Cesarian Section

For 5th year medical students
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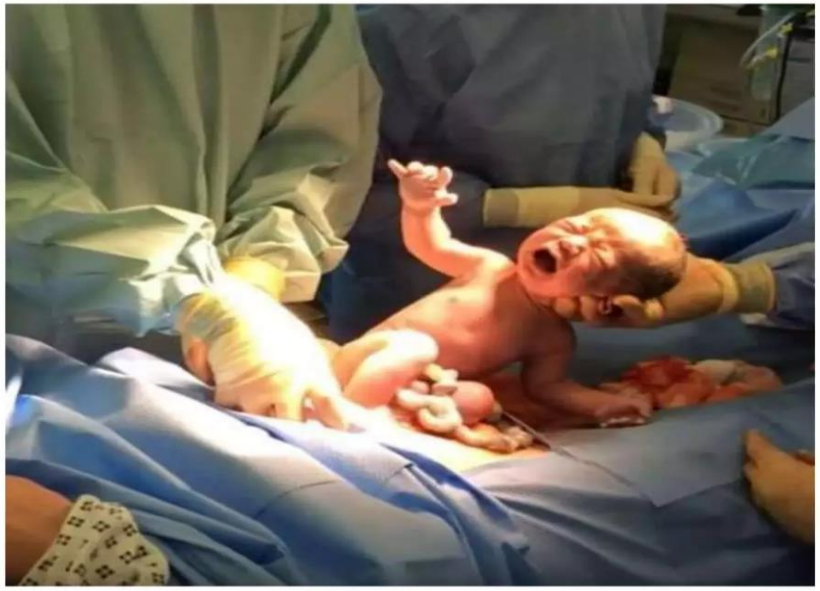


Definition

- A surgical procedure that is carried out under anesthesia whereby the fetus, placenta and membranes are delivered through an incision in the abdominal wall and uterus.
- The international healthcare community has previously considered the rate of 10% and 15% to be ideal for caesarean section.
- During the last decade there has been two- three folds rise in the incidence of C/S.
- In the United States as of 2017, about 32% of deliveries are by C-section.
- One study in Jordanian University Teaching hospitals showed that the rate of CS increased from 18.2% in 2002 to 30.3% in 2012.

Skin Incisions

- Low transverse skin incision

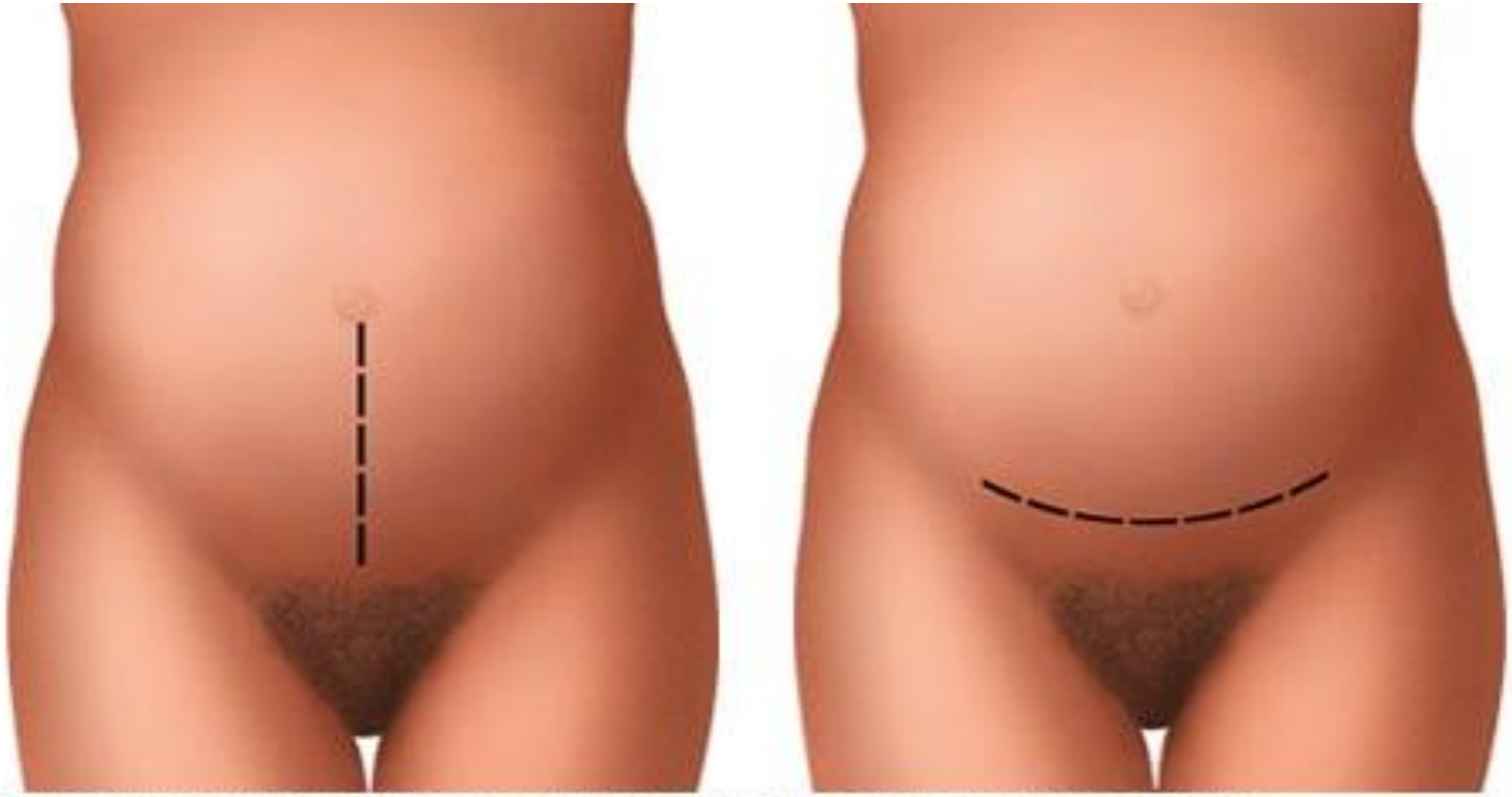
➢ "Pfannenstiel or "Bikini line incision".

