

# Operative vaginal delivery

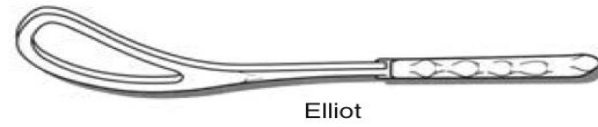
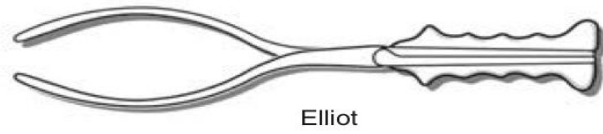
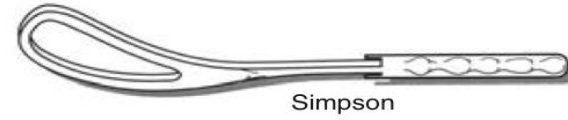
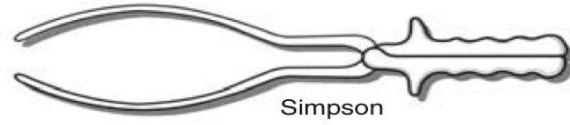
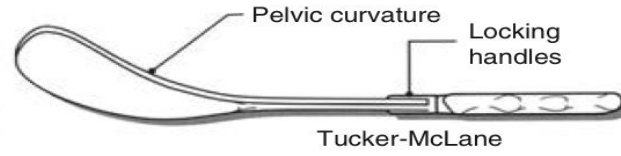
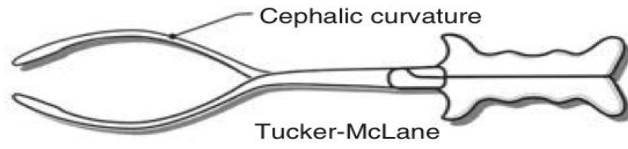
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**Consultant obstetrician and gynecologist**

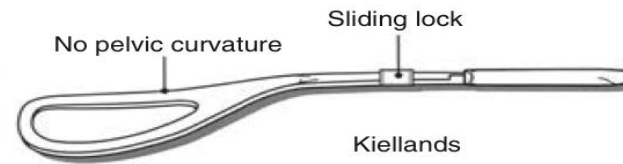
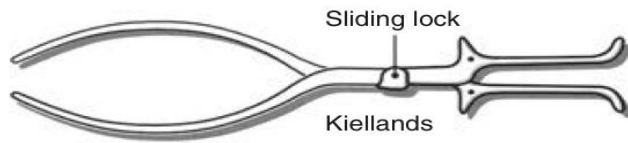
**Member of the Royal College Of Obstetricians  
and Gynecologists (MRCOG)**

**Fellow Of American College Of Surgeons (FACS)**

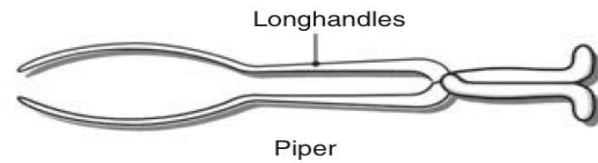
① Classical forceps



② Rotational forceps



③ Forceps for delivery of aftercoming head of the breech



## Types of Forceps



**Wrigleys**

(Low cavity outlet forceps )



**Simpson's**

(Mid cavity non rotational forceps )



