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A clinical study to observe the complication and duration of operative time in MisgavLadach technique of caesarean section done in Department of Obstetrics and Gynaecology, Sekh Bhikhari Medical College Hospital, Hazaribag, Jharkhand, India

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Abstract- In the last decades caesarean section rates increased in many countries becoming the most performed intraperitoneal surgical procedure. The operative technique performed is made chiefly on the basis of the individual experience and preference of operators, the characteristics of patients, timing and urgency of intervention. Present study was done to analyse the benefits of the MisgavLadach caesarean section technique in the SBMCH Hazaribag to evaluate the operative parameters like efficacy, safety, duration of surgery, blood loss during surgery need for suture material, intra op and post-operative morbidity. Prospective surgical study done in department of obstetrics and gynecology in SBMCH, Hazaribag, Jharkhand, India. Duration of surgery, blood loss and post-operative complications were significantly less in the MisgavLadach technique of LSCS. Study results demonstrated that the modified MisgavLadach method of caesarean section is associated with faster postoperative recovery, lower morbidity and blood loss, shorter length of operative procedure, lower incidence of operative complications, lesser postoperative use of antibiotics and analgesics/antipyretics, and lower utilization of surgical material. The modified MisgavLadach method of caesarean section is suitable for emergency and elective procedures, justifying its use in daily routine.

Key words: Caesarean section, MisgavLadach technique, Intra op and Post-operative morbidity

INTRODUCTION

Caesarean section is the commonest major surgical procedure in modern days and situations often demand its performance in the quickest possible operative time for fetal or maternal emergencies without compromising the surgical excellence. In today's world there is a continuous search for better and more satisfactory techniques for caesarean section.

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Michel Stark from department of obstetrics and gynaecology in MisgavLadach hospital in Jerusalem rationalized all new strategies and proposed the technique named the MisgavLadach techniquein1984.[1] This method is concise very simple to perform operation for abdominal delivery of foetus with reduced morbidity and very short operative time. The main features of MisgavLadach technique of caesarean section are transverse Joen Cohen incision for opening the abdomen, suturing uterine incision in one layer and non-closure of visceral and parietal peritoneum.[1]

The choice of the Caesarean section technique is strictly depend to the individual experience and confidence of the surgical team. MisgavLadach technique proved to be associated with less complications, moreover, because of its shorter operating time; it is to prefer in all that cases where operation is required.

This is one of the changing trend in caesarean section, thus an attempt was made to evaluate this technique of LSCS in detail regards to technique and patient's benefit.

METHODS

It was prospective surgical interventional study carried out on 400 patients who underwent caesarean section at Shiekh Bhikhari Medical College Hazaribag after taking permission from institutional ethical committee. 400 cases were randomly selected whose complete blood count, blood grouping was known preoperatively. After taking a through history and complete general and abdominal examination was done, written informed consent was taken. Bladder was routinely catheterised before surgery. Prophylactic single dose of antibiotics injection Ceftriaxone 1gm intravenously was given half an hour prior to surgery. The choice of anaesthesia was governed by anaesthetist. On 4th post-operative day repeat haemoglobin levels were done.

Inclusion criteria

Indications of caesarean section by MisgavLadach method of LSCS

- Fetal distress
- Cephalo-pelvic disproportion
- Previous LSCS with scar tenderness
- Deep transverse arrest
- Face presentation Breech presentation
- Brow presentation
- Compound presentation
- Cord presentation/prolapsed
- Transverse lie

Exclusion criteria

- Patient with known medical/ surgical illness (Hypertensive disorders of pregnancy, DIC, Liver disease etc.)
- Previous LSCS with vertical scar
- Previous two or more LSCS
- Placenta previa

Salient features of method

In this technique of caesarean section the incision is a straight transverse incision in the skin about 2-3 cm below the line between the anterior superior iliac spine; deepening the cut in the midline with scalpel to expose the fascia; dissecting fascia laterally by about 2 cm, below the fat tissue with a slightly opened tip of the scissors. At this point, using index fingers the fascia is stretched caudally and cranially to make room for the next step and to find the midline separation of the rectus muscles. Both the surgeon and the assistant insert their index and third fingers under the muscles and stretch the muscles, fascia and subcutaneous fat tissue bilaterally, at the same time, until the required opening is achieved.