➢ This incision has the advantage of improved cosmetic results, decreased analgesic requirements and superior wound strength.

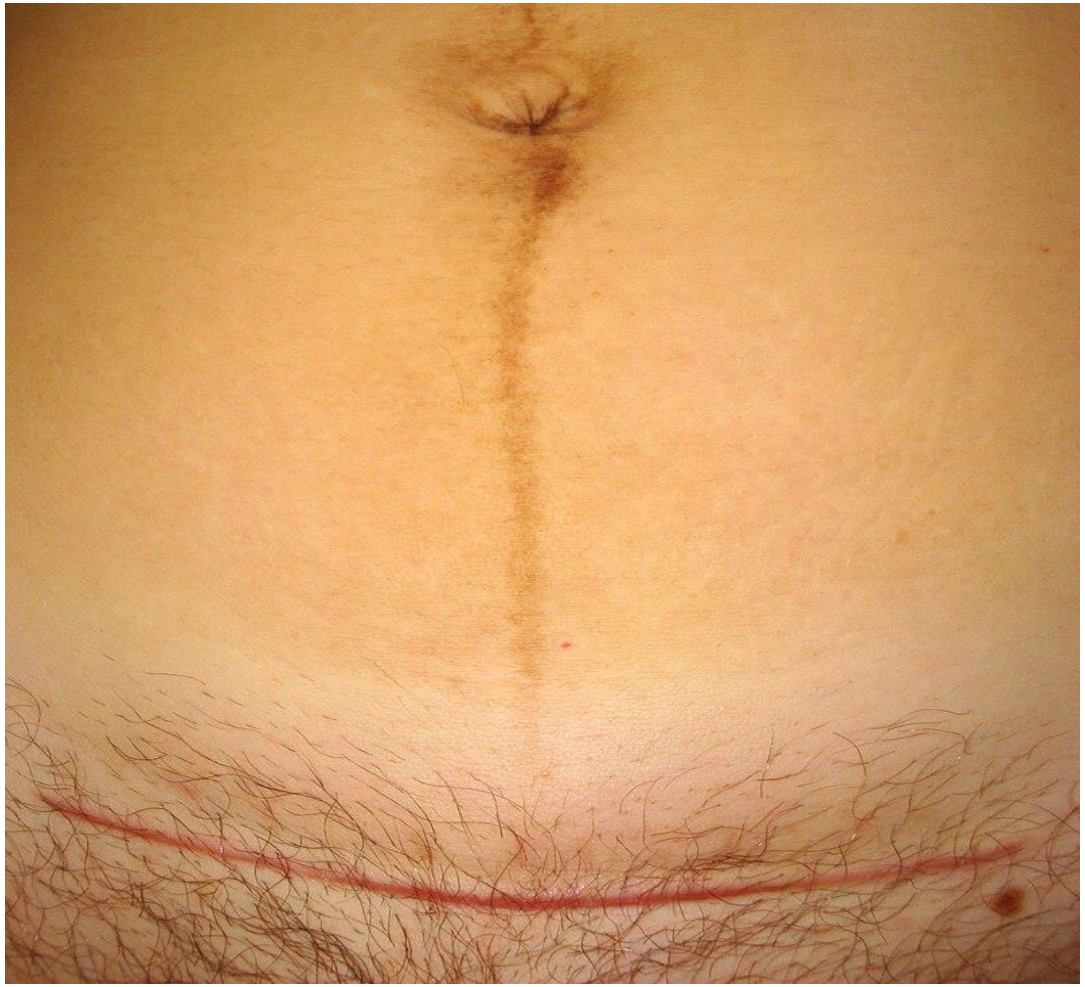
- Vertical Midline infraumbilical skin incision

