

## ORIGINAL ARTICLE

# A COMPARATIVE STUDY BETWEEN MODIFIED MISGAV LADACH TECHNIQUE AND PFANNENSTEIL METHOD OF LOWER SEGMENT CAESAREAN SECTION

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## ABSTRACT

**Objective:** To compare modified Misgav ladach technique of LSCS with conventional method.

**Method:** This was a prospective study conducted over 200 patients undergoing primary LSCS for various reasons. Patients were randomly allocated into two groups of 100 each; group A underwent LSCS by the Misgav ladach method and group B by the conventional method. The peri operative and short term postoperative outcomes of both groups were compared. T test and Mann whitney test were used to analyze outcomes.

**Result:** The operating time, incision delivery interval and febrile morbidity was significantly reduced in group underwent LSCS by modified Misgav ladach technique compare to comparison group who underwent LSCS by conventional technique..

**Conclusion:** Misgav ladach technique is a fast and advantageous method of LSCS and is cost effective as well.

**Key words:** Caesarean Section, Misgav ladach, delivery

## INTRODUCTION

Caesarean section is the most commonly performed operation in obstetrics with substantial rising rate over the past decade <sup>1, 2</sup>. There have been varieties of revolutions in gynecological surgeries like shifting of abdominal hysterectomy towards vaginal hysterectomy. The emergence of endoscopic surgery further added to these advancements. However, no novel method had yet been able to replace the lower segment caesarean section as a means of abdominal delivery of the fetus. There have been advancements in the approach to the lower segment caesarean section. Misgav ladach technique is one such technique which has shown promising results so far as operating time, blood loss and postoperative complications are concerned. Since it's early reportings by Stark and colleagues <sup>3, 4, 5</sup> there have been multiple modifications to this technique as well. In this technique after incising the skin the abdominal wall layers are separated manually. The uterus is also stretched manually. Uterus is closed in single layer and abdomen closed in two layers.

The aim of present study is to compare the intraoperative and post operative outcome between the conventional lower segment caesarean section as described by Pfannenstiel, and modified Misgav ladach technique. The

modified Misgav ladach technique of our study differed from the original in nonexteriorization of uterus during uterine closure. This technique is most welcome in sub-himalayan zone of Uttarakhand where due to geographical constrains most of the patients reach late to the hospital and need urgent LSCS for indications like fetal distress, malpresentation.

## MATERIAL AND METHODS

This was a prospective study conducted in the department of obstetrics and gynecology in a tertiary care centre of Uttarakhand. About 200 patients were enrolled in the study. All were undergoing emergency or elective primary LSCS for various reasons. After taking a thorough history and completing general and abdominal examinations, written and informed consent was taken and patients were randomly allocated into two groups of 100 patients each. Group A underwent LSCS by modified Misgav ladach technique and group B by conventional method. Both types of surgeries were performed by obstetricians well versed in these techniques.

Women with previous cesarean section, obstructed labor, previous abdominal surgery and rupture uterus were not included in the study.

### Steps of Misgav ladach (Group A)

1. A straight incision 3cm below the line joining the anterior superior iliac spines.
2. A 2cm nick over the rectus sheath in midline is given .The fascia is stretched cranially and caudally to expose the rectus muscle.
3. The parietal peritoneum is opened digitally and enough room is created by manual stretching.
4. After incising the uterine musculature for 2cm with a scalpel it is further extended laterally by manual exploration.
5. Uterus is repaired in single layer without exteriorization.
6. Visceral and parietal peritoneum is left to heal on itself.
7. After closing the rectus sheath with no. 1 vicryl, skin is repaired with 3 or 4 interrupted mattress sutures.

### Steps of Pfannensteil method of LSCS (Group B)

- 1 Pfannensteil incision to open the abdomen.
- 2 Use of sharp dissection to open the rectus sheath and peritoneum.
- 3 Uterine incision is extended laterally with the help of scissors.
- 4 Uterus is repaired in double layer.
- 5 Visceral and parietal peritoneum is repaired.
- 6 Skin is closed with 5 to 6 interrupted mattress sutures.

