بسم الله الرحمن الرحيم

Operative vaginal delivery

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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 : 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) .

Advantages

Relatives merit of median and mediolateral episiotomy

Median

- The muscles are not cut.
- Blood loss is least.
- Repair is easy
- Post operative comfort is maximum
- Healing is superior
- Wound disruption is rare
- Dyspareunia is rare

Medio-lateral

- Relatively safety from rectal involvement from extension.
- If necessary, the incision can be extennded

Disadvantages

Relatives demerits of median and mediolateral episiotomy

Median	Medio-lateral
Extension, if occurs, may involve the rectum.	• Apposition of the tissues is not so good
	• Blood loss is little more
Not suitable for manipulative delivery or in malpresentation	• Post operative discomfort is more.
	• Relative increased incidence of wound disruption
	• Dyspareunia is comparatively more

Technique:

Timing:

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 .

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

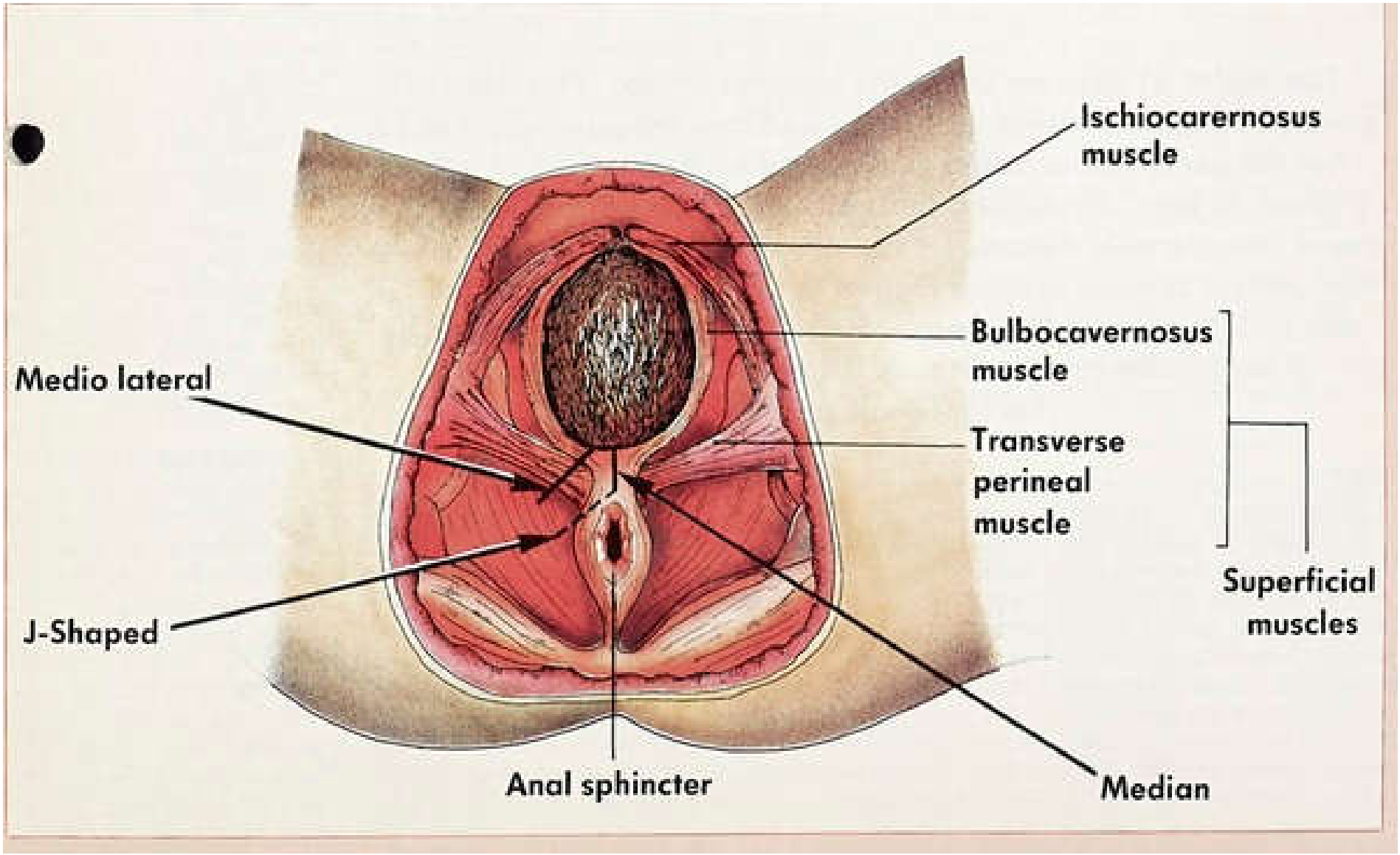
Episiotomy is done with a long bladed curved scissors (curved on the flat) . It begins at the margin of the perineum and extends either laterally (in mediolateral type) through the perineum to one side of the anal canal or vertically towards the anus (in median episiotomy) . Small episiotomies are useless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