➢ The vertical incision provides greater ease of access to the pelvic and intra-abdominal organs and may be enlarged more easily, however, the incidence of wound dehiscence is increased & increased risk of incisional hernia later on.

Skin Incisions in C/S



Lower transverse C/S scar and Linea Nigra



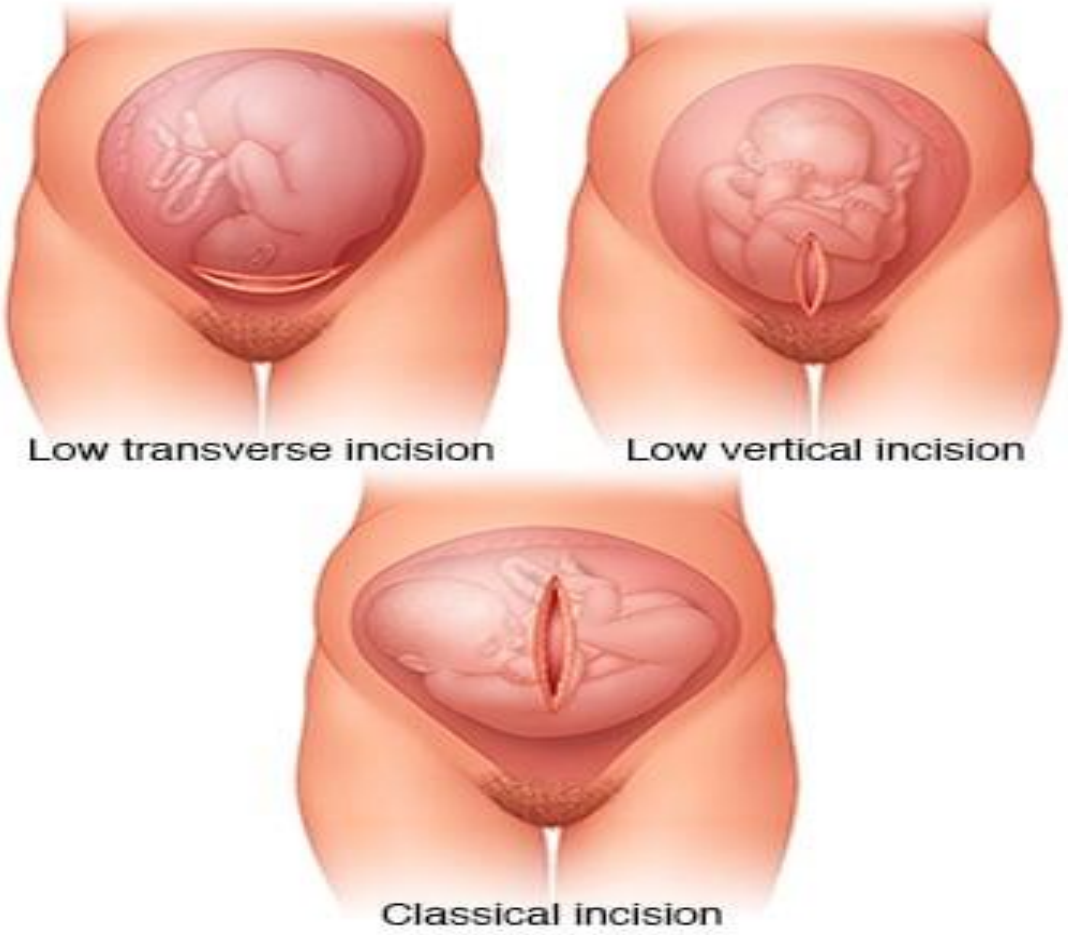
Types of C/S (According to timing)

