Perineal injury
Episiotomy

**Definition**
An episiotomy is an incision through the perineum made to enlarge the diameter of the vulval outlet and assist childbirth.

There were two reasons for episiotomy; one was a primigravida and the other a previous episiotomy. In other words, every vaginal delivery should be accompanied by episiotomy. It was argued that this reduced the risk of tears and subsequent problems from prolonged bearing down, such as prolapse.
Technique
The question of informed consent needs to be addressed during antenatal care; when the fetal head is crowning, it is not possible to obtain true informed consent.

- An episiotomy is performed in the second stage, usually when the perineum is being stretched and it is deemed necessary.
- If there is not a good epidural, the perineum should be infiltrated with local anaesthetic.
• The incision can be midline or at an angle from the posterior end of the vulva (a mediolateral episiotomy).
• A mediolateral episiotomy is usually recommended; a midline episiotomy is an incision in a comparatively avascular area and results in less bleeding, quicker healing and less pain, however, there is an increased risk of extension to involve the anal sphincter (third/fourth-degree tear).
• A mediolateral episiotomy should start at the posterior part of the fourchette, move backwards and then turn medially well before the border of the anal sphincter, so that any extension will miss the sphincter.
Figure 15.1 A right mediolateral episiotomy
Figure 15.2 Repair of an episiotomy/second degree perineal tear. (a) The perineum prior to the repair; (b) continuous repair of the vaginal mucosa and interrupted repair of the muscle; (c) subcutaneous suture of the skin; (d) completed repair.
Complications
Complications include
• haemorrhage
• Infection (prophylactic antibiotics may be indicated if contamination is suspected)
• extension to the anal sphincter (third/fourth-degree tears)
• dyspareunia.
Perineal injury:
Perineal trauma is common, affecting up to 90% of primigravida.
Definition of perineum

First degree: involves skin only.
Second degree: involves perineal muscle, includes episiotomy.
Third degree: second degree with disruption of the anal sphincter, subdivided into:

- 3a: less than 50% of external sphincter thickness torn.
- 3b: more than 50% of external sphincter thickness torn.
- 3c: internal anal sphincter also torn.
Fourth degree: third degree tear with torn anal epithelium.
Risk factors for perineal trauma:
1. primigravida
2. second stage of labour more than 60 minutes
3. instrumental vaginal delivery
4. midline episiotomy
5. macrosomia
6. fetal malposition
7. epidural anaesthesia
8. shoulder dystocia
Repair:

1. Identification of the extent of damage to the perineum, vagina and rectum with adequate lighting and analgesia.

2. Technique of repair: Some first-degree tears that are not bleeding will not require suturing. A loose continuous suture technique to appose each layer (vaginal epithelium, perineal muscle and skin) is associated with less pain. Repair of anal sphincter requires adequate muscle relaxation with regional or general anaesthesia.
3. Postoperative precautions:
Prophylactic antibiotics as cephalosporines and metronidazole, analgesics as NSAID, paracetamol and opioid analgesia stool softening like lactulose for 5-10 days (3rd degree tear)
advise on perineal hygiene and pelvic floor exercise
urethral catheter may be indicated to avoid urinary retention
Complications:

1. Infection
2. Bleeding
3. Missing the apex of the tear may cause haematoma
4. Deep sutures into the rectum could lead to fistula formation
5. Improper suturing could lead to later pain and dyspareunia
6. 3rd and 4th degree tears could lead to anal incontinence
Haematoma:

Haematomas are divided into those that lie above and those that lie below the levator muscle.

Infralevator h. include those of the vulva, perineum, paravaginal and ischiorectal fossa.

Supralevator h. spread to the broad ligament and retroperitoneal space.
Figure 18.12 (a) Vulval and (b) paravaginal haematomas.
Incidence: the incidence of haematomas more than 4 cm in diameter is approximately 1:1000 deliveries.
Aetiological factors:
1. Episiotomy (85-90 %)
2. Instrumental vaginal deliveries.
3. Primiparity.
4. Hypertensive disorders.
5. Other factors like: multiple pregnancy, vulval varicosities, macrosomic baby, prolonged second stage of labour.
Presenting symptoms:
Infralevator haematomas
1. May be asymptomatic until shock develops
2. Vaginal swelling
3. continued vaginal bleeding
4. Severe vaginal / rectal pain
5. Urinary retention
• Supralevator haematomas
  1. Cardiovascular collapse
  2. Uterine displacement
  3. Abdominal or rectal pain
  4. continued vaginal bleeding
Management:
1. Resuscitation measures
2. Haematomas less than 5 cm in diameter and not expanding:
   Observation using ice-packs and pressure dressings to limit its expansion, analgesia and markings should be made on the skin to establish whether the margins are expanding
3. Haematomas more than 5 cm in diameter and are expanding:
   Surgical drainage with ligation of bleeding vessels, leave the wound open with a drain
4. Broad ligament haematomas are usually managed conservatively, if it is not possible to maintain a stable hemodynamic state, surgical exploration is recommended and a hysterectomy may be indicated.