The peritoneum is opened by stretching with index fingers. The uterus is opened with an index finger and the hole enlarged between the index finger of one hand and the thumb on the other. The uterus is closed with a one- layer continuous locking stitch. The visceral and parietal peritoneal layers are left open. The rectus muscle is not stitched. The rectus sheath is stitched with a continuous non-locking stitch. The skin is closed with two or three mattress sutures.

RESULTS

The study was carried out in department of obstetrics and gynaecology SBMCH, Hazaribag for a period of one year from 2020 February to 2021 January. The baseline characteristics of patients who were included are shown below.

Table 1: The distribution of patients based on age index

Age in years	Number of patients (n=400)	%
<20	56	14
21-25	272	68
26-30	52	13
>30	20	5
Total	400	100

In present study majority (68%) of the cases who underwent, caesarean sections were in the age group of 21-25 years (Table 1). In the present series the maximum number of patients who underwent caesarean sections was primigravidae (49%) followed by second gravid (35%). Among these 108 patients were previous LSCS.

Table 2: Patient distribution on the basis of indication for LSCS.

Indication for LSCS	Number of patient	%
Foetal distress	184	46
Cpd	40	10
Breech	20	5
Previous LSCS with scar tenderness	90	22.5
Failure to progress	21	5.2
Contracted pelvis	19	4.7
Brow presentation	04	1
Face presentation	02	0.5
Oblique lie	10	2.5
Compound presentation	04	1
Deep transverse arrest	02	0.5
Cord presentation	02	0.5
Transverse lie	02	0.5
Total	**400**	**100**

As shown in Table 2 the main indication for caesarean section was foetal distress 46% followed by previous LSCS with scar tenderness in 22.5% cases. Among 400 cases 380 (95%) cases were emergency LSCS. In all of the cases spinal anaesthesia was used (100%).

As shown in Table 3 in majority of cases skin incision to baby delivery time is 1-2 min. The mean duration of surgery was 21 minute 13seconds.

The duration of surgery differed from surgeon to surgeon and it depends on operative skill of surgeon. In our study 82.5% LSCS were performed in 20-22min and 17.5% required 21-23 min.

Table 3: Skin incision to baby delivery time.

Time in minutes	Number of patient (n=400)	Percentage
1-2	330	82.5
2.1-3	62	15.5
3.1-4	4	1
>4.1	4	1
Total	400	100

Uterine closure was done in single layer. In 92% cases there was no requirement of additional haemostatic sutures in addition to single layer closure of the uterine incision. In 4% cases only one suture, 2% required 2 sutures and only 8 patient (2%) required double layer closure of uterus.

Table 4: Post operative haemoglobin deficit.

Haemoglobin deficit in gm %	Number of patient (400)	Percentage
<1	330	82.5
1-2	42	10.5
>2	28	07
Total	400	100

Haemoglobin deficit is indicator of intra operative blood loss. It is obtained by subtracting post operative haemoglobin level from preoperative haemoglobin. As shown in table 4, 82.5% patients had hb deficit <1gm% and 7 % had hb deficit >2gm%. Only 5 % patients required blood transfusion, 4 % due to pre-existing severe anaemia and 1% had postpartum haemorrhage.

Post operative morbidity: post operatively 11 patients were suffered from fever and 4 patient from urinary tract infection. In this method febrile morbidity is very low. In 4 patient fever is due to wound infection and in 3 patient cause of fever is unknown but fever subsided on its own on fifth postoperative day.

Table 3: Skin incision to baby delivery time.