- Emergency
- Elective (Planned)

Types of uterine incisions

- Low transverse incision (Lower Uterine Segment C/S) (the commonest)
- Inverted T incision
- Low vertical incision
- Upper Vertical incision (Classical C/S)

Uterine Incisions in C/S



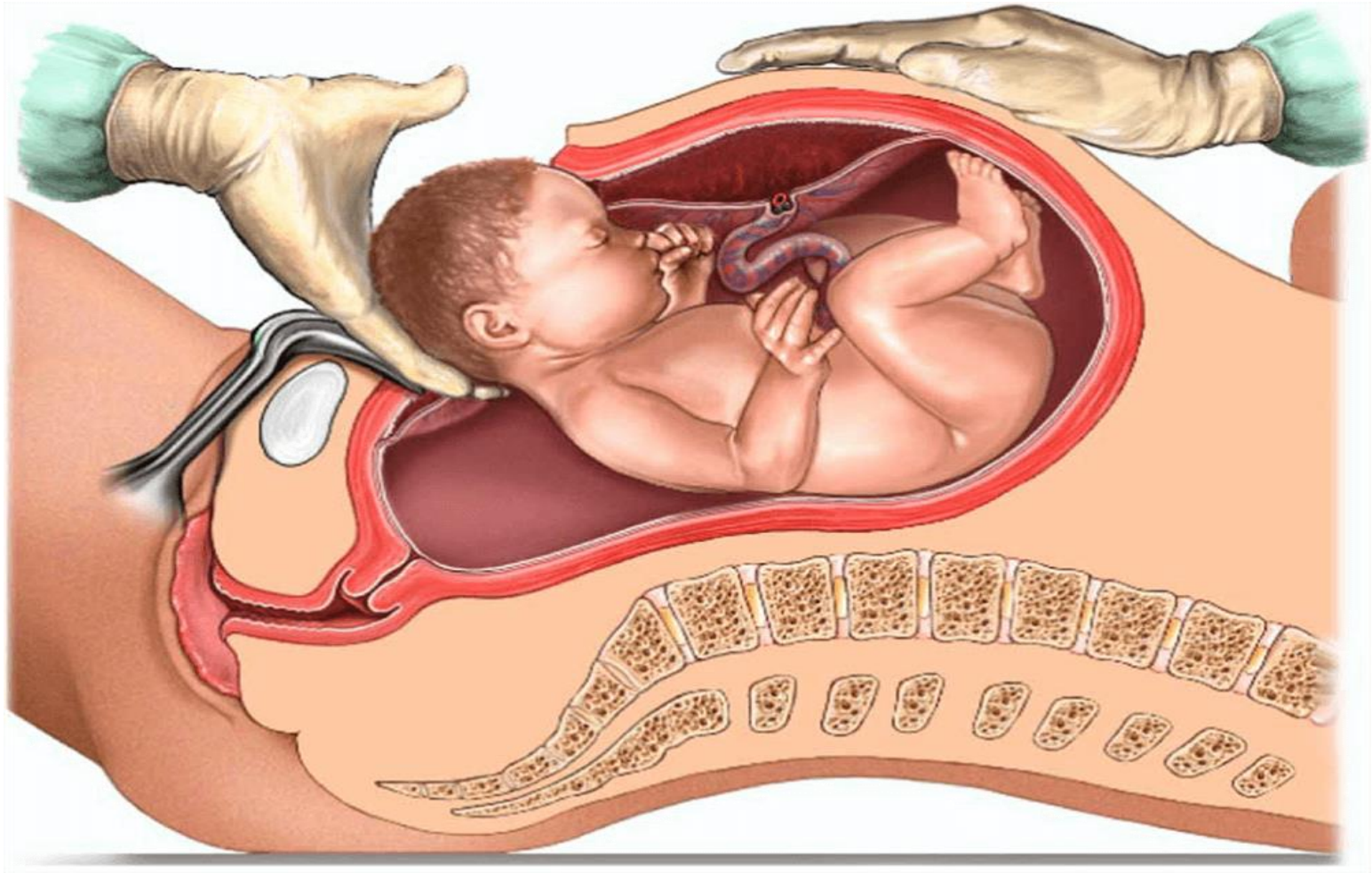
Lower Uterine Segment C/S

- The fetus is extracted through a transverse incision made in the lower segment of the uterus.
- A lower uterine segment incision is used in over 95% of C/S due to ease of repair, reduced blood loss and low incidence of dehiscence or rupture in subsequent pregnancies.
- LUS incision heals faster than an incision in the upper segment of the uterus.
- There is less muscle and more fibrous tissue in lower segment which reduces the risk of rupture in a subsequent pregnancy.