The choice of anesthesia was governed by the anesthetist on floor. The operating time was noted by anesthetist and was measured from the time of skin incision to skin closure. The pre and post operative care was similar in both groups. Early ambulation was encouraged in all patients. Broad spectrum antibiotic coverage was given to both groups. Patient was allowed liquid diet after 8 hours and shifted to semisolid diet after 12 hours depending on resumption of bowel sound. On third day wound inspection was done. Skin suture were removed on the 7<sup>th</sup> post operative day.

## RESULTS

Table 1 demonstrates the indications for which LSCS was performed. Fetal distress was the most common cause of LSCS followed by non progress of labor on account of failed induction. The peri and post operative results have been compiled into table 2. Both groups were comparable so far as demographic variables are concerned.

**Table 1- Indications of LSCS in study subjects**

	Group A (n=100)	Group B (n=100)
Non progress of labor (NPOL)	15	17
Fetal distress	44	38
Cephalo pelvic disproportion(CPD)	9	11
Breech presentation	13	12
Transverse lie	6	7
Face presentation	1	2
Ante partum hemorrhage (APH)	4	4
Pregnancy induced hypertension	3	3
Deep transverse arrest	3	3
Cord presentation	2	3

## DISCUSSION

Since there are very few modifications possible in the technique of lower segment caesarean section, any mod-

ification which causes even slightest benefits in terms of operating time, blood loss, febrile morbidity and duration of anesthesia is going to be very welcome.

**Table 2 – Peri operative and short term post operative outcomes**

	Group A (n=100)	Group B (n=100)
Mean operating time [Min]	23 ± 4.3	35 ± 0.6#
Mean incision to delivery time [Min]	1.8 ± 0.5	4 ± 2.3#
Passage of flatus (days)	1.1±0.5	2±0.4*
Bowel clearance (days)	2.8±0.4	2.9±0.8*
No of sutures required [mean]	2.2±0.3	3.4±0.4#
No of skin stitches [mean]	3.8 ± 0.2	5.4±0.5#
Wound dehiscence [no of cases]	None	None
Febrile morbidity (%)	9	9.8*
Wound infection (%)	6	5*

\*Statistically Significant; #Not significant

Fetal distress stands out to be the most common indications [44 %] for LSCS in primiparae followed by non progress of labor [15%]. Previous studies of Laddad MM et al<sup>6</sup> and Nahar et al<sup>7</sup> are in support of this observation. The mean operating time in the Misgav ladach group was found to be 23 ± 4.3 min, as compared to 35 ± 3.6 in the conventional group. Decrease in operating time is associated with decrease in duration of anesthesia<sup>8-10</sup>. Since the incision to delivery interval is reduced, this technique is most acceptable in cases of cord prolapse and fetal distress when every minute is accountable for fetal wellbeing.

Misgav ladach section has been previously reported to be associated with reduced blood loss<sup>5, 10, and 11</sup>. Non employment of manual method of removal of placenta routinely in the study further reduces the blood loss and risk of post partum endometritis<sup>12</sup>.

Reductions in blood loss are also attributed to the blunt technique of opening the abdominal layer with minimal use of scalpel and scissors. Our technique differs from

the Misgav ladach method in non exteriorization of uterus while repairing the uterus. Routine exteriorization may increase the duration of hospital stay<sup>13</sup>. It also increases risk of infection<sup>14, 15</sup> and air embolism<sup>15</sup>. One layer suturing of uterus reduces operating time and infectious morbidity than 2 layer closure<sup>16</sup>. The impact of single layer closure of the uterus on future pregnancy is in controversy as some authors reported similar rate of dehiscence<sup>17, 18, 19</sup> while others like Bujold et al<sup>20</sup> showed increased rate.

Non closure of visceral and parietal peritoneum has been reported to have no effect in fertility abdominal pain, urinary symptoms or adhesions at subsequent surgery.<sup>21, 4, 22</sup> Rather it is associated with reduction in operating time<sup>23</sup> and is more cost effective<sup>8, 3</sup>. Reduction in febrile morbidity<sup>3</sup> and hospital stay further adds to the well being of the patients.

Single layer closure of the uterus with non closure of peritoneum, with use of only 3 stitches on skin markedly reduces the requirement of sutures. This also reduces the amount of post operative pain experienced by patients in Misgav ladach group.

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