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Misgav Ladach Caesarean Section Experience in Three Different Libyan Clinics

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Abstract:
In the last few years, the rate of Caesarian Section is increased due to the use of new investigation and Fetal monitoring methods in addition to the request of the patients. Many Gynecological operations are replaced today with alternative medical or surgical methods (e.g. GnRH analogs and Laparoscopy). Caesarean Section have no alternative , but we try to improve it, make it safer, easier, faster, simpler and more efficient by using a method that cause less damage to the tissues. Many studies on new operative technique were tried; Misgav Ladach Caesarean Section is one of these methods, since more than 7 years is widely used in USA and Europe. Our three clinics were the first clinics in libya using this method.
KEYWORDS: Caeserian Section (CS), Misgav Ladach Caeserian Section (MLCS), General Anesthesia (GA), Peridural Anesthesia (PDA), Spinal Anesthesia (SA), Amniotic

INTRODUCTION:

Not as many Doctors thinks, Misgav Ladach Caesarian Section dose not mean only leaving of Visceral and Parietal Peritoneum without closure, it is a combination of more than 7 steps – which all known to every Obstetrician - including Joel-Cohen incision, avoidance of abdominal towel, opening of the Uterus with Scissor rather than Scalpel, exteriorization of the Uterus after delivery of the baby, closure of uterus in one continues layer and of abdominal wall only in two layers. *Table 1*
Using of Joel-Cohen incision have more advantages over Pfannenstiel incision [1,2], this carry (i) less injury & tears to the tissues and Blood vessels, (ii) less blood loss, (iii) and thus less risk of infection, (iv) less Homeostasis required and (v) shorter the operation time. Placing of the towels in abdomen with the ordinary CS carry risk of abrasion to the tissues, more risk of adhesion, decrease the beneficial effects of the anti-bacterial properties of Amniotic fluid and it may forgotten [3,4]. Opening of the Uterus with the Scissor instead of Scalpel make less injury to the uterus and its blood vessels, thus less bleeding and less risk of infection.
Exteriorization and wipe of the Uterus with towel – after delivery of the baby – is to see the adenexal regions, compressing of uterine fundus to decrease the bleeding and avoidance of the damage to the abdominal organs, thus this minimize not increase the bleeding as many think. Uterus is closed in one continues locked layer using Catgut or Vicryl No. 1 , round needle No. 8, this leads to less fibrosis and sacculation and thus making the Scar more stronger [5]. Parietal and visceral peritoneums are approximated together without stitches and Omentum is drawn down over the uterus. Closure of the peritoneum with the ordinary CS give chance to the blood to be collected between the urinary bladder and peritoneum increasing the risk of infection and may also infiltrate the urinary bladder wall leading to retention of urine and difficulty with the micturation. In addition, it consume more time and dose not effect the healing of the peritoneum [6, 7]. Abdominal wall closed then in 2 layers, Rectus sheath with continues locked layer where as the skin with continues or interrupted stitches. Fewer the skin stitches, better the drainage and healing, smaller the risk of Seroma, haematoma and infection. In addition, it reduces the operation time.

Table 1, difference between Misgav Ladach CS and ordinary CS

No.	Character	Ordinary CS	MLCS	Advantages of MLCS
1.	Incision	Pfannenstiel Incision	Joel-Cohen Incision	. less injury . less bleeding . less infection . less Homeostasis . less op time.
2.	Abdominal Towel.	yes	No	Abdominal towel cause: . abrasion . ↑risk of adhesion . ↓antimicrobial benefit of AF . may forgotten
3.	Opening of Uterus	With Scalpel	With Scissor	. less injury to BV . less bleeding . thus less infection
4.	Uterus after delivery	Remain inside	Exteriorization Of Uterus	. inspection of Ovaries . avoidance of Abdominal organs injury . compression of fundus
5.	Closure of Uterus	2 layers	1 layer	. less fibrosis . less sacculation . stronger Scar
6.	Closure of peritoneum	yes	No	Closure of peritoneum Cause: . Haematoma . ↑risk of infection . tissue ischemia . ↑OP time . no effect on peritoneal healing.
7.	Closure of abdominal wall	4 layers	2 layers	. less infection . less time . better healing

