

Caesarean Section Incision In Abdomen Revisited

P Deka, S Kanagasabai, L Karanth

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Abstract

Introduction:

Caesarean section is one of the oldest operations performed from around sixteen century. Different method of uterine incision studied extensively but there are very limited studies on abdominal incision. Types of incisions: Vertical, Pfannenstiel, Maylard etc.

The Joel-Cohen incision has advantages compared to the Pfannenstiel incision. Closure:

Closure of the subcutaneous fat may reduce wound complications but it is unclear to what extent these differences affect the well-being and satisfaction of the women concerned. No adequate study available about the advantage and disadvantage of material used in skin closure. Conclusion: It is a fascinating fact that although caesarean section is one of the oldest surgeries in mankind there is no unanimous agreement about different techniques among experts in abdominal incision and closure.

INTRODUCTION

According to Greek mythology Apollo removed Asclepius, founder of the famous cult of religious medicine, from his mother's abdomen. Numerous references to caesarean section appear in ancient Hindu, Egyptian, Grecian, Roman, and other European folklore. It is commonly believed to be derived from the surgical birth of Julius Caesar; however this seems unlikely since his mother Aurelia is reputed to have lived to hear of her son's invasion of Britain¹. At that time the procedure was performed only when the mother was dead or dying, as an attempt to save the child for a state wishing to increase its population. Roman law under Caesar decreed that all women who were so fated by childbirth must be cut open; hence, caesarean. Other possible Latin origins include the verb "caedere," meaning to cut, and the term "caesones" that was applied to infants born by post-mortem operations. Ultimately, though, we cannot be sure of where or when the term caesarean was derived. Until the sixteenth and seventeenth centuries the procedure was known as caesarean operation. This began to change following the publication in 1598 of Jacques Guillemeau's book on midwifery in which he introduced the term "section." Increasingly thereafter "section" replaced "operation." Caesarean section is the commonest major operation performed on women worldwide. Operative techniques, including abdominal incisions, vary.

DIFFERENT TYPES OF INCISION

VERTICAL INCISION

Traditionally this incision has been used for long time. Vertical infra umbilical incision has its own advantages and disadvantages. Clinicians should not use vertical incisions to perform caesarean sections in morbidly obese women, researchers said here at the American College of Obstetricians and Gynecologists' (ACOG) 58th Annual Clinical Meeting².

PFANNENSTIEL INCISION

This incision is introduced by Pfannenstiel in 1900³. This incision is a curved incision which follows the inguinal ligament. It involves dissection of subcutaneous tissue and anterior rectus sheath.

JOEL COHEN INCISION

This incision introduced by Joel Cohen for abdominal hysterectomy in 1954. The incision is a straight transverse incision, positioned slightly higher than the pfannenstiel incision. The subcutaneous tissue is not sharply divided. The anterior rectus sheath is incised in the midline for 3 cm, but muscles are not separated from the sheath. The peritoneum is bluntly opened in a transverse direction and, with the assistance help, the opening is widened by traction in a transverse direction⁴.

MODIFIED JOEL COHEN INCISION

Wallin and Fall⁵ placed the incision 3 cm above the pubic symphysis and bluntly opened the peritoneum. In addition they did not close the parietal and visceral layers of the peritoneum.

MAYLARD INCISION

It is another type of transverse approach. Here the rectus muscles are cut and inferior epigastric vessels are ligated to get good access. Originally it was used for radical pelvic surgery.

SELF INFLICTED INCISION (?)

A very surprising self inflicted caesarean section described where the patient cut through her skin in a 17 cm vertical line several centimeters to the right of her navel, starting near the bottom of the ribs and ending near the pubic area⁶.

'POST CAESAREAN' SKIN INCISION

Excision of previous scar is studied by a specialised double bladed scalpel and found to yield a better healing as it results in uniformly excises scar tissue and avoided the need for two incisions. An adjusting screw allows the necessary width to be excised⁷.

TRANSVERSE VERSUS VERTICAL INCISION

When a transverse rather than a vertical skin incision is used, average operating time is longer, and more women require blood transfusion. On the other hand febrile morbidity occurs somewhat less frequently with the transverse skin incision, and most women find the transverse scar more acceptable commercially⁸. Midline vertical skin incision is reserved for women who already have a midline scar⁹. Rarely it may be used when it is anticipated that a midline vertical incision in the uterus may be necessary e.g. transverse lie.

DIFFERENT TRANSVERSE INCISIONS

A modified Joel Cohen technique was compared with the Pfannenstiel incision in a randomized control trial⁴. Blood loss and operating time were significantly reduced in the study group, although post operative haemoglobin levels were similar. The Joel-Cohen incision has advantages compared to the Pfannenstiel incision. These are less fever, pain and analgesic requirements; less blood loss; shorter duration of surgery and hospital stay¹⁰. Ninety seven were studied by Ayers et.al and found that Maylard length is significantly greater (14.0+/-2.1cm), with no difference in operative morbidity. But the Maylard incision is a safe option which should be strongly considered when risk

factors (eg, macrosomia, twins) demand maximal surgical exposure for non traumatic abdominal delivery¹¹. In a systemic review is found that 'Joel-Cohen based' compared with Pfannenstiel CS was associated with: less blood loss, (five trials, 481 women; weighted mean difference (WMD) -64.45 ml; and shorter time from skin incision to birth of the baby (five trials, 575 women; WMD -3.84 minutes; 95% CI -5.41 to -2.27 minutes)⁹.

CLOSURE

Wound healing in rectus sheath is best if the stitches are inserted 10mm from the edge and 10mm apart. This is because collagenolysis occurs over an area of 10 mm from the wound edge. Any wound closures within this zone will therefore be weaker¹³. Closure of the subcutaneous fat may reduce wound complications but it is unclear to what extent these differences affect the well-being and satisfaction of the women concerned¹⁴. A great variety of materials and techniques are used for skin closure after caesarean section and there is a need to identify which provide the best outcomes for women⁹. Obstetricians should be aware that the effects of different suture materials or methods of skin closure at CS are not certain¹⁵. The skin layer, which is the subject of this review, can be repaired by sub cuticular stitch (immediately below the skin layer), an interrupted stitch (individual stitches) or with skin staples⁹. In randomized controlled trial 66 women undergoing caesarean section compared for subcuticular versus staples closer. Pfannenstiel skin incisions closed with subcuticular closure following caesarean section result in less postoperative discomfort and are more cosmetically appealing at the six-week postoperative visit as compared to incisions closed with staples¹⁶.

CONCLUSION

It is a fascinating fact that although caesarean section is one of the oldest surgeries in mankind there is no unanimous agreement about different techniques among experts in abdominal incision and closure. Joel Cohen technique with subcuticular stitches seems to be better option than other techniques.

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Author Information

Prasanta Kumar Deka, MD,DNB

Assistant Professor, Melaka Manipal Medical College

Sachchithanatham Kanagasabai, FRANZCOG,FRCOG,FACS,FICS,DIMH

Professor and head, Melaka Manipal Medical College

Laxminarayan Karanth, MD

Associate professor, Melaka Manipal Medical College