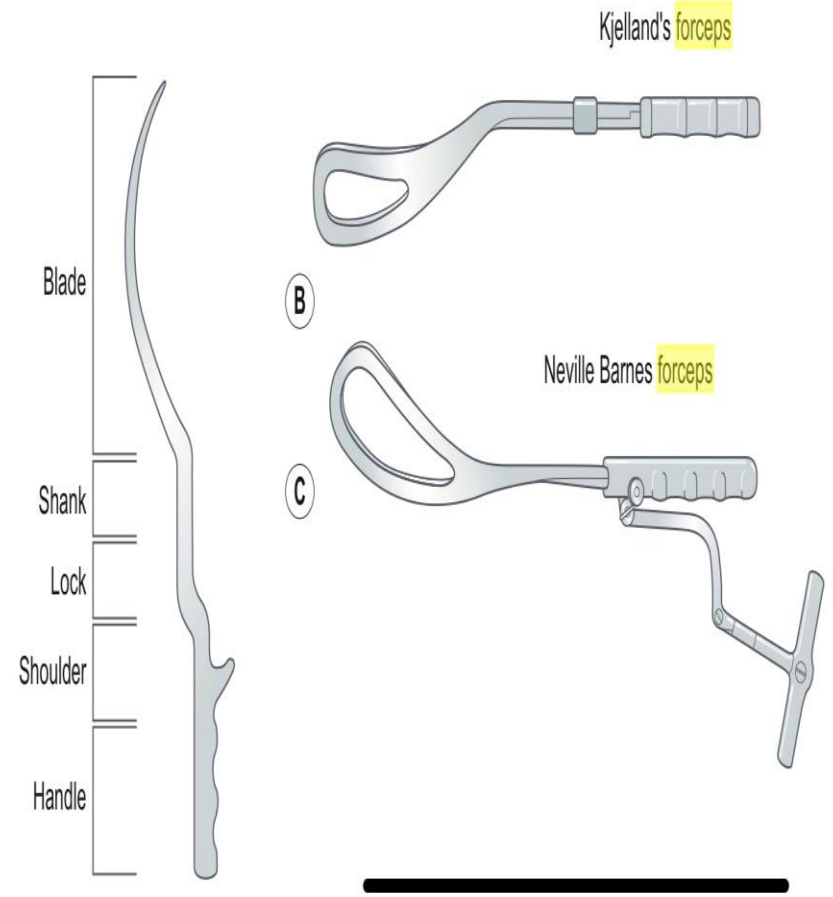
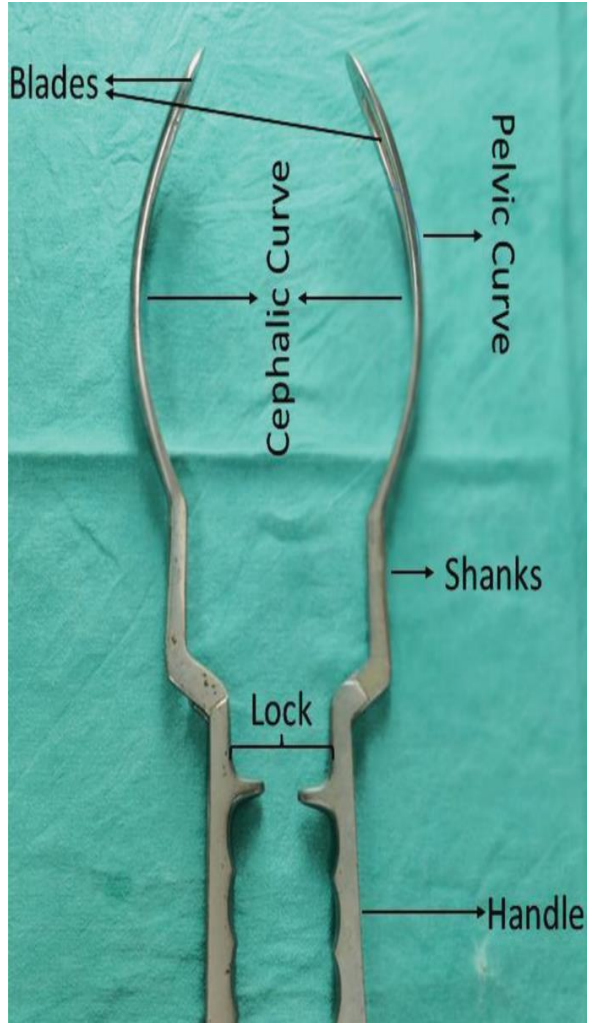
**Neville Barnes**

(Mid cavity non rotational forceps )



**Keillands**

(Mid cavity **rotational** forceps )