Condition of wound	Number of patient (n=400)	Percentage
Clean, healed, linear incision	368	92
Serous discharge	16	4
Purulent discharge	8	2
Wound hematoma	6	1.5
Superficial skin dehiscence	2	0.5
Total	400	100

As shown in Table 5 only 16 % patients had some wound complication out of which only 6 patient required secondary suturing. In present study 184LSCS were done for the foetal distress out of which 80 babies had Apgar score <5 at 1 min and 4 babies remain depressed even after 10 min, two babies died within 24 hours. There was no maternal mortality. All patients came for follow up 15 days and after one month. No complication was noted during follow up visit.

DISCUSSION

Many gynaecological operations are being replaced today by alternative medical and surgical development like progesterone and minimal access surgeries. Caesarean

section however, has no alternative. Caesarean section also accounts for one of the commonest operation done in obstetrics. MisgavLadach method of LSCS, devised by Dr. M. Stark is a modification of the traditional method of caesarean section. In present study, attempt was made to assess this method in detail.

In present study majority (68%) of the cases who underwent, caesarean sections were in the age group of 21-25 years (Table 1). In the present series the maximum number of patients who underwent caesarean sections was primigravidae (49%) followed by second gravid (35%), similar results were obtained by Dilip *et al.* (1985)[2] and Kshirsagar *et al.* (2016)[1], but in study of M Stark *et al.* (1985)[3] the mean age was 28.9 years in Joel Cohen's group and 29.4 years in pfannensteil's group.1-3 this difference can be explained by the early age of marriage, low education level leads to early conception.

Most common indication for LSCS in our study was foetal distress in 46% cases, Kshirsagar *et al.* (2016)[1] found that Foetal distress accounts for 29% in Misgav Ladach method and 31% in traditional method of LSCS.1

In present study as shown in Table 3 in majority of cases (82.5) skin incision to baby delivery time is 1-2 min and >4.1 minute in only 1% cases. In a comparative study done by Kshirsagar *et al.* (2016)[1], time taken from skin incision to baby delivery was 1.4 minutes average in MisgavLadach method and 2.4 min average in traditional method. Corosu *et al.* (1998)[4] in their study used pfannensteil's incision instead of Joel Cohen's incision and average time from skin incision to baby delivery was 4.8 minute.

In present study the mean duration of surgery was 21 minute 13 seconds, in study done by Kshirsagar *et al.* (2016)[1], in majority of the cases in MisgavLadach group the time taken for surgery was 31-35 minand in traditional method it was 36-40 min. Hudic *et al.* (2012)[5] observed Joel Cohen's incision pfannensteil's incision ($p<0.05$).5 In study done by Sharma & Singh (2013)[6] showed that total time for surgery in MisgavLadach group was 23 min and in traditional method it was 35 min.

In current study 82.5% patients had haemoglobin deficit <1gm% and only 7% had haemoglobin deficit >2gm%. Darj & Nordstorm (1999)[7], compared the blood loss in MisgavLadach technique to that in traditional method in 50 cases. The amount of blood loss differed significantly with 550ml and 650ml in the two groups' respectively. Hauth *et al.* (1992)[8], in their comparative study of one verses two layer closure of uterine incision reported >6% haemoglobin deficit in 18% cases done by double layer closure vs. 13% cases done by single layer closure of uterus.

In this study post operatively 11 patients were suffered from fever and 4 patient from urinary tract infection. In this method febrile morbidity is very low. In 4 patient fever is due to wound infection and in 3 patient causes of fever is unknown but fever subsided on its own on fifth postoperative day. Kshirsagar *et al.* (2016)[1], found no statistically significant differences in the post operative morbidity between the two groups in their study.1 In a study by Hudic *et al.* (2012)[5] show that the febrile morbidity is less in MisgavLadach group than compared to traditional method. Nagele *et al.* (1996)[9] studied the post operative morbidity in two groups with closure and no closure of peritoneum and found that post operative morbidity was more with patients in whom peritoneum was closed.

