Episiotomy (Perineotomy)

Definition :

Perineal incision during labor .

Advantages :

1. Prevent irregular perineal tear .
2. Minimizes head compression at the vulvar ring .
3. Minimize perineal over-stretch and decrease the risk of subsequent prolapse .

Indications :

I- Maternal :

1. Rigid perineum as in elderly primipara .
2. Perineal scar of previous tear or perineorrhaphy .
3. Edema of the vulva .
4. Narrow subpubic arch .
5. Instrumental delivery .

II- Fetal :

1. Malpresentations as breech or face-to-pubic .
2. Oversized fetus .
3. Preterm fetus .

Types :

1- Medio-lateral episiotomy :

* The perineum is incised starting from the fourchette extending posterolaterally at an angle of 45° .
* The following structures are cut:
  a. Perineal skin .
  b. Vaginal skin .
  c. The transverse perineal and the bulbocavernosus muscles .
* Advantages : No injury to the anal sphincter or the rectal wall .
* Disadvantages :
  a. More blood loss .
  b. Repair is less anatomical and more difficult .
  c. If not repaired carefully it leaves a disfiguring scar , which deviated the fourchette to one side .
  d. Often followed by painful scar .

2- Central or median episiotomy :

* The perineum is incised vertically in the midline towards the anus .

* The following structures are cut :
  a. Perinea skin .
  b. Vaginal skin .
  c. The anococcygeal raphe in which the transverse perineal muscles are inserted .
  d. Inferior fibers of the urogenital disphragm .

*** Advantages :**

  a. Increases the antero-posterior diameter thus preventing compression of the head and lacerations of the anterior vaginal wall .
  b. Repair is easy and anatomical .
  c. Less tension on the wound when the patient moves and thus there will be less pain .

* The main disadvantage of the central episiotomy is the liability to extension in the anal canal either by the fetal head or shoulders .

3- L-shaped episiotomy (Douglas and Stromme) : In which the perineum is incised in the midline to within 2 cm from the anal orifice , then turn to one side to avoid the external anal sphincter .

4- Lateral episiotomy : This is useless because it does not increase the antero-posterior diameter of the vulva , which is the one more stretched during delivery .

N.B. :

Generous episiotomy : It is an extended episiotomy which open the anal canal (in median type) or opens the inschiorectal fossa (in mediolateral type) . Bilateral mediolateral incision may be done if needed (John Hopkins) .

Technique :

Timing :

1. When the presenting part is maximally distending the perineum (at the time of crowning in normal labor) . Best at the peak of a pain when the tissues are on stretch .
2. Before starting any manipulation (forceps , breech delivery , manual rotation , destructive operation … etc) . In forceps delivery , the forceps is first applied , slight traction is made to distend the perineum then the incision is done .

Anesthesia :

Unless the patient is under general or epidural anesthesia , local infiltration anesthesia is used .

Method :

Episiotomy is done with a long bladed curved scissors (curved on the flat) . It begins at the margin of the perineum and extends either laterally (in mediolateral type) through the perineum to one side of the anal canal or vertically towards the anus (in median episiotomy) . Small episiotomies are useless , otherwise lacerations will occur .

Repair :

Ideally , repair of episiotomy should be after placental delivery , however , in mediolateral type , repair can be done before placental delivery as bleeding is usually more . The steps of repair are :

1. Insert a vaginal pack to avoid soling of the operative field by the postpartum blood discharge .
2. Using 000 or 00 catgut on non-traumatizing needle , the cur perineum is sutured carefully through the following steps :
    a. Suturing of the vagina starting 1cm above the apex of the wound (to secure the retracted arteries) passing in all the thickness of the vagina . any type continuous or interrupted sutures can be used , but sutures should be haemostatic and never to leave a dead space .
    b. Suturing the perineal muscles from inside outwards .
    c. The skin sutures are either silk-worm or better done with interrupted chromic subcuticular cat-gout sutures .
3. Rectal examination : To be sure of no rectal injury or inclusion in a suture .
4. Remove the pack .