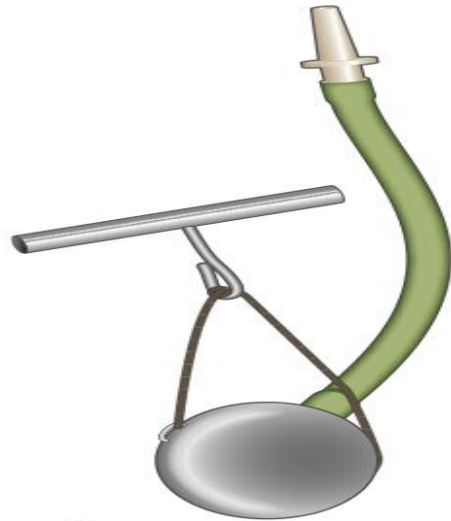




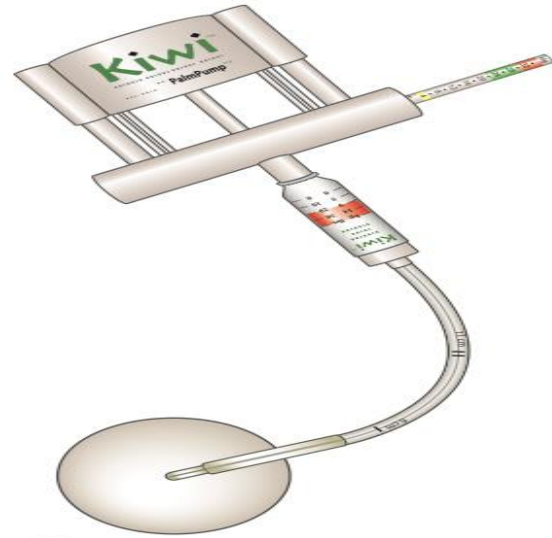
A



B



C



D

## Types of Ventouse



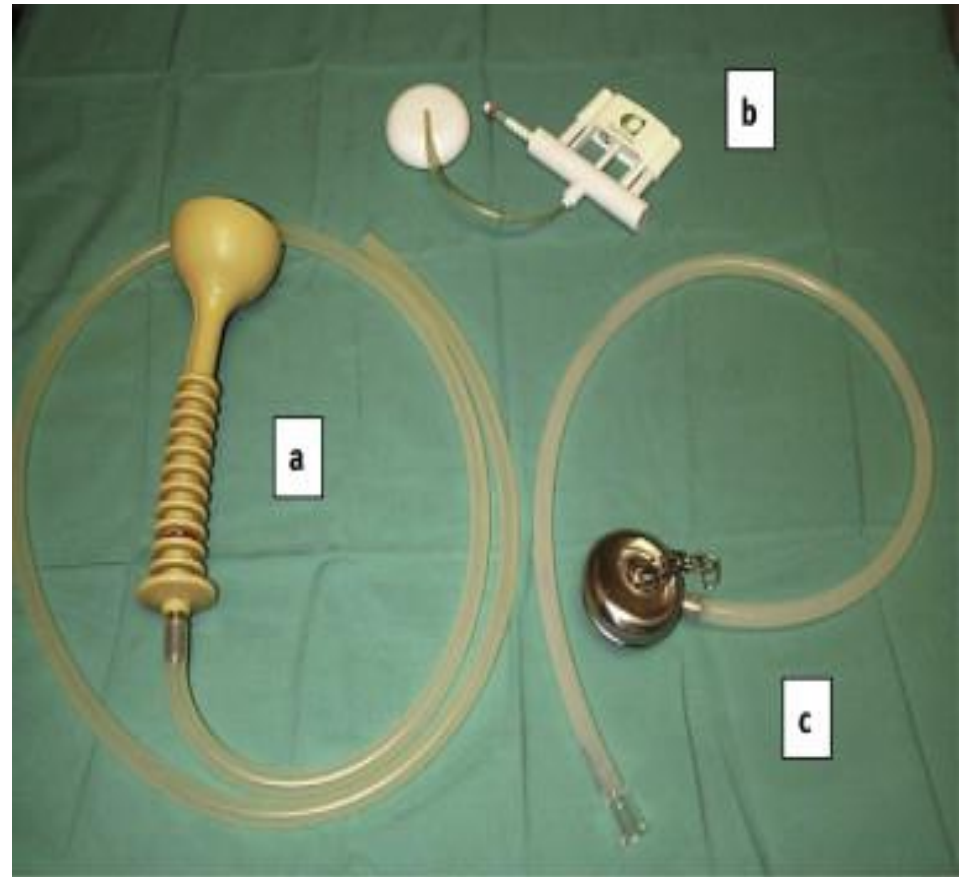
Malmstrom cup

Silastic cups (soft)