In current study only 16% patients had some wound complication out of which only 6 patient required secondary suturing which was comparable to Fatusic *et al.*[10] found in their study that is local infection of the wound in the Misgav-Ladach group was 4.54% and in the pfannensteil's groups in 9% ($p<0.05$).

In present study it was observed that 2 neonatal deaths in cases where LSCS was done for foetal distress. Kshirsagar *et al.* (2016)[1], found no significant difference in the two groups in in the terms of perinatal morbidity and mortality. According to Cochrane review there was no difference in neonatal NICU admission.

CONCLUSION

MisgavLadach technique of LSCS is developed and critically evaluated by Dr. M Stark at the MisgavLadach hospital, Jerusalem. Joel - Cohen's incision, suturing the uterus in single layer and non closure of peritoneum forms the major modification of technique. The operating time and blood loss were noted in the study was considerably less as compared to traditional method, which may benefit the women in reducing the exposure time to anaesthesia and infective morbidity. Suturing the uterus in single layer and non closure of peritoneum results in minimal use of suture material, this decreases the post operative tissue reaction to the suture material which in turn decreases

the resultant fibrosis. Our studies prove the efficacy and safety of single layer uterine closure, especially in relation to long term outcomes,we recommend single layer uterine closure.

Study results demonstrated that the modified MisgavLadach method of cesarean section is associated with faster postoperative recovery, lower morbidity and blood loss, shorter length of operative procedure, lower incidence of operative complications, lesser postoperative use of antibiotics and analgesics/antipyretics, and lower utilization of surgical material. The modified Misgav Ladach method of cesarean section is suitable for emergency and elective procedures, justifying its use in daily routine.

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CONFLICT OF INTEREST

None declared

ETHICAL APPROVAL

The study was approved by the Institutional Ethics Committee.

REFERENCES

1. **Kshirsagar N, Sajjan KR, Patil S, Nagur B. 2016.** A study of morbidity pattern in MisgavLadach technique of caesarean section. *Int J Reprod Contracept Obstet Gynecol.* **5:**1925-8.
2. **Dilip KC, Dawn CS.1985.** Morbidity following caesarean section. *J Obstet Gynecol India*. **35:**1037.
3. **Stark M, Chavkin Y, Kupfersztain C, Guedj P, Finkel AR. 1995.** Evaluation of combination of procedures in caesarean section. *Int J Gynecol Obstet.* **48:**273.
4. **Corosu R, Roma B, Marziali M, Di Roberto R. 1998.** Modifications to the technic of cesarean section after Stark. *Minerva Ginecologica*. **50(9):**391-5.
5. **Hudic I, Bujold E, Fatusic Z, Skofic F, Latifacic A, Kapidzic M, Fatusic J. 2012.** The Misgav-Ladach method of caesarean section: a step forward in operative technique in obstetrics. *Arch Gynecol Obstet.* **286(5):**1141-6.
6. **Sharma A, Singh M. 2013.** Comparative between modified MisgavLadach technique and pfannenstiel method of lower segment caesarean section. *Natl J Med Res.* **3(3):**286-8.
7. **Darj E, Nordstorm ML. 1999.** The MisgavLadach method for caesarean section compared to the Pfannenstiel method. *Acta ObstetGynecol Scand*. **78(1):**37.
8. **Hauth JC, Owen J, Davis RO. 1992.** Transverse uterine incision closure - one versus two layers. *Am J Obstet Gynecol.* **167(4):**1108-12.
9. **Nagele F, Karas H, Spitzer D, Staudach A, Karasegh S, Beck A. 1996.** Closure or nonclosure of visceral peritoneum at caesarean delivery. *Am J Obstet Gynecol.* **174(4):**1366-70.
10. **Fatusic Z, Kurjak A, Jasarevic E, Hafner T.** The MisgavLadach method—a step forward in operative technique in obstetrics. *J Perinat Med.*

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