A COMPARISON OF PERITONEAL CLOSURE WITH NON-CLOSURE FOR SHORT TERM MORBIDITY IN EMERGENCY LOWER SEGMENT CESAREAN SECTION

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ABSTRACT

Introduction: Cesarean section issurgical delivery of a baby and the placenta. Previously cesarean section had a high mortality and morbidity due to multiple reasons. Advances in surgical techniques has made cesarean section a safe procedure. In cesarean section, peritoneal non closure with peritoneal closure has proved to be associated with least morbidity and mortality.

Objective: For the better benefit of the patients and for time management such procedures should be encouraged

Material and methods: A cross sectional comparative study of 200 females undergoing cesarean section was done. The patients were subdivided into two groups of 100 each and named as group A randomized into closure and B non-closure group respectively. Perioperative,intraoperative and postoperative details were recorded. The data was entered into SPSS version 10.0. variables were compared between the two groups by using T-test and chi-square test. P value of <0.05 was taken as statistically significant.

Result: Short term morbidity like duration of operation, febrile morbidity, amount of analgesic doses, return of bowel activity,severity of pain and hospital stay wereanalyzed and the results were statistically significant ($p<0.05$) in peritoneal non closure group.

Conclusion: Routine closure of cesarean section can be avoided as non-closure of visceral and parietal peritoneum at cesarean section is associated with lesser operating time and improved short term morbidity.

Key Words: Cesarean Section, Peritoneal Closure, Short term Morbidity.

INTRODUCTION

Cesarean section can be defined as delivery of a fetus through a surgical incision in the abdominal and uterine wall[1]. Previously caesarean section had a very high mortality and morbidity due to lack of anesthesia, poor surgical technique and infection. Advances in surgical techniques has made cesarean section a safe procedeure.[2] Safe delivery is important for mother and infant. Any potential reduction of birth trauma to the infant has to be balanced against increased ill-health for the mother. Factors include not only the duration of the surgical procedure and maternal blood loss but also postoperative pain, continuing blood loss and development of anemia, fever and wound infection, problems with passing urine or breastfeeding and possible longer-term fertility problems, complications in future pregnancies (uterine rupture) or increased risks associated with future surgery[3]. There is wide variation in the surgical techniquesand the quality of evidence to support the techniques used[4]. Adherence to proper surgical technique which has proved to be associated with least complication will not only minimize the morbidity but possibly the death that can be associated with cesarean section. [5]

One of such technique involves either closure or non-closure of the visceral and parietal peritoneum.

Peritoneal non closure has more advantages as compared to closure. Peritoneum has the ability to heal itself when injured and reperitonization will appear within 48-72 hours and complete healing will occur within 5-6 days[1]. Non closure is associated with least intervention and save valuable time and cost[6]. In long term it is associated with less adhesion formation[4]

Royal College of obstetrician and gynecologist guidelines No 15 recommends that peritoneal closure is of no benefit and should be omitted.[7] The objective of the present research is to improve the management plan for cesarean section

MATERIAL AND METHOD

This cross sectional comparative study was done on 200 patientsin the department of Gynae A ward Khyber teaching hospital Peshawar from July 2007 to July 2008.The patients were subdivided into two groups of 100 each and named as group A randomized into

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closure and B non-closure group respectively. Patients were selected through emergency and outdoor patient department. In inclusion criteria all patients with their first cesarean section having no medical disorder of all parity with an age range of 20-40 year were selected. Confounding variables were controlled by excluding subjects with diabetes (by taking random blood sugar), bleeding disorder (BT/CT), PIH (History of hypertension, BP), anemia (Hb< 10gm/dl). Procedure was done by all 3rd and 4th year trainee medical officer under supervision.

Informed and written consent was taken and approval of ethical committee was obtained.

Every alternate patients undergoing emergency cesarean section was left with their visceral and parietal peritoneum un sutured(group B).In group A peritoneum closure was done (control group).

After surgery patients were exposed to the same post-operative environment day 0 was the day of surgery and on day 6 patients were discharged if they had no problem.

Duration of surgery and postoperative outcome like postoperative pain,febrile morbidity,,wound infection,return of bowl activity and hospital stay were recorded on a predesigned Performa upto 6th day.

RESULT

In our study there was no significant difference between the two groups with respect to age ,weight and indication for cesarean section. Operation time was significantly shorter in study group 40 mints as compared to control 60 mints (p value:<.001).Short term morbidity in terms of fever,pain,wound infection and return of bowl activity were all statistically significant in study group as compared to control group.(p<.005)

DISCUSSION

In cesarean section there are various controversieries regarding suturing the peritoneal layer . Surgical tradition advocate the operative technique of peritoneal closure at cesarean section ,presumably to restore anatomy and prevent post-operativeadhesions, reduce risk ofinfection,herniation,dehiscence,and hematoma formation[8].Randomized control trial have not proved the benefit of routine closure of peritoneum and in fact it has shown that spontaneous healing will appear within 48-72 hours and complete healing will occur within five