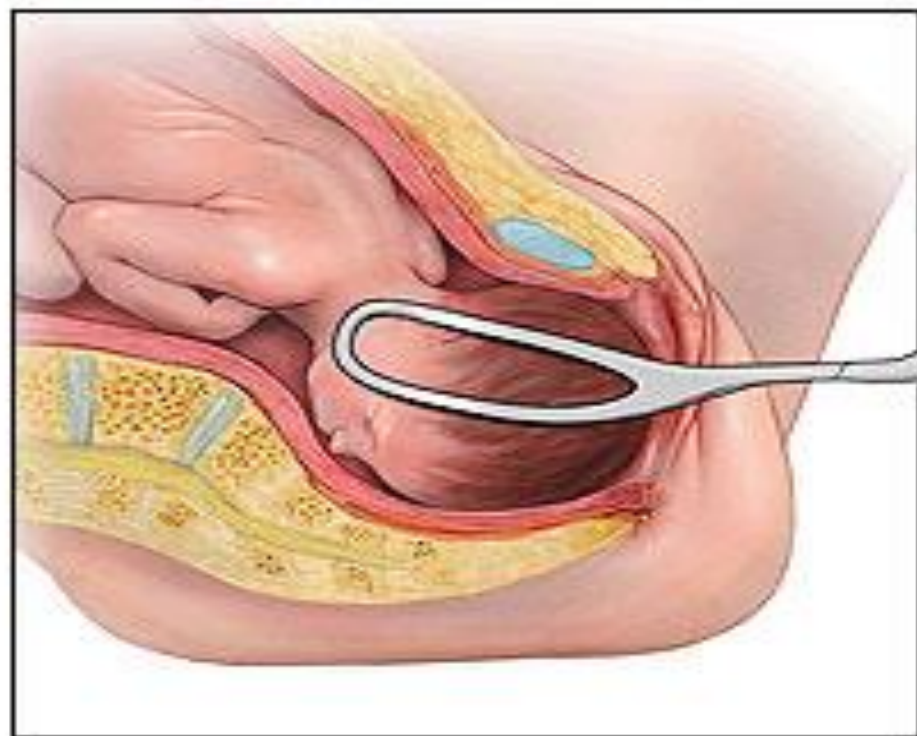
OP Kiwi cup

Standard Kiwi cup

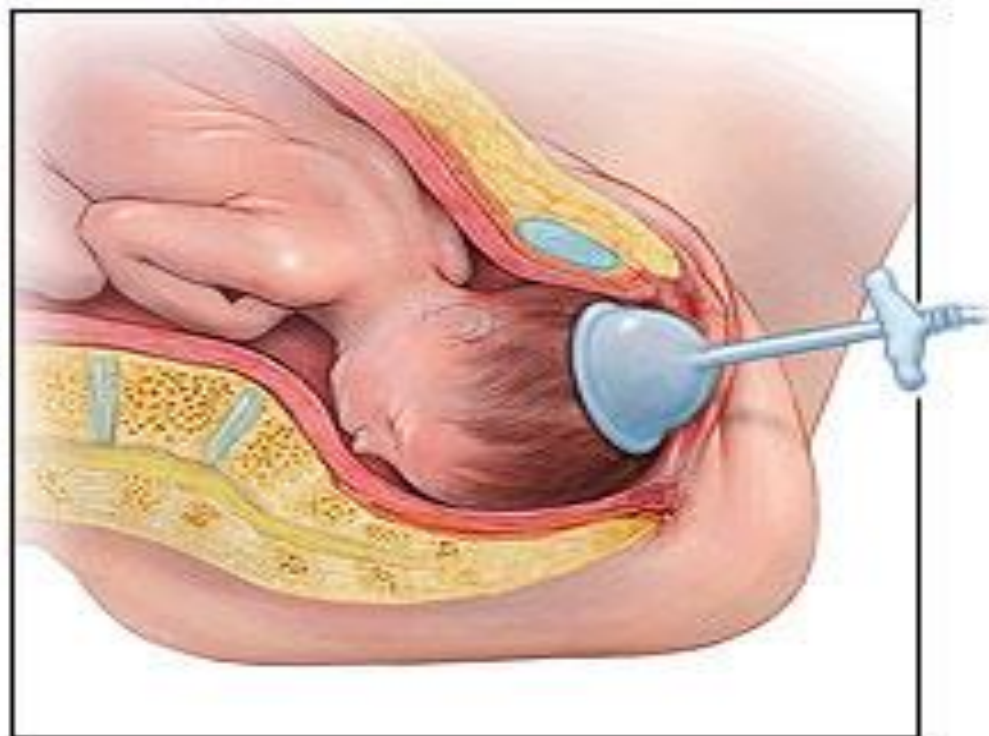
↳ Higher failure but Less neonatal scalp trauma



**Forceps**



**Vacuum extraction**









# Indications

1. Expedited delivery where **fetal compromise** is suspected in second stage of labour (pathological CTG ), abnormal fetal blood sample.
2. **Maternal fatigue/exhaustion.**
3. **Safer delivery** in cases where **maternal pushing is not advisable** –such as cerebral aneurysm, proliferative retinopathy or cardiac disease class III or IV, myasthenia gravis.
4. Inadequate progress in second stage(**delayed second stage** )
5. Forceps can be used when indicated for the after coming head in breach delivering.

**Table 1.** Classification for assisted vaginal birth<sup>28</sup>

Outlet		Fetal scalp visible without separating the labia Fetal skull has reached the perineum Rotation does not exceed 45°
Low		Fetal skull is at station + 2 cm, but not on the perineum Two subdivisions: 1. Non-rotational $\leq 45^\circ$ 2. Rotational $> 45^\circ$
Mid	 	Fetal head is no more than one-fifth palpable per abdomen Leading point of the skull is at station 0 or + 1 cm  Two subdivisions: 1. Non-rotational $\leq 45^\circ$ 2. Rotational $> 45^\circ$