Methods and material

120 patients were operated with Misgav Ladach CS technique over a period of around 2 1/2 years from July 2023 to December 2024 in Obstetrics and Gynecological departments of three different Libyan Hospital and Clinics, Sabratha teaching Hospital (60 patients), Surman Alkobra clinic (34 patients), Orchid clinic (26 patients). 37.5% of the patients (45 patients) operated as primary elective MLCS where as the rest 62.5% (75 patients) as secondary emergency MLCS. *Figure 1*. 7.5% (9 patients) with history of previous 1 CS, 6 of them operated before with MLCS technique and now as elective CS where as the other 3 patients with emergency CS.

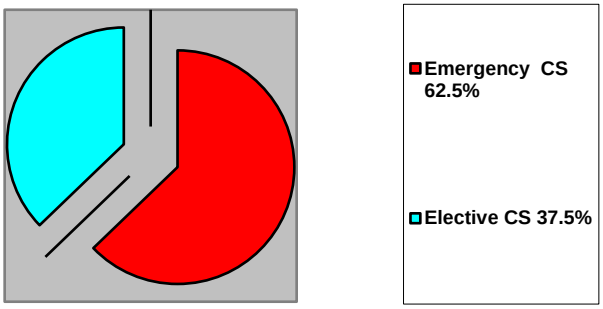

Figure 1: type of Caesarean section

Indications of elective CS includes 12 patients (22.6%) due to Pre-eclampsia, 11 patients (24.4%) with Diabetes Mellitus, 9 patients primigravida breech (20%), 4 patients with IVF (8.8%), 6 patients with previous CS (13.3%) and 3 patients (6.6%) on request. *Figure 2*

Reasons for the emergency CS includes fetal distress & pathological cardiotocography 33 patients, no progress of Labor 21 patients, failed induction of labor 7 patients, antepartum hemorrhage 3 patients and other indications in 11 patients.

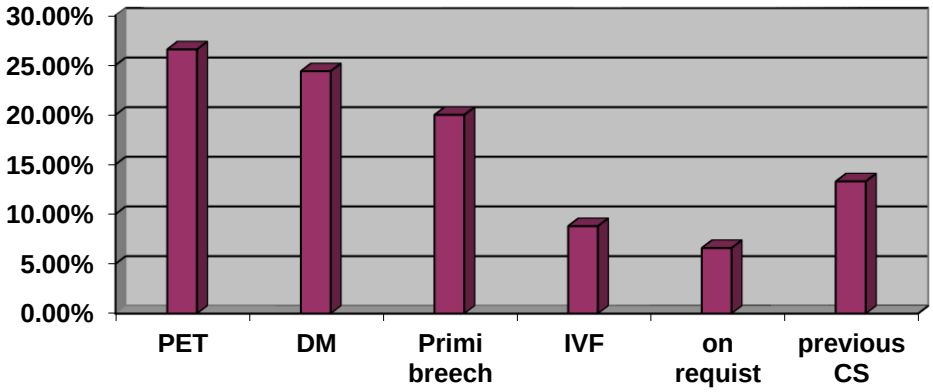

Figure 2, indications of elective CS

Most of the patients (94%) operated under GA, 6% under Spinal anesthesia and no patients under PDA. *Figure* 3

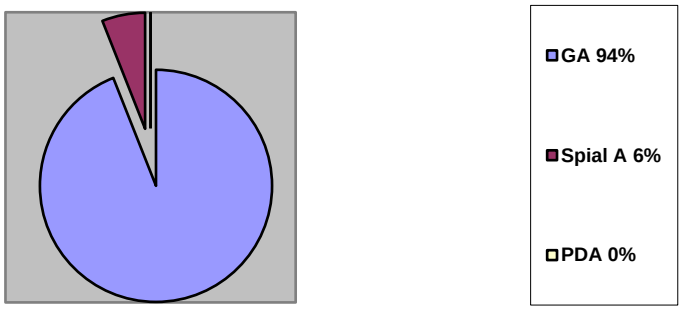

Figure 3, type of anesthesia

Post-operatively the patients allowed for early mobilization, and to drink next morning after the operation and immediately if operation under SA [8]. As analgesic, only 50 mg Pethidine I.M advised as a single shot postoperatively, then for next 24 hours mostly with non-steroidal anti-inflammatory agents like Diclofenac suppository if available. Foley's catheter removed next morning. Tow days

after the operation, pelvic floor exercise was advised and carried out for the next 6 weeks. Before discharging the patient, clinical examination, Complete blood picture, ultrasound for both kidneys and Uterus is done.