After-care :

1. NSAID are usually given for few days to treat pain and inflammation . Ibuprofen is perfect and safe . both cold hot sitz bath can be relief pain .
2. Prophylactic antibiotics are usually given systemically for 2 – 3 days .
3. The wound should be kept clean by vulval washing and antiseptics and maintained dry .
4. Silk sutures are removed after 6 days .
5. If the anal canal is opened , proceed like after repair of old complete perineal tear .

Complications :

1. Bleeding and shock (1ry , reactionary or 2ry He) .
2. Injury to the anal sphincter or anal canal .
3. Cephalic extension leading to extensive vaginal injury .

4. wound infection .
5. Painful scar leading to dyspareunia .
6. Incomplete repair leading to residual rectovaginal fistula or low rectocele .
7. Ugly scar (in the mediolateral type only) .
8. Bartholin cyst (in the mediolateral type only) .
9. Acute retention of urine as a reflex from pain .
10. Fetal scalp or head injury .
11. Anesthetic complications .

Obstetric forceps

Definition :

The forceps is an instrument designed for applying traction on the fetal head .

Description of the modern obstetric forceps :

1. The Blade proper : This is usually fenestrated to minimize compression of the head . It has two curves : A cephalic curve (4.5 inches radius) and a pelvic curve (7 inches radius) . The cephalic curve conforms to the shape of the fetal head . The pelvic curve allow a central grip on the head , and maintains the head in a flexed attitude during traction . The maximum separation between the two blades at the center is 3.5 inches (9 cm) and the minimum separation between the tips of the blades is 1 inch (2.5 cm) .
2. The shank : This varies in length in the different varieties of forceps . The use of the shank is to allow easier manipulation and locking of the blades outside the vagina .

3. The lock :

a. The French screw lock which consists of a screw pivot on the left blade and a fitted notch on the right blade
b. The English slot lock permits easy articulation of the blades , thus producing less compression on the fetal head .
c. The sliding lock of Kielland's and Barton's forceps which permits locking of the forceps when the two blades are at different levels , and with practically minimal compression .

4. The handles : Either smooth or corrugated , and may have projecting shoulders to facilitate traction .

Types of Modern Forceps :

I- The long forceps (described above) .

II- Axis traction forceps (to correct the angle of error) :

1. Neville Simpson forceps :

III- Short curved forceps (Wrigley) :

Like long curved forceps but with short shank .

IV- Kielland's forceps :

* It has as a nullified pelvic curve to allow rotation in a small arc.
* It has a sliding lock which is designed to facilitate proper grasping of the asynclitic head .

VI- Piper forceps :

Has perineal curve to allow application on the aftercoming head .

Actions :

1. Traction .
2. Rotation : When the obstetric forceps is used for long rotation (occipito-posterior positions or deep transverse arrest) .
3. Lever action : A side to side movement during traction . Also single blade can be used as a lever to help extraction of the fetal head during CS .

Indications :

I- Maternal indications :

1. Prolonged second stage .
2. Maternal distress . 3. To shorten the 2nd stage in cases with maternal diseases .

II- Fetal indications :

1. Fetal distress .
2. Prolapse of the pulsating cord , when the cervix is fully dilated and the head is engaged .
3. The aftercoming head in breech delivery .

Varieties of forceps operations :

The ACOG classification (2002) :

Type of procedure	Definitions
Outlet forceps	- Scalp is visible at the introitus without separating the labia .

	- Head has reached the pelvic floor . - Sagittal suture is in the DOA , DOP , LOA , ROA , LOP , ROP . - Head is at or on the perineum . - Head rotation is < 45 degree .
Low forceps	- Head is ≥ + 2 but not reached the pelvic floor . - Rotation is either < 45 or > 45 degree .
Mid forceps	- Head is from station 0 to + 1
High forceps	- Not included in the classification since it is obsolete .