# Risks or complications

- Short-term and long-term morbidity of pelvic floor injury.
- Neonatal intracranial and subgaleal haemorrhage.
- Neurodevelopmental problems for children.
- CS in the second stage of labour is an alternative approach but also carries significant morbidity and implications for future births.

# Serious Risks

- **Maternal:**

1. Third- and fourth-degree perineal tear: > 1–4/100 with vacuum-assisted delivery. > 8–12/100 with forceps delivery.
2. Extensive or significant vaginal/vulval tear: > 1 in 10 with vacuum. > 1 in 5 with forceps.

- **Fetal:**

1. Subgaleal haematoma 3–6/1000.
2. Intracranial haemorrhage 5–15/10000.
3. Facial nerve palsy (rare).

# Frequent risks (maternal)

- PPH 1–4 in 10
- Vaginal tear/abrasion (very common).
- Anal sphincter dysfunction/voiding dysfunction.

# Frequent risks (fetal)

- **Forceps marks** on face (very common).
- **Chignon/cup** marking on the scalp (practically all cases of vacuum-assisted delivery) (very common).
- **Cephalhaematoma** 1–12/100.
- Facial or scalp **lacerations** 1 in 10.
- Neonatal **jaundice** /hyperbilirubinaemia 5–15/100.
- **Retinal haemorrhage** 17–38/100.