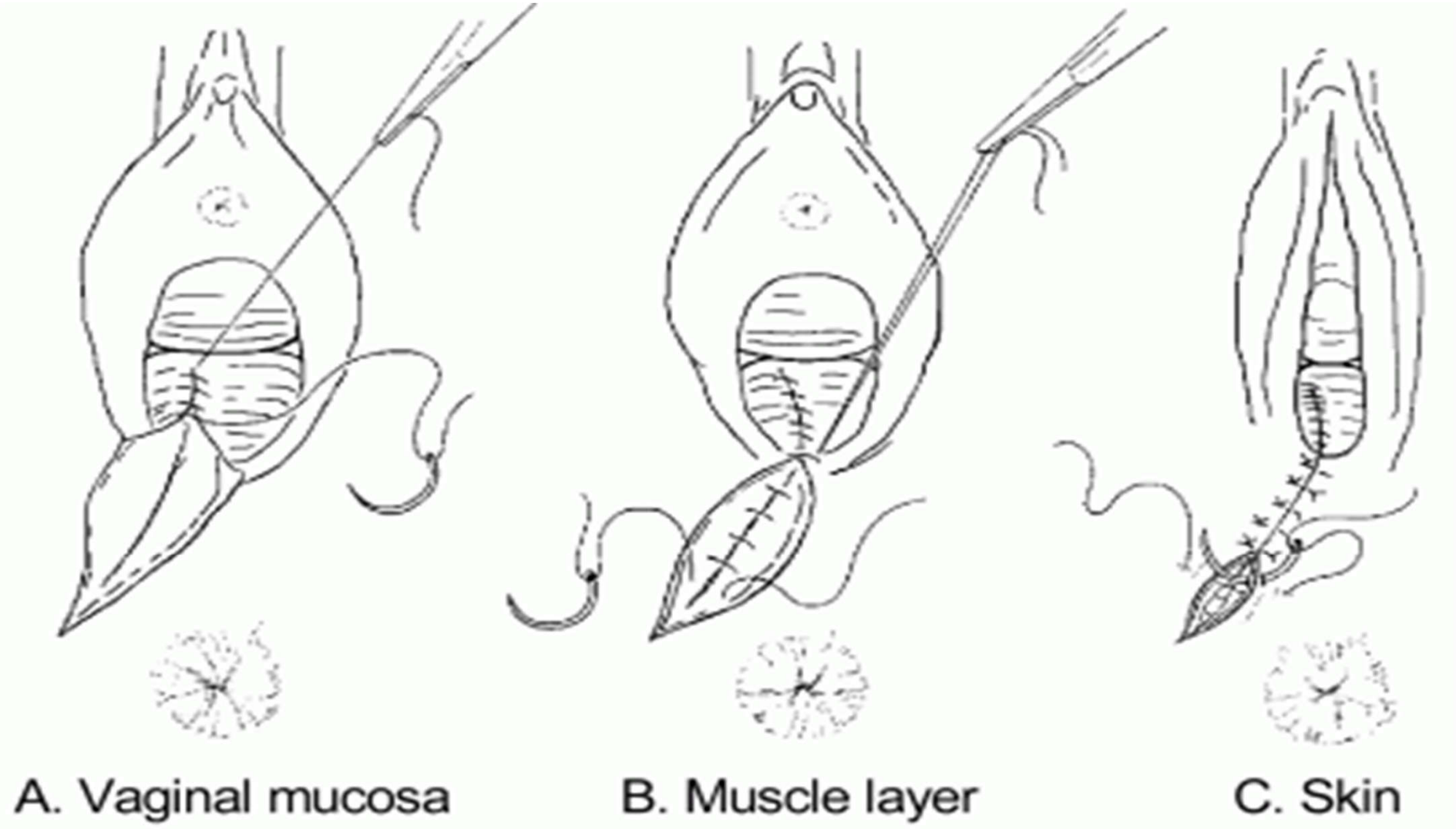
After-care :

