hospital stay are presented in Table III.

Therapeutic antibiotic requirements were significantly higher in patients in the closure group. More general anaesthesia was used in the closed group. Postoperative average temperature during first 3 days was significantly higher with closure group. Endometritis and wound infection were more in closure group. Mean operation time in closed group was greater than that of non-closure group. Post operative hospitalization stay was shorter in the open group.

Discussion

The study examines the question of the closure and non-closure of the visceral peritoneum at caesarean delivery and abdominal hysterectomy from a critical

**Table : 1
Patient's Profile**

	Open Group		Closure Group	
	LUCS	Hysterectomy	LUCS	Hysterectomy
1. Maternal age (year) range	(18-37)	(34-52)	(18-36)	(33-54)
2. Parity range	(1-4)	(0.6)	(1-4)	(0.5)
3. Anaesthesia (G.A.)	45	18	44	47

**Table II
Indications of Operations**

LUCS	Open Group	Closed Group	Significance
A. Fetal Distress	12	10	NS
Malpresentation	9	12	NS
CPD	6	5	NS
Bad Obstetric history	17	16	NS
APH	6	7	NS
B. Abdominal hysterectomy			
Fibroids	30	28	NS
DUB	16	15	NS
Dysplasia	4	7	NS

Table III

	Open Group		Closed Group	
	LUCS	Hysterectomy	LUCS	Hysterectomy
1. Mean operation time	35 min	70min	38 min	85 min
2. Mean Anaesthesia time	40 min	75 min	43 min	90 min
3. Postoperative hospitalization	6	8 days	7	10 days
4. Additional narcotics used	4(8%)	6(12%)	12(24%)	16(32%)
5. Febrile morbidity	2(4%)	3(6%)	10(20%)	13(25%)
6. Antibiotic for 2 more days	3(6%)	2(4%)	9(18%)	11(22%)

clinical view point and compares the intraoperative and postoperative course in two treatment groups. The most important aspects considered were anaesthesia and operation times, antibiotics, analgesics used, febrile morbidity and postoperative complications.

In our study, the observations indicate that LSCS without suture closure of the visceral peritoneal cut edges offers a number of significant advances. First of them is lesser operation time associated with shorter exposure to anaesthesia.

Postoperative analgesic administration were lower in open group suggesting that non-closure is associated with less postoperative pain, possibly because of no tension placed on peritoneal edges. Antibiotic requirements were also lower in the non-closure group, which is most likely related to the lower febrile and infectious morbidity in this group.

One proposition against non-closure of the visceral peritoneum has been that it increases the adhesion formation. The most important factor in adhesion prevention is meticulous surgical technique including minimal tissue trauma and avoidance of infection by eliminating crushing forceps pressure, stitch tension and knot pressure (Luand et al, 1988). These criteria are best met by keeping the visceral peritoneum

open. Hubbard et al (1967) examined the process of autologous reperitonization in animal model. They observed that regeneration of peritoneal defects is completed in 5 to 6 days. Holtz (1982) and Elkins et al (1987) showed that adhesion formation after peritoneal closure is primarily the result of foreign body reactions to the suture material, interruption of vascular supply or ischaemia and inflammation. They found less tissue reactions in non-closed peritoneal cut edges than those where reactive suture material was used. On the basis of these we doubt that there is any connection between non-closure of the visceral peritoneum and postoperative adhesion formation. (Storet, 1993).

In conclusion we can inter that routine closure of the visceral peritoneum should be abandoned in gynaecological and obstetrical operations.

References

1. Elkins TE, Stovall IG, Warren J, Ling FW, Meyer NI: *Obstet Gynaecol*, 70:225-B, 1987.
2. Holtz G. *Int J. Fertil*, 1982, 27:134.
3. Hubbard BT, Khan MZ, Carag RN, Albites I-V, Hricke GM.: *Ann Surg*, 1967.
4. Lulandi I Hum HS, Gotfand MM: *Am J Obst and Gyn*, (1988) 158:536.
5. Stonek, *Obstet, Gynecol*, 5:322-1993.