RESULTS

The data and the results of the operations over that period of time are collected and registered, *Table 2*

Table 2, results of Misgav Ladach CS

No	Character	MLCS	Advantages
1.	Op time	18 – 25 minutes	. Non closure of peritoneum ↓ op Time by average 1.9 minutes. . Closure of abd. Wall in 2 layers ↓ op time by average 3.4 minutes. . ↓ op time leads to: . ↓ Exposure to anesthesia. . ↓ cost of op. . Better out come for baby. . Early mobilization and ↓ Post op complications like PPH.
2.	Material	3.4 sutures	. Less material. . Less cost of op. . Better healing.
3.	Admission days	3.3 days	. Less admissions days . Less cost. . Psychologically better for patient
4.	I.V fluid	2500 – 3000 ml	. Less cost of operation. . Early Hydration.
5.	Analgesic	50 mg Pethidine i.m	. Less cost.
6.	Passing flatus	93% after 24 h	. Earlier mobilization . Early consumption of bowel habit.
7.	Haemoglobin difference before and after op	2.1 gm%	. Less damage to the BV and tissues . Less bleeding. . Early recover

These compared to the results of 120 patients operated with ordinary Caesarean section in 3 hospitals. Table 3 shows the results and differences between the two types of the operations, some are retrospectively studied.

Table *3, differences between both types of CS*

Feature	**120 MLCS**	**120 Ordinary CS**
1. mean operation time	21.8 min.	27.3 min
2. mean admission days	3.3 days	3.9 days
3. Iv Fluids	2500 ml	>3000 ml
4. Anesthesia	Less exposure	More exposure
5. Analgesia	50 mg Pethidine i.m	100 mg pethidine i.m
6. mobilization	Early and easy	Later with difficulty
7. Discharge	3th day	3-4th day
8. Sutures	3.4 sutures	> 4.2 sutures
9. Haemoglobin difference	2.1 gm%	2.9 gm%

With Misgav Ladach Caesarean section at least 7 - 8 minutes can be saved by reduction in the operation time and thus less exposure of fetus and mother to the anesthetic agents. I.v fluid is given only during the operation and continued for 7- 8 hours after that, with the ordinary CS i.v fluid needed for more than 24 hours. Even though the pain is nearly same in both types of operations, only 50 mg pethidine is required by MLCS. Mobilization, drinking and eating are allowed 15 hours after the operation especially if operation carried out under Local Anesthesia. 93% passing flatus after 24 hours from the operation compared to 87% with the ordinary CS.

The cost of the operation is reduced with less material needed, less anesthetic agents required, less iv fluid and admission days.

The average intra-operative bleeding around 350 ml, where the Hemoglobin next morning is reduced about 5-7 %, only 2 patients develop Abdominal wall Haematoma and one of them is evacuated by aspiration needle. 6 patients operated before with the same type of CS, no intra or extra peritoneal adhesions were seen. 3 patients develop fever with temperature >38.5 C, one with Mastitis and other two with UTI, no sub-involution, endometritis or thrombosis is recorded.

CONCLUSION

Use of this technique of Caesarean section, simplify the operation for the patient, Anesthetist and the operator. Misgav Ladach CS can be easily done, reduce the operation time - which might needed by medical staff -, reduce the exposure to the anesthetic agent especially if carried out under General anesthesia and thus less exposure of fetus to such depressant agents. The cost of the operation is reduced by decrease of the admission days and materials needed. Another advantage for this kind of CS is the early contact between mother and her baby – including breast feeding - which might start even during the operation. Because of the above advantages, the operation now in most of the Hospitals over the world is the method of choice to deliver the baby operatively.

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