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Original Research Article

Evaluation of postoperative outcome of different techniques of lower segment caesarean section

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ABSTRACT

Background: Caesarean section is the most commonly performed obstetric surgery. A change in the operative technique affects the postoperative outcome. The study was undertaken to study the postoperative outcome of the patient who underwent caesarean section by Pfannensteil Kerr and Misgav Ladach method of lower segment caesarean section.

Methods: It was a hospital based interventional study done in a tertiary care hospital over one year. Postoperative condition of the women was assessed after caesarean section in women with Pfannensteil Kerr and Misgav Ladach method and compared.

Results: Most cases in the Misgav Ladach method had breast fed early, had quicker return of bowel activity and earlier ambulation in comparison to the Pfannensteil Kerr method. This difference was statistically significant. Women with the Pfannensteil Kerr method had more postoperative pain, nausea and vomiting. The duration of hospital stay was less in Misgav technique.

Conclusions: Since Misgav Ladach method was a better technique than Pfannensteil Kerr, adopting it routinely would result in considerable reduction in maternal morbidity, decreased hospital stay, better patient satisfaction level and more cost effective.

Keywords: Caesarean, Misgav Ladach, Pfannensteil Kerr

INTRODUCTION

The most commonly performed surgery is caesarean section. In general, rates around the world are from about 5% to over 20% of all deliveries.¹ There has been a steady increase in the caesarean section rate globally. The increase in the caesarean section rate is due to the maternal high-risk factors like severe pregnancy induced hypertension, diabetes and HIV infections. Increase detection of foetal distress and intrauterine growth restriction have also led to increased caesarean section rate.² Caesarean section is performed when it offers a clear benefit either to the mother or the neonate since

women who undergo this procedure face increased risks of maternal morbidity compared with vaginal delivery. Caesarean section carries risk of short-term complications such as pain, haemorrhage, need of blood transfusion, injury to the intra-abdominal organs (bowel, bladder or ureters), infection and thromboembolic disease.³ Efforts of researchers are directed towards finding a safe, quick technique with good postoperative outcome, short hospital stay. The simplest and most appropriate surgical method, causing the least possible damage to the tissues, should be sought. In traditional Pfannensteil method, the dissection is done with scissors, uterus is closed in two layers and both peritoneum are sutured, with the belief

that there is better restoration of anatomy, establishment of barrier, reduction in wound dehiscence and reducing haemorrhage.⁴

In the newer Misgav Ladach technique, manual separation of tissues, closure of uterus in one layer and non-suturing of the peritoneum is done. This reduces the number of stitches thereby reducing the foreign body reaction also decreasing the time of surgery and the suture material used.⁵ With an improved outcome, it would be easier for her to breastfeed the baby and be involved in the care of the new-born. The objective of the study was to evaluate the differences in postoperative outcomes of caesarean section by Pfannensteil Kerr and Misgav Ladach method.

METHODS

This interventional study was conducted in a tertiary care hospital. Primigravidae with live singleton term pregnancy, undergoing caesarean section and willing to be included in the study were chosen. Woman with severe anaemia, any sign of sepsis, polyhydramnios, or any medical disease were excluded. Forty women each were operated using Pfannensteil Kerr (PK) and Misgav Ladach (ML) method. In PK technique a curved transverse supra-pubic incision in the abdominal skin, abdomen is opened by sharp dissection⁶ Transverse lower uterine segment incision was given, uterus repaired in double layer and peritoneum was closed.⁷ In ML method, abdominal wall was opened by method described

by Joel-Cohen et al⁸ by transverse skin incision 5 cm above the symphysis pubis and blunt dissection of all abdominal walls. Suturing of the uterus was done in one layer and peritoneum was left open.⁹

Presence of nausea, vomiting, timing of ambulation and breast feeding, return of bowel sounds and fever if any in the postoperative period was noted. Duration of hospital stay was also compared in the two groups. Data collected was statistically analyzed. P value <0.05 was taken as significant.