Cesarian Section

- **The anatomical layers are:**
- Skin
- Fat
- Rectus sheath
- Rectus abdominis
- The parietal peritoneum
- The visceral peritoneum
- Uterine muscles

LUSCS



Classical C/S

- The fetus is extracted through a longitudinal incision made in the upper segment of the uterus.
- It is rarely performed.
- **It is done only under certain circumstances, such as**:
- Big fibroid occupying the lower uterine segment
- Lower segment is difficult to be reached due to dense adhesions from previous abdominal or pelvic surgery.
- Placenta previa (in some cases)
- Transverse lie with the back down.
- Fetal abnormality e.g. conjoined twins
- Constriction ring
- Carcinoma of cervix

Blood loss during C/S

- **Cesarean Delivery is associated with a blood loss of about 1000 ML**

Tokophobia

- **Tokophobia: Severe Fear of Pregnancy and Childbirth**

- It can develop after a difficult labor, delivery, or other traumatic birthing event.
- It can develop after a traumatic events such as rape or domestic violence in girls and young women who have never been pregnant.
- It can develop in women who have had past anxiety or depression.

Planning mode of birth

- Ask for **consent** for caesarean birth only after providing pregnant women with evidence-based information (NICE Guidance **2004, amended 2021).**

- Ensure the woman's dignity, privacy, views and culture are respected, while taking the woman's clinical situation into account (NICE Guidance **2004, amended 2021)**

- The women's preferences and concerns are central to the decision-making process. **[NICE Guidance 2004, amended 2021]**

Indications

- Prolonged labor in the first & second stage of labor (Labor Dystocia)
- Cephalopelvic Disproportion (CPD)
- Fetal distress (fetal hypoxia, persistent fetal bradycardia, cord prolapse)
- APH (Placenta Previa, Major Abruptio Placenta, Vasa previa)
- Placenta Accreta, increate or percreta
- Multiple pregnancy
- Placental insufficiency (IUGR)
- Macrosomia
- Malpresentation (i.e. Breach presentation, face, Brow)
- Multiple pregnancy
- Medical disorders with pregnancy (HPT, Diabetes)
- To reduce the chance of mother to child transmission of maternal infections (HIV) (HSV) (Hepatitis C+ HIV)
- Patient Request

Indications

- Previous Two LUS C/S
- Previous one Classical C/S
- Previous uterine rupture
- Previous myomectomy where the endometrial cavity is entered

Timing of Elective C/S

- Do not routinely carry out planned caesarean birth before 39 weeks, as this can increase the risk of respiratory morbidity in babies. **[NICE,2004]**

Skin Preparation

- Use alcohol-based chlorhexidine skin preparation before caesarean birth to reduce the risk of wound infection.[NICE,2021]

- Use aqueous povidone-iodine vaginal preparation before caesarean birth in women with ruptured membranes to reduce the risk of endometritis. If aqueous povidone-iodine vaginal preparation is not available or is contraindicated, aqueous chlorhexidine vaginal preparation can be used. **[NICE, 2021]**

Antibiotics

- Offer women prophylactic antibiotics before skin incision for caesarean birth, choosing antibiotics that are effective against endometritis, urinary tract and wound infections. **[2011, amended 2021]**

Preoperative testing and preparation of cesarian birth

- Before caesarean birth, carry out a full blood count to identify anemia, antibody screening, and blood grouping with saving of serum. **[NICE 2004, amended 2021]**

Anesthesia for cesarean birth

- Provide pregnant women having a caesarean birth with information on the different types of post-caesarean birth analgesia, so that they can make an informed choice.