Pre-Requisites :

1. The head must be engaged .
2. The cervix must be taken up and fully dilated .
3. The presentation must be a suitable one .
4. The membranes must be ruptured to avoid dragging on tough membranes that may lead to separation of the placenta .
5. Uterine contractions must be present . If the fetus is extracted while the uterus is inert , severe postpartum hemorrhage will occur .
6. The bladder and rectum must be empty .
7. Proper surgical anesthesia is necessary and strict asepsis should be observed .
8. The outlet of the bony pelvis must be ample .

Contraindications :

1. Non engaged head .
2. incomplete definition of the cervix .
3. brow and direct mento-posterior presentations .
4. Hydrocephalus .
5. Absence of uterine contractions .
6. Severe oulter contraction .

Failed Forceps :

- Definition : Failure to deliver the head by forceps extraction . It must not be confused with the term trial forceps which is a tentative adempt at forceps extraction .
- Causes : It is usually the result of an error in judgment . One or more of the following conditions was unrecognized by the attendant :

1. Malpositions of the head , particularly an unrecognized persistent occipito-posterior position or brow presentation .
2. Incomplete dilatation of the cervix .
3. Disproportion .
4. Contraction ring above the head .

- **Management** : The immediate management start with careful examination of the patient under anesthesia to determine the cause , the degree of trauma to the birth tract , the patient's general condition , and the condition of the fetus . Subsequent management will depend on the findings . If disproportion is discovered , cesarean section is performed if the fetus is alive and craniotomy if dead . If the cause is an incomplete cervical dilatation a decision has to toe made between watchful waiting for full dilatation or cesarean section . Following delivery the entire birth tract must be re-examined .
- Prognosis : Failed forceps is associated with a high maternal and fetal morbidity and mortality , particularly if the unskilled attendant resort to brute force in repeated attempts at forceps extraction

The Vacuum extractor (Ventouse)

Definition :

An instrument for head fetal extraction by vacuum .

Description of the Instrument :

1. The cup : 20 mm deep , varying in diameter (40 , 50 and 60 mm) .
2. The vacuum bottle : Which is fitted with graduated to 1 kg/cm2 .
3. The pamp : Both manual or electric types are available .

Indications :

1. The main indication is to extract .
    a. Rotated or maltreated head when spontaneous delivery is delayed .
2. To accelerate cervical dilatation in cases of prolonged first stage .

Technique of Application :

1. Vaginal examination assessment .
2. The perineum is stretched back wards and the largest cup which can be introduced is then applied to the lowest aspect of the vertex with the direction of the knob pointing towards the occiput .
3. A vacuum pressure up to 0.6 – 0.8 kg/cm2 is gradually induced over ten to fifteen minutes (to form the chignon) .
4. The traction must be in the axis of the pelvis and at right angle to the plane of the rim of the cup .
5. Traction should be intermittent and coinciding with the uterine contractions . When prolonged traction is needed , it is advisable to release the vacuum every now and then to allow a free blood supply to the area thus avoiding the risk of necrosis of the scalp .

Advantages :

1. The instrument does not extend deeply into the maternal passages .
2. Id does not compress the head .
3. It does not stretch the valuable pelvic space .
4. It can be used to deliver a high head if there is no disproportion .
5. The incidence of maternal lacerations is less than that found with forceps .
6. It can be used without anesthesia , so it is useful for cardiac and pulmonary patients .
7. Can be used late in 1st stage .

Disadvantages :

1. It is generally time consuming (not suitable for immediate fetal delivery) .
2. It is still traumatizing to the fetal head .

Contraindications :

1. Breech presentation for fear of inducing severe trauma to the fetal genitalia .
2. Face presentation .
3. Aftercomitic head .
4. Non connected transverse lie .
5. Cephaio pejvio disproption .
6. Preterm babies for fear of intracranial injury .
7. Marked total distress .
8. Dead fetal .

Complications :

1. Vaginal or cervical damage when include .
2. The artificial caput disappears after a few hours .
3. Small ulcers and scalp bruises at the cup site (usually heal promptly) .
4. Rarely a cephalhematoma may result .
5. Prolonged application mey lead to intracererbral hemorrhage .