- 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 .
- Prophylactic antibiotics are usually given systemically for 2 – 3 days
- The wound should be kept clean by vulval washing and antiseptics and maintained dry .
- Silk sutures are removed after 6 days .
- If the anal canal is opened , proceed like after repair of old complete perineal tear .

Structure cut are:

- Posterior vaginal wall
- Superior and deep transverse perineal muscles, bulbospongiosus and part of levator ani.
- Fascia covering those muscles
- Transverse perineal branches of pudendal vessels and nerves
- Subcutaneous tissue and skin


Ischiocarernosus muscle
Bulbocavernosus muscle
Transverse perineal muscle
Superficial muscles
Medio lateral
J-Shaped
Anal sphincter
Median



Episiotomy repair

- **Complications :**

1. Bleeding and shock (1ry , reactionary or 2ry Hge) .
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

Components

- The Blade proper
- The shank
- The lock
- The handles

Types of Modern Forceps :

I- The long forceps

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

III- Short curved forceps (Wrigley)

IV- Kielland's forceps

VI- Piper forceps

Actions

Traction

Rotation : When the obstetric forceps is used for long rotation (occipito- posterior positions or deep transverse arrest) .

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

ACOG classification (2002)

Type	Definition
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 :

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

- Malpositions of the head , particularly an unrecognized persistent occipito-posterior position or brow presentation .
- Incomplete dilatation of the cervix .
- Disproportion .
- 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 (Ventose)

Definition :

An instrument for head fetal extraction by vacuum .

- **Description of the Instrument :**
  - The cup : 20 mm deep , varying in diameter (40 , 50 and 60 mm) .
  - The vacuum bottle : Which is fitted with graduated to 1 kg/cm2 .
  - 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 .

Technique of Application :

- Vaginal examination assessment .
- 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 .
- A vacuum pressure up to 0.6 – 0.8 kg/cm2 is gradually induced over ten to fifteen minutes (to form the chignon) .
- The traction must be in the axis of the pelvis and at right angle to the plane of the rim of the cup .
- 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 :**

The instrument does not extend deeply into the maternal passages .

It does not compress the head .

It does not stretch the valuable pelvic space .

It can be used to deliver a high head if there is no disproportion .

The incidence of maternal lacerations is less than that found with forceps .

It can be used without anesthesia , so it is useful for cardiac and pulmonary patients .

Can be used late in 1st stage .

✓ **Disadvantages :**

It is generally time consuming (not suitable for immediate fetal delivery) .

It is still traumatizing to the fetal head .

- **Contraindications :**

✓ Breech presentation for fear of inducing severe trauma to the fetal genitalia .

✓ Face presentation .

✓ After comitig head .

✓ Cephalo-pelvic disprorption .

✓ Preterm babies for fear of intracranial injury .

✓ Marked total distress .

✓ Dead fetal .

Complications :

1. Vaginal or cervical damage when included .
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 may lead to intra-cerebral hemorrhage .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