

ORIGINAL RESEARCH

Comparative study between closure versus non-closure of peritoneum during cesarean section

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ABSTRACT

Background: The present study was conducted for comparing the efficacy of closure versus non-closure of peritoneum during cesarean section. **Materials & methods:** A total of 40 patients scheduled to undergo elective cesarean section were enrolled. Complete demographic and clinical details of all the patients was obtained. Randomization was done and all the patients were divided into two study groups as follows: Closure group and non-closure group in relation to peritoneum. Intraoperative findings were recorded separately. VAS scale was used for assessment of pain on a scale of 0 to 10 with 0 indicating no pain and 10 indicating maximum unbearable severe pain. All the results were recorded and analyzed using SPSS software. **Results:** Significant results were obtained while comparing the duration of procedure between closure group (39.69 minutes) and non-closure group (32.26 minutes). Mean VAS among the patients of the non-closure group was significantly lower at different postoperative time intervals in comparison to the closure group. Mean postoperative analgesic dose requirement was significantly higher among the patients of the closure group in comparison to the non-closure group. **Conclusion:** Among patients undergoing cesarean section, significantly better results are achieved during non-closure of peritoneum.

Key words: Closure, Peritoneum, Cesarean section

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INTRODUCTION

The caesarean section is an artificial delivery technique that allows fetal extraction after surgical opening of the uterus. Its purpose is to save the newborn and the mother in situations of fetal distress or dystocia. The frequency of the caesarean section has continued to increase in recent decades, but this increase differs enormously from one country to another and in the same environment, from one medical institution to another.¹⁻³ During training in cesarean section, surgeons must master the basic techniques in cases of term head presentation first. They must then master the techniques in cases involving complications such as malpresentation, preterm birth, placenta previa, abruptio placentae, uterine myomas, and other conditions. Cesarean section itself is a simple operation. However, there are many difficult cases, and many complications such as placenta accreta and defects of the incision scar may occur after cesarean section.⁴⁻⁶ Hence; the present study was conducted for comparing the efficacy of

closure versus non-closure of peritoneum during cesarean section.

MATERIALS & METHODS

The present study was conducted for comparing the efficacy of closure versus non-closure of peritoneum during cesarean section. A total of 40 patients scheduled to undergo elective cesarean section were enrolled. Complete demographic and clinical details of all the patients was obtained. Randomization was done and all the patients were divided into two study groups as follows: Closure group and non-closure group in relation to peritoneum. Intraoperative findings were recorded separately. VAS scale was used for assessment of pain on a scale of 0 to 10 with 0 indicating no pain and 10 indicating maximum unbearable severe pain. All the results were recorded and analyzed using SPSS software.

RESULTS

A total of 40 patients were analyzed. Mean age of the patients of closure group and non-closure group was 39.69 years and 32.26 years respectively. Significant results were obtained while comparing the duration of procedure between closure group (39.69 minutes) and non-closure group (32.26 minutes). Mean VAS among

the patients of the non-closure group was significantly lower at different postoperative time intervals in comparison to the closure group. Mean postoperative analgesic dose requirement was significantly higher among the patients of the closure group in comparison to the non-closure group.

Table 1: Comparison of mean duration of procedure

Duration of procedure (minutes)	Closure group	Non-Closure group	p- value
Mean	39.69	32.26	0.00 (Significant)
SD	4.27	3.37	

Table 2: Comparison of postoperative pain as assessed by VAS

Mean VAS	Closure group	Non-Closure group	p- value
Immediate postoperative period	4.80	4.51	0.79
Postoperative 6 hours	6.33	5.15	0.02 (Significant)
Postoperative 12 hours	4.61	3.18	0.00 (Significant)
Postoperative 24 hours	3.86	2.82	0.01 (Significant)

Table 3: Comparison of frequency of patients requiring postoperative analgesia dose

Patients requiring postoperative analgesia dose	Closure group	Non-Closure group	p- value
Number of patients	88	71	0.00 (Significant)
Percentage of patients	70.4	56.8	

DISCUSSION

Cesarean section is the most common surgical procedure performed in women worldwide. Notably, a high percentage of surgical deliveries did not translate into reduced maternal or neonatal mortality. According to the recommendations of the World Health Organization (WHO) the rates of cesarean sections should range between 10 and 15%. However, the fear of labor pains and simultaneous concern about the baby to be born, are more and more commonly leading to women choosing to deliver by cesarean section. The probability of complications secondary to the implemented procedure increases with the increasing percentage of cesarean sections. Globally, perinatal mortality rates reach 19 out of 1000 children.⁷⁻¹⁰ Hence: the present study was conducted for comparing the efficacy of closure versus non-closure of peritoneum during cesarean section.