5. Postoperative precautions (as in perineal trauma)
Caesarean section

Definition
A Caesarean section, also known as C-section or Caesar, is a surgical procedure in which incisions are made through a mother’s abdomen (laparotomy) and uterus (hysterotomy) to deliver one or more babies.
Key steps in reducing mortality were:
- adherence to principles of asepsis;
- the introduction of uterine suturing
- extraperitoneal Caesarean section and then moving to low transverse incision;
- anaesthesia advances;
- blood transfusion;
- antibiotics.
Prevalence
In the UK, more than 21 percent of all babies are now delivered by Caesarean section. World Health Organization to hold a consensus conference. This conference concluded that there were no health benefits above a Caesarean section rate of 10–15 per cent.
Factors that may contribute to an increase in the rates of Caesarean section

- Inaccurate dating of the pregnancy
- Fetal monitoring
- Macrosomia
- Maternal request
- The arguments surrounding this area are complex and combine ethical dilemmas, the fetal and maternal risks of vaginal and surgical deliveries and the financial consequences of permitting such preferences.
Indications
There are many different reasons for performing a delivery by Caesarean section. The four major indications accounting for greater than 70 per cent of operations are:
1. previous Caesarean section
2. dystocia
3. malpresentation
4. suspected acute fetal compromise.
Other indications, such as multifetal pregnancy, abruptio placenta, placenta praevia, fetal disease and maternal disease are less common. No list can be truly comprehensive and whatever the indication, the overriding principle is that whenever the risk to the mother and/or the fetus from vaginal delivery exceeds that from operative intervention, a Caesarean section should be undertaken.
Morbidity and mortality
Confidential Enquiries into Maternal Deaths have enabled the risks associated with different methods of delivery to be analysed; case fatality rate for all Caesarean sections is five times that for vaginal delivery, although for elective Caesarean section the difference does not reach statistical significance.
Some maternal deaths following Caesarean section are not attributable to the procedure itself, but rather to medical or obstetric disorders that lead to the decision to deliver using this approach. Many women who deliver vaginally encounter the same problems.
Full informed consent must always be obtained prior to operation. The level of information discussed must be commensurate with the urgency of the procedure, and a common sense approach is needed. It is important to remember that no other adult may give consent for another (although it is good practice to keep relatives fully informed). Where there is incapacity to consent (as may occur with conditions such as eclampsia)
Surgical basics

- The bladder should be emptied before the procedure.
- A left lateral tilt minimizes compression of the maternal inferior vena cava

The Pfannenstiel incision

The skin and subcutaneous tissues are incised using a transverse curvilinear incision two finger breadths above the symphysis pubis

The transverse Pfannenstiel incision has the advantages of

- improved cosmetic results,
- Decreased analgesic requirements
- superior wound strength.
The infra-umbilical incision

A vertical skin incision is indicated in cases of extreme maternal obesity, suspicion of other intra-abdominal pathology necessitating surgical intervention, or where access to the uterine fundus may be required (classical Caesarean section). The vertical incision provides

• greater ease of access to the pelvic and intra-abdominal organs
• enlarged more easily; however,
• incidence of wound dehiscence is increased.
Uterine incision

A lower uterine segment incision is used in over 95 per cent of Caesarean deliveries due to

- ease of repair,
- reduced blood loss and
- low incidence of dehiscence or rupture in subsequent pregnancies
There are relatively few absolute indications for classical section. These include

- lower uterine segment containing fibroids or a
- Lower segment covered with dense adhesions
- placenta praevia,
- transverse lie with the back down,
- fetal abnormality (e.g. conjoined twins), or
- Caesarean section in the presence of a carcinoma of the cervix (so as to avoid damage to the cervix and its vascular and lymphatic supply).
Figure 15.7 Uterine incisions for Caesarean section. (a) Transverse lower segment incision. (b) Classical Caesarean section incision
Once the uterus is incised, the membranes are ruptured if still intact, and the accoucheur’s hand is positioned below the presenting part. If cephalic, the head is flexed and delivered by elevation though the uterine incision either manually, or with forceps.

Once the fetus is delivered, an oxytotic (5 IU Syntocinon i.v.)

The placenta is delivered by combined cord traction; Closure of the uterus should be performed in either single or double layers with continuous or interrupted sutures.

Peritoneal closure is unnecessary

Abdominal closure is performed in the anatomical planes
Complications

Intraoperative complications

Bowel damage

Caesarean hysterectomy
The most common indication for Caesarean hysterectomy is uncontrollable maternal haemorrhage; life-threatening haemorrhage requiring immediate treatment after 1 in 1000 deliveries.

Haemorrhage
Haemorrhage may be a consequence of damage to the uterine vessels, or may be incidental as a consequence of uterine atony or placenta praevia.
Placenta praevia
The proportion of patients with a placenta praevia increases almost linearly after each previous Caesarean Section

Urinary tract damage
The risk of bladder injury is increased after prolonged labours where the bladder is displaced caudally, after previous Caesarean section where scarring obliterates the vesicouterine space, or where a vertical extension to the uterine incision has occurred. When such an injury is observed, repair with 2-0 Vicryl as a single continuous or interrupted layer is appropriate. The urinary catheter should remain *insitu* for 7–10 days.
Post-operative complications

1. Infection and endometritis

Women undergoing Caesarean section have a 5–20-fold greater risk of an infectious complication when compared with a vaginal delivery. Complications include fever,

- wound infection
- Endometritis
- bacteraemia and urinary tract infection
- Haematoma
- atelectasis
- deep vein thrombosis.
Infections are commonly polymicrobial and pathogens isolated from infected wounds and the endometrium include *Escherichia coli*, other aerobic Gram-negative rods, and Group B streptococcus.

General principles for the prevention of any surgical infection include careful surgical technique, skin antisepsis, prophylactic antibiotics.
2. **Pulmonary emboli and deep vein thrombosis**

Deaths from pulmonary embolism remain the leading direct cause of maternal death, and Caesarean section is a major risk factor.

3. **Psychological**

All difficult deliveries carry increased maternal psychological and physical morbidity. The compromised postpartum psychological functioning in women delivered by Caesarean section may be secondary to delayed contact with the baby.