Peritonization at Cesarean Section-is it necessary?

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The aim of this study was to determine whether non-closure of visceral peritoneum at low transverse cesarean section has advantages over suture peritonization with regard to postoperative morbidity. The study was done at Lady Willingdon Hospital, Lahore where 60 women were randomized into study, 30 group A had peritoneal closure and 30 group B had non-closure. Duration of operation, maternal morbidity, postoperative infection, maternal pain, length of hospital stay, wound dehiscence, usage of analgesic, urinary tract infection and time to opening of bowel were analyzed. The study showed that there are no advantages in suturing of peritoneum in terms of blood loss, postoperative pyrexia and wound infection. In fact non-closure of peritoneum was associated with short operation duration and reduced cost. Maternal pain was not increased in patients with non-closure of peritoneum.
Key words- cesarean section, peritoneal closure.

The peritoneum is conveniently divided into two parts, the visceral surrounding viscera and the parietal lining the rest of cavity. Conventionally parietal and visceral peritoneum is closed during cesarean section since long time. The reasons are to restore the anatomy, to approximate the tissue for smooth healing, to reduce the adhesions formation, to reduce the risk of herniation and to reduce the dehiscence of abdominal wall. Later on few studies have shown that non-closure of peritoneum is associated with more rapid healing. The absence of suture material and less tissue handling is associated with less adhesions formation. In non closure of peritoneum, the reason of less adhesion formation seem to be retaining the ability to lyse fibrinous adhesions before organization by the non traumatized tissue. Tight suture cause ischaemia of peritoneum and the ability to lyse fibrin is lost[1]. When peritoneal defects are created healing occur not from edges but by metamorphosis of mesenchymal cells. Large defects healed as rapidly as small defects. In non closure of peritoneum, mesothelial integrity is obtained within 48 hours[2].

Methods and techniques

The advantages of non closure of visceral peritoneum at cesarean section is evident from the reports published so far, it is obviously of value to reconfirm such important observation. Therefore, this study was done to compare the results of closure with non closure of peritoneum at cesarean section. This study was carried out at Lady Willingdon Hospital and 60-patients were recruited from labor room over a period of 6-months. They were randomized into two groups. 30 to group A, who had peritoneal closure and 30 to group B, who had non-closure of peritoneal. In group A, after closure of uterus in two layers, parietal and visceral peritoneum were closed with 2/0 vicryl suture[3]. Hemostasis was secured. Abdominal wall was closed in layers. In group B the procedure was same, except that both parietal and visceral peritoneum were left without closure. All the women in the study had primary cesarean section and no previous laparotomy was performed. All women had pre and postoperative haemoglobin specimens. General anesthesia was used in both groups. The pfanennsteil incision was made for all patients. The patients were assessed for operative time, blood loss during operation, hospital stay, wound infection, urinary tract infection, paralytic ileus, bowel opening and post operative pyrexia. Pain was evaluated twice a day from first to fourth postoperative day by visual analog scale.

Results

There were no significant differences in the two groups as far as parity, weight and gestational age. The mean age of patients in group A was 28-years and in group B was 30-years (Table 1).

Table 1. Clinical factors considered in women in the study

	Closure	Non-closure
Age	28	30
Parity	3	4
Weight in Kg	62	66
Gestation (weeks)	39	39

The duration of operation was much shorter in group B which was significant there was no difference in the length of hospital stay, postoperative infection rate, estimated blood loss and blood transfusion and postoperative morbidity. There was no overall difference in postoperative pain (Table 2).

Table 2 Parameters used in the study.

	Group A	Group B
Op. Time in min.	69	59
Blood Loss in ml	480+/-180	390+/-160
Blood transfusion.	3	2
Hospital stay	5	4
Post op. pyrexia	7	5
Prolonged ileus	0	1
Wound infection	4	3
Pain score	4	3
Wound dehiscence	2	1
Urinary tract infection	1	0

A tendency to less pain was found in the non-closure group from second postoperative day to fourth postoperative day. Regarding opiate analgesics, the non closure group had a significantly higher use in the second postoperative 24 hours period but in the remaining period it was lower. For oral analgesic no difference was found in the first 24 hours period but in the remaining period the non closure group had a significantly lower use. The incidence of febrile morbidity and cystitis and the need for antibiotics was all significantly greater when the peritoneal was closed. The incidence of wound dehiscence was also found higher in group A.

Discussion

The closure of peritoneal defects even with minimally reactive suture material results in increased tissue reaction and may result in adhesion formation. Non-closure appears to have few risks. This study has shown that there are no advantages in suturing of the peritoneum in terms of blood loss, blood transfusion, operation duration, postoperative pyrexia and wound infection.

Hojberg et al concluded in their study that there was no difference in postoperative pain comparing closure to non-closure of parietal peritoneum. However, the use of analgesic is lower in the non-closure group[3]. in our study it is was found that pain score is less in patients with non closure of peritoneum.

Nagele et al concluded that non closure of visceral peritoneum is associated with lower febrile and infectious morbidity. Routine closure of visceral peritoneum should be abandoned at caesarean delivery[4]. In our study it has been shown that non suturing of peritoneum is associated with shorter operation duration, reduced rate of postoperative pyrexia, urinary tract infection, wound infection and wound dehiscence.

Iron O et al showed in their study that short term postoperative morbidity and maternal pain are not increased by a shorter and more simple surgical procedure in which peritoneum is left unsutured[5]. But in our study in one patient postoperative ileus resolved later in non closure group. The mean operative time was shorter by 10 minutes in the non closure group. Less operative time reduced the exposure to anaesthesia and rate of thromboembolic complications. The suture material used for peritoneal closure was 2/0 vicryl and 2 vicryl were used in each operation, so in non closure three hundred rupees were saved in each operation.

Conclusion

This study showed that non-closure of peritoneum is not associated with increased morbidity, is more cost effective, simpler and reduced operation time in turn reduces the anesthetic exposure and complications.

References

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