A total of 40 patients were analyzed. Mean age of the patients of closure group and non-closure group was 39.69 years and 32.26 years respectively. Significant results were obtained while comparing the duration of procedure between closure group (39.69 minutes) and non-closure group (32.26 minutes). Bamigboye AA et al assessed the effects of non-closure as an alternative to closure of the peritoneum at caesarean section on intraoperative and immediate- and long-term postoperative outcomes. Randomized controlled trials comparing leaving the visceral or parietal peritoneum, or both, unsutured at caesarean section with a technique which involves suturing the peritoneum in women undergoing elective or emergency caesarean section. A total of 29 trials were included in this review and 21 trials (17,276 women) provided data

that could be included in an analysis. The quality of the trials was variable. Sixteen trials involving 15,480 women, were included and analysed, when both parietal peritoneum was left unclosed versus when both peritoneal surfaces were closed. Postoperative adhesion formation was assessed in only four trials with 282 women, and no difference was found between groups. There was significant reduction in the operative time. The duration of hospital stay in a total of 13 trials involving 14,906 women, was also reduced days. In a trial involving 112 women, reduced chronic pelvic pain was found in the peritoneal non-closure group.¹⁰ Tabasi Z et al assessed the short-term outcomes of two different cesarean delivery techniques. A total of 100 cases who underwent CS were randomly assigned equally to either closure of both the visceral and parietal peritoneum or no peritoneum closure. Duration of operation, pain scores, analgesic requirements, alterations in hemoglobin levels and febrile morbidity were assessed accordingly. Pain scores, analgesic requirements assessed at 24 hours and operation duration were significantly lower in the non-closure group as compared to the closure group. Febrile conditions and changes in hemoglobin levels were similar in both groups. Non-closure of both visceral and the parietal peritoneum when performing a CS produces a significant reduction in pain, fewer analgesic requirements and a shorter operation duration without increasing the febrile morbidity and changes in hemoglobin levels as compared to the standard methods.¹¹

In the present study, mean VAS among the patients of the non-closure group was significantly lower at different postoperative time intervals in comparison to

the closure group. Mean postoperative analgesic dose requirement was significantly higher among the patients of the closure group in comparison to the non-closure group. Takreem A et al, in another previous study compared peritoneal closure versus non-closure during caesarean section. Cases of caesarean sections were followed for adhesions and non-adhesions in peritoneal closure and non-closure cases from 1st January to December 2011 at DHQ Hospital Haripur. In non-peritoneal closure cases adhesions were marked, as compared to non-adhesions in peritoneal closure cases. Sixty-five cases of peritoneal closure and 30 cases of non-peritoneal closure were followed up. There were more cases of adhesions in non-closure group ($p < 0.05$). Peritoneal closure is beneficial in routine caesarean sections.¹² Huchon C et al evaluated postoperative morbidity with non-closure of the visceral and parietal peritoneum during caesarean section. A prospective randomized study of 170 patients. Operative time, postoperative pain, postoperative morbidity (febrile morbidity, wound haematoma, wound infection, postoperative ileus) and length of hospital stay were compared between the two groups. Duration of operation was significantly shorter without peritoneal closure (38.89 vs 42.00 minutes; $P < 0.05$). Wound haematoma were more frequent when peritoneum was closed ($P < 0.029$). There were no significant difference between the two groups for postoperative ileus, length of hospital stay, postoperative pain and other complications. Non-closure of both visceral and parietal peritoneum is associated with shorter operation duration and seems to reduce immediate complications.¹³

CONCLUSION

Among patients undergoing cesarean section, significantly better results are achieved during non-closure of peritoneum.

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