# Innocuous scalp markings

Chignon/  
Caput

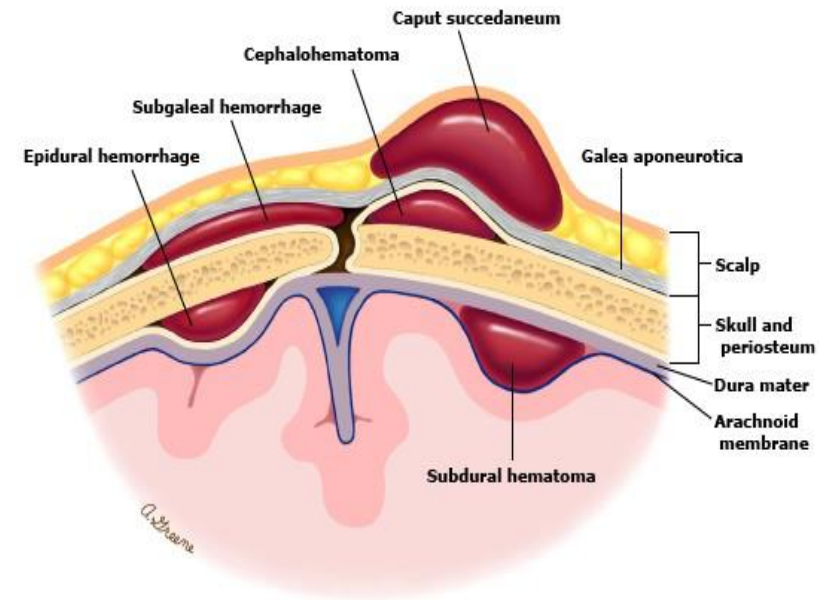


Residual ring/  
bruise 18 hours  
later



Fetal scalp findings that  
are not *clinically*  
significant

Small  
laceration



# Strategies that can reduce (OVD)



- **Continuous support** during labour.
- **Use of upright or lateral positions in the second stage** of labour compared with supine or lithotomy positions.
- Avoiding **epidural analgesia** – epidural analgesia compared with non-epidural methods is associated with an increased incidence of OVD but provides better pain relief than non-epidural analgesia.
- **This is less likely with newer analgesic techniques.**
- Administering epidural analgesia in the latent phase of labour compared to the active phase of labour **does not increase the risk** of assisted vaginal birth
- **Delayed pushing for 1 to 2 hours** or until woman has a strong urge to push, in primiparous women with an epidural **can reduce the need for rotational and mid cavity deliveries.**



# Contraindications

- Operators should be aware that there is a **higher risk of subgaleal haemorrhage and scalp trauma with vacuum** extraction compared with forceps at **preterm gestational ages**.
- **Vacuum** birth should be **avoided below 32** weeks of gestation and should be used with **caution between 32+0 and 36+0** weeks of gestation.
- because of the susceptibility of the preterm infant to cephalohaematoma, intracranial haemorrhage, subgaleal haemorrhage, and neonatal jaundice.
- **Do not use vacuum** extractors with a **face , breech** presentation.
- **Suspected fetal bleeding disorders or a predisposition to fracture** are **relative contraindications** to assisted vaginal birth.

# Prerequisites( Abdominal and vaginal examination)

- Head is  $\leq 1/5$ th palpable per abdomen.(engagements)
- **Vertex** presentation.
- **Cervix is fully dilated** and the **membranes ruptured**.
- **Exact position of the head** can be determined.
- No signs of CPD so assessment of caput and moulding.  
(Irreducible moulding may **indicate cephalo–pelvic disproportion**.)
- Pelvis is adequate.