Table 1:Patient selection criteria

Parameters	Case (Mean+std)	Control (Mean+std)	t.test	p.value
Age	31.9+4.00	31.3+4.70	0.972	0.332
Duration of Operation	44.7+6.33	61.3+7.37	-17.086	0.000
Weight	82.7+7.02	81.8+9.08	0.784	0.433

Table 2: Patient short term morbidity variables

Parameters		Cases	Control	Chi.Sq	p.value
Wound Infection	Yes	5	23	20.43	0.000
	No	95	77		
Fever	Yes	32	76	37.22	0.000
	No	68	24		
Return of Bowel activity	1st Day	88	59	20.13	0.000
	2nd Day	12	41		

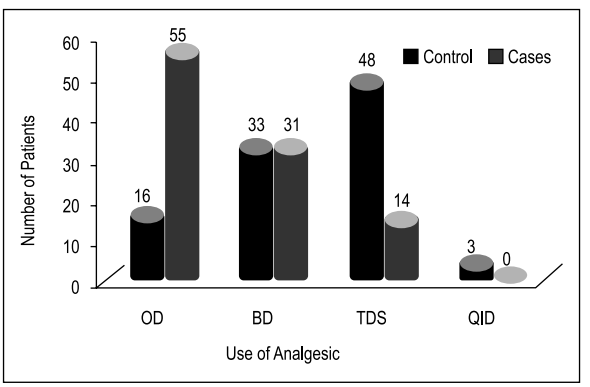

Fig 1: Use of Analgesic

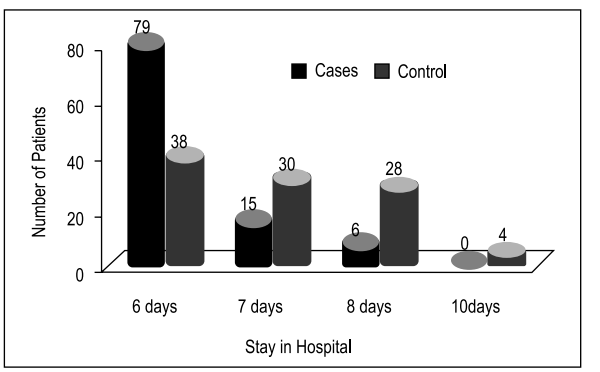

Fig 2: Stay in hospital

to six days if peritoneum is left as such[1]. Peritoneal closure leads to tissue ischemia,necrosis,inflammation,and foreign body reaction to suture material resulting in many problems[9].

In spite of the recommendation by royal college of obstetricians and gynaecologist many gynecologist still practice it .

Studies done so far show no difference in intraoperative and post-operative outcome between peritoneal closure and non-closuregroup, instead they have shown an improved outcome if peritoneum is left open[8,9,10]. Long term outcome in the form of adhesion formation was more common in peritoneal closure group[7,11].This study has shown an improved short term morbidity if both parietal and visceral peritoneum are left unsutured-which is similar to the studies done previously[12,13,14].

There is decrease in operating time of 20 mints according to our study,which is similar to the study done byK rafiq et al[15] where operating time was statistically significant(.<001)similar to my study.

Similar trend has been noticed by Archana rokade[8]. Decrease in operating time not only leads to decrease risk of anesthetic complication it also leads to decrease risk of wound infection, thromboembolic complication but also it leads to more efficient use of theater time thus reducing the total cost. The rate of febrile morbidity, wound infection were all higher in the peritoneal closure group and the result were statistically significant(.<001) this study was similar to the study done by Grunsell et al t[16] where they found a decrease in febrile morbidity and the result were statistically significant while study done by Nagele et al[17] noted an increase in peritoneum closure group however the result didn't reach statistical significance. Peritoneal closure leads to the formation of peritoneal pockets where blood collects and leads to increase chances of febrile morbidity. Pain was another outcome measure and my study has shown that in peritoneal closure group pain was more which was statistically significant (.<001) similar to the study done by Hojber et al[18] and Rafiqet al[19] where decrease analgesic doses were required in peritoneal non closure group. The increase pain in case of closure may be due to the fact that tension on peritoneal edges leads to pain in closure group. Inperitoneum closed group patients had delayed return of bowl activity as compared to non-closure group. Similar trend has been noticed by McNally et al in their study[20]. Stay in hospital was another variable studied and it was noticed that in peritoneal closure group patients stay was longer due to multiple reason such as fever and wound infection. In Cochrane analysis length of hospital stay was significantly reduced similar to my study. [8] Although long term outcome was not measured in this study because of time limitation studies done so far has shown that there is increased incidence of adhesion formation and upward displacement of bladder in subsequent surgery in peritoneal closure group. Thus these patients are more prone to the problem associated with adhesions such as chronic pelvic pain, infertility and bowel obstruction[9]. Keeping in mind the result of the above studies the benefits in terms of saving of suture material, saving of operation time and resources, decrease exposure to anesthesiaand saving of hospital expenses due to shorter hospital stay are very large to the health care system and to the patients as well in resource limited set up like ours. Any small improvement in postoperative morbidity will have important implication in clinical practice in terms of clinical satisfaction. At present no data support any hazard of non-closure of peritoneum so this step during cesarean section can be safely omitted.

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