RESULTS

There were 40 women each in both groups. Women in the ML method group had lesser postoperative pain. The mean time of return of bowel sound in the ML group was significantly quicker than the PK group. The women could take oral intake early. Also, the mean time of ambulation in the ML group was earlier and was significantly less than PK group Table 1. In present study, the mean time of first breast feeding in the ML group was significantly earlier than the PK group. This improved the satisfaction level of the women and also increased mother infant bonding. In present study, the mean duration of hospital stay in the ML group was significantly lesser than the group with PK, since the women were comfortable and ambulatory (Table 1). There was significant difference in the ML and P K group in terms of postoperative nausea, vomiting and fever, it was less in ML group (Table 2).

Table 1: Comparison of postoperative outcome in the two groups.

Postoperative patient outcome		Group A Mean±SD	Group B Mean±SD	Statistical significance
VAS score	at 2 hours	3.7±1.3	6.8±1.6	<0.001 (S)
	at 8 hours	2.3±1	4.9±1.6	<0.001 (S)
Time of first breast feeding(hours)		2.83± 0.87	3.5±0.85	P=0.005 significant
Time of return of bowel sound (hours)		7.4±3.3	12.3±3	P < 0.0001 significant
Time of ambulation (hours)		18.95±8.41	20.45±9.03	P < 0.0001 significant
Duration of hospital stay(days)		5.25±0.59	5.38±0.67	P < 0.001 significant

Table 2: Comparison of postoperative morbidity in the two groups.

Condition	Group A (N=40)	Group B (N=40)	P value
Nausea / vomiting	3 (7.5%)	11 (27.5%)	0.039 (S)
Fever	1 (2.5%)	8 (20%)	0.034 (S)

DISCUSSION

Women in the ML method group had lesser postoperative pain. In ML method, the abdomen is opened by blunt dissection, uterus is sutured in single layer and

peritoneum is left unsutured thus, less damage is inflicted on the tissues which results in less trauma and therefore, less post-operative pain.¹⁰ NICE and WHO guidelines recommend initiating breastfeeding within one hour of birth.⁷

In present study, the mean time of first breast feeding in the ML group was significantly earlier than the PK group. Sharma A et al also found that non-closure of peritoneum, as in ML method was associated with early time of first breast feeding. Postoperative pain can lead to unpleasant physiologic responses ultimately resulting in delayed breast feeding.^{11,12} This may cause breast engorgement and may also prolong the hospital stay.

Decrease in post-operative pain improves mother's comfort and also the outcome of the new born infant.¹³

Authors observed that the mean time of return of bowel sound in the ML group was significantly quicker than the PK group. Also, the mean time of ambulation in the ML group was earlier and was significantly less than PK group. Similar to our observation, Agarwal N et al, Vitale et al also noted that time of oral intake after caesarean section were significantly earlier when peritoneum was left open though some found no significant statistical differences between the groups in regard to bowel transit time.^{6,13-15}

Lesser duration of peritoneal cavity exposure intraoperatively in ML method and less bowel handling could be the reasons for earlier return of bowel sounds. Postoperative pain can lead to unpleasant physiologic responses including retention of secretions in respiratory system, paralytic ileus increased usage of analgesics.¹³ Few authors also found that ambulation was earlier after the ML operation. It has been suggested that lesser bowel handling and lesser operating time result in earlier appearance of bowel sounds, allowing early oral intake. This results in earlier ambulation.^{14,16,17} Authors observed postoperative nausea, vomiting and fever was significantly less in ML group. Nankali A et al and Adama O et al also observed that use of antibiotics was significantly lower in ML group.^{18,19}

Since blunt opening of abdomen and uterus, single layer uterine closure and non-closure of the peritoneum during caesarean section reduces the duration of the procedure, this might benefit in terms of reduced risk of infections, fever and postoperative complications.¹³ Less operative time reduced the duration of exposure to anaesthesia, and hence may reduce the incidence of nausea and vomiting. Exposure of wound to external environmental contaminants also decreases that may reflect as a decrease in the incidence of febrile episodes. Also, peritoneal closure leads to the formation of peritoneal pockets where blood collects and leads to increase chances of febrile morbidity.^{20,21} Similar to present study, various authors also had shorter stay of women in the ML group.^{16,22}

CONCLUSION

To conclude, less pain, earlier ambulation, breast feeding, early oral intake due to earlier return of bowel sounds made the women in the ML group more comfortable. There was lesser use of antibiotics and analgesics due to lower incidence of nausea and fever. Hence, it resulted in earlier discharge from the hospital of women in the ML group.

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