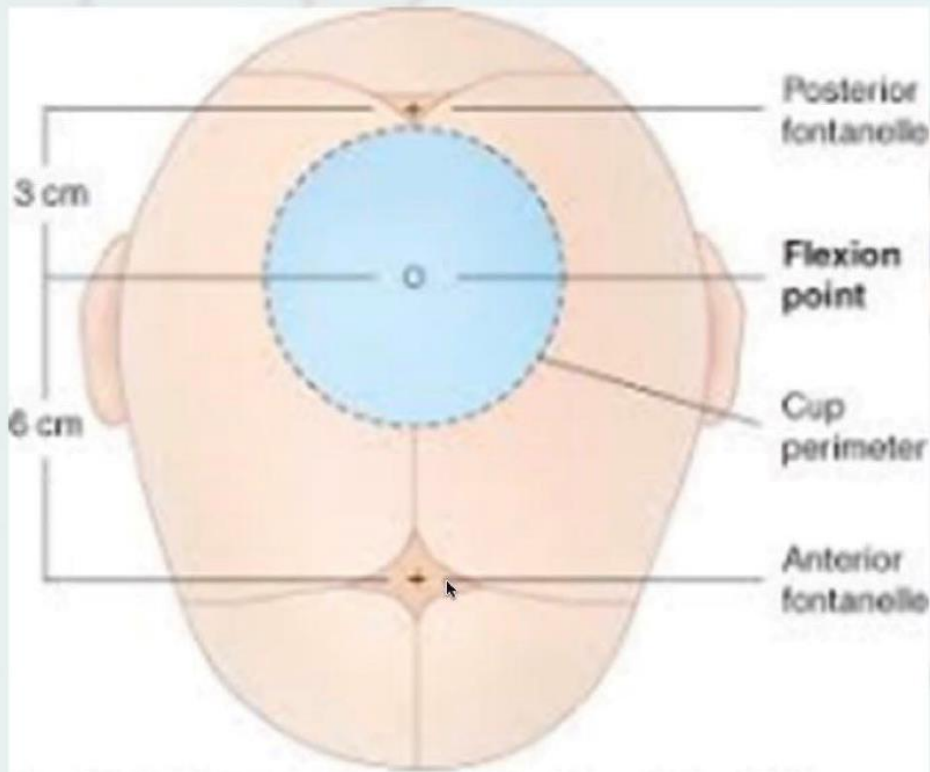
# Prerequisites (Preparation of mother)

- Clear explanation and informed consent.
- Appropriate analgesia is in place for mid-cavity rotational deliveries. This will usually be a regional block. A pudendal block may be appropriate, particularly in urgent delivery.
- Empty maternal bladder.
- Remove in-dwelling catheter.

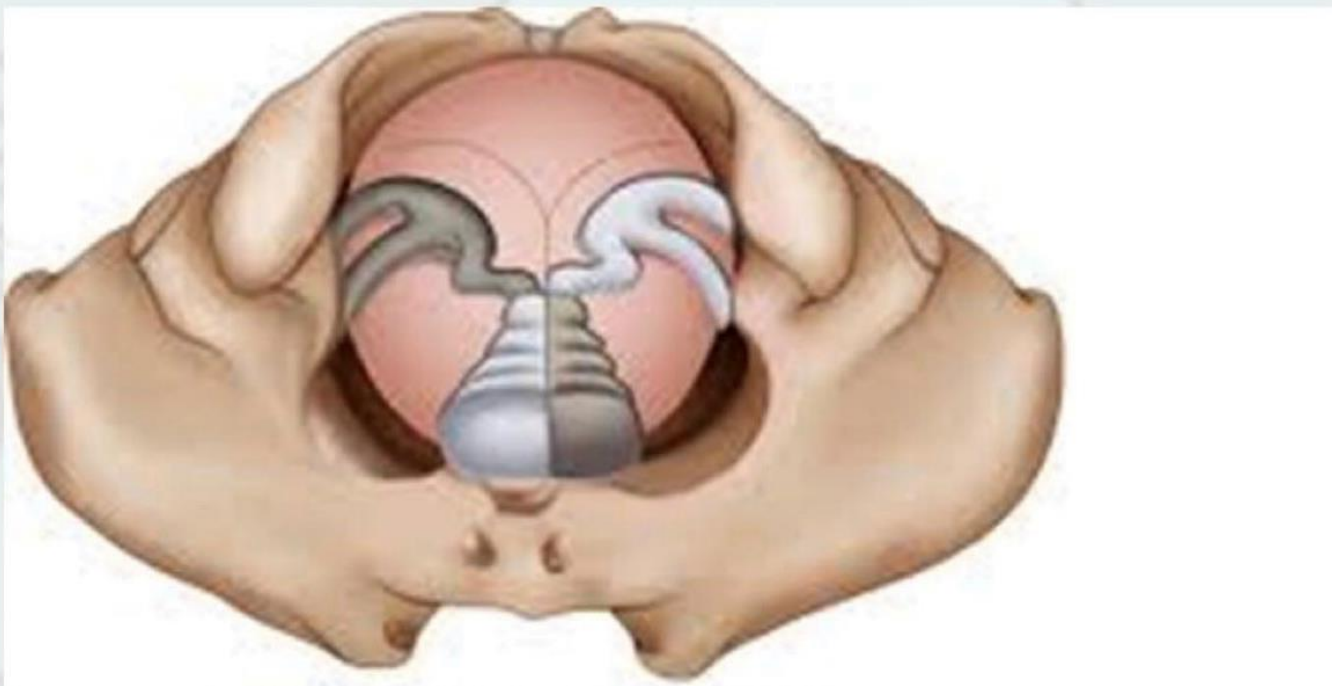
# Prerequisites (Preparation of staff)