- Offer women who are having a caesarean birth regional anaesthesia in preference to general anaesthesia, including women who have a diagnosis of placenta praevia. **[NICE 2004, amended 2021]**

- Offer women antacids and drugs (such as H_2-receptor antagonists or proton pump inhibitors) to reduce gastric volumes and acidity before caesarean birth. **[NICE, 2004]**

- Offer women having a caesarean birth anti-emetics (either pharmacological or acupressure) to reduce nausea and vomiting during caesarean birth. **[NICE, 2004]**

Thromboprophylaxis

- There is **4-fold higher** rate of deep vein thrombosis in women undergoing cesarean delivery as compared with vaginal deliver
- Offer thromboprophylaxis to women having a caesarean birth.
- Take into account the risk of thromboembolic disease when choosing the method of prophylaxis (for example, graduated stockings, hydration, early mobilization, low molecular weight heparin). **[NICE - 2011]**

Presence of pediatrician at cesarian birth

- Ensure an appropriately trained practitioner skilled in the resuscitation of newborn babies is present for caesarean birth performed under general anaesthesia, or if there is evidence of fetal compromise. **[2004]**

- As babies born by caesarean birth are more likely to have a lower temperature, ensure thermal care is in accordance with good practice for thermal care of newborn babies. **[2004]**

- Offer and facilitate early skin-to-skin contact between the woman and her baby. **[2004, amended 2021]**

- Offer women who have had a caesarean birth and who wish to breastfeed support to help them to start breastfeeding as soon as possible after the birth of their baby. **[2004, amended 2021]**

Fetal complications

- **Respiratory problems:** Babies born by C-section are more likely to develop a transient tachypnea of the newborn (TTN).
- **Surgical injury.** Although rare, accidental nicks to the baby's skin can occur during surgery.
- **Other complications:** [Iatrogenic prematurity, low APGAR (appearance, pulse, grimace, activity, respiration) score, and early neonatal death]

Pain management after C/S

- **Discuss options with women for pain relief after caesarean birth**:
- Paracetamol
- NSAID
- Pethidine
- Morphine
- Intrathecal diamorphine
- Intrathecal preservative-free morphine + plus intrathecal fentanyl

Maternal Complications

- **Intraoperative:**
- Anesthesia complications
- Bleeding (Atony, Blood vessels injuries, Lacerations)
- Bladder injury
- Bowel injury
- Caesarean hysterectomy

✓The most common indication for caesarian hysterectomy is uncontrollable hemorrhage requiring immediate treatment.

Maternal Complications

- **Early Complications:**

- Pain which may affect initial bonding & breast feeding
- Lung atelectasis
- Paralytic ileus
- Urine retention
- Stress incontinence
- UTI
- Endometritis
- Wound infection
- DVT and Pulmonary embolism

Common causes of Fever after C/S

- Lung atelactasis
- Wound infection
- Endometritis
- Bacteremia
- UTI
- Breast engorgement & breast abscess
- Hematoma
- Deep vein thrombosis

✓ Women undergoing C/S have 5-20 fold greater risk of an infectious complication when compared with vaginal delivery.

✓Endometritis, urinary tract and wound infections occur in about 8% of women who have had a caesarean birth.

Maternal Complications

- **Long- term complications:**
- Adhesions
- Placenta previa (the proportion of patients with placenta previa increases almost linearly after each previous C/S).
- Placenta accreta, increta & percreta
- Uterine Rupture during future pregnancies

Trial of Labor after one C/S

- Vaginal birth after cesarean section (VBAC) describes a vaginal delivery in a women who has given birth via cesarean section in a former pregnancy.
- Patients desiring VBAC delivery undergo a trial of labor (TOL), also called trial of labor after cesarean section (TOLAC).
- Up to 70% of women with previous C/S can achieve a vaginal delivery
- Patient’s choice can not and should not be ignored in decisions regarding management, and it is important to discuss the risks and benefits of elective C/S as compared to trial of vaginal delivery.
- Serious potential complications include uterine rupture or uterine dehiscence and associated maternal and/or neonatal morbidity.

Trial of Labor after one C/S

- **The candidates & The circumstances:**

✓Patients with previous lower uterine segment transverse scar (not vertical, not classical).

✓a time interval between CS and next conception of ≥12 months

✓Patients with non-recurring indications for cesarean section

✓Spontaneous labor carries a higher risk of successful vaginal delivery and a lower risk of uterine rupture.

✓Low-dose oxytocin and/or mechanical dilation with intracervical balloon can be used for induction or augmentation of labor.

✓Prostaglandins not used

✓ Continuous fetal heart rate monitoring is strongly recommended

✓Facilities offering TOLAC should have the capability to perform an emergency cesarean delivery

هل ستظل الحياة صعبةً هكذا دائماً يا ليون
أم هي صعبة فقط لأني مازلت صغيرة؟؟؟"
غالباً ... هي صعبة إلى الأبد"

"Léon: The Professional"

References

❖ **Caesarean birth**

- NICE guideline [NG192]Published: 31 March 2021
- Last updated: 30 January 2024

❖ Photos from the internet pages