- Operator must have the knowledge, experience, and skill necessary.
- Adequate facilities (appropriate equipment, bed, lighting).
- Back-up plan in place in case of failure to deliver.
- When conducting mid-cavity deliveries, theatre staff should be available to allow a CS to be performed without delay (< 30 minutes).
- Anticipation of complications that may arise (e.g., shoulder dystocia, PPH).
- Personnel present that are trained in neonatal resuscitation.

- Aseptic techniques.
- Lithotomy position .
- Gentle traction in between contractions.
- Stop the procedure if 2 pop offs or 3 pulls without progress or imminent delivery.



Source: F. Gary Cunningham, Kenneth J. Leveno, Steven L. Boren, Collette Y. Spang, Jill S. Dalda, Barbara L. Hoffman, Dale W. Cawie, James S. Sheffield: Williams Obstetrics, 25th Edition  
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New position: OA. Forceps upside down.

Source: G. D. Posner, Jessica DY, A. Black, G. D. Jones: Human Labor & Birth, 6th Edition  
[www.obgyn.mhmedical.com](http://www.obgyn.mhmedical.com)  
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SMART MIRCOS

## Flexion Point

## Position For Safety

Posterior fontanel : midway between the shanks and one centimeter above the plane of the shanks.

# When to abandon OVD

- Abandon **if there is no evidence of progressive descent** with moderate traction during each contraction or **where delivery is not imminent following 3 contractions of a correctly applied instrument.**
- There is **increased risk of neonatal trauma** and admission to the SCBU **following excessive pulls (> 3) and sequential use of instruments.**
- The **risk is further increased** where delivery is completed by CS following a protracted attempt at OVD.

# Higher rates of failure

- Higher rates of failure are associated with:
  1. Maternal BMI > 30.
  2. Estimated fetal weight > 4000 g or clinically big baby.
  3. Occipito-posterior position.
  4. Mid-cavity delivery or when 1/5th of the head is palpable per abdomen (at mid-cavity the biparietal diameter is still above the level of the ischial spines).



# Aftercare

- **Analgesia** – provide regular paracetamol and diclofenac if no contraindications.
- **Antibiotics** is recommended.
- **Thromboprophylaxis** – reassess for risk factors for VTE and prescribe appropriate thromboprophylaxis. (Mid-cavity delivery, prolonged labour, and immobility are risk factors for VTE).
- **Care of the bladder** – monitor the timing and volume of the first void urine, monitor for retention
- **Offer physiotherapy** to prevent urinary incontinence.
- **Reduce psychological morbidity** for the mother – OVD can be associated with fear of subsequent childbirth and in a severe form may manifest as a post-traumatic stress-type syndrome termed **tocophobia**.

# Aftercare .....

- Encourage women to aim for a spontaneous vaginal delivery in a subsequent pregnancy as there is a high probability of success.
- The likelihood of achieving a spontaneous vaginal delivery is approximately 80% even for women who have required more complex OVD in theatre.
- Discuss at the earliest opportunity as there is evidence to suggest that women decide on the future mode of delivery soon after delivery.

*Thank*

*you*

