

Obstetrics & Gynaecology

World of Revision

Marrow

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GYNAECOLOGY REVISION : PART 1

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Anatomy of Uterus

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Normal position of uterus :

- Ante**flexed** : B/w uterus & cervix (120°).
- Ante**verted** : B/w **vagina** & cervix (90°).

Ligament which helps to keep uterus in anteverted position :
Round ligament (RL).

Ligament which prevents retroversion :
uterosacral ligament > RL.

Ligaments which support uterus :

1. Cardinal ligament (Transverse cervical/mackenrodt's ligament).
2. uterosacral ligament.
3. Pubocervical ligament.

Ligament which does not support uterus :
Broad ligament.

muscle which mainly supports uterus :
Levator ani muscle :
Pubococcygeus, Iliococcygeus.

At fundus of the uterus, three structures are present :

- R : **R**ound ligament.
- T : Fallopi**a**n **t**ube.
- O : **O**varian ligament (OL).

Ligament which connects :

- Ovary to uterus : Ovarian ligament.
- Ovary to pelvic side wall : Infundibulopelvic ligament/Suspensory ligament of ovary (Contains ovarian vessels).
- Blood supply of uterus :
 - uterine artery (Branch of anterior division of internal iliac artery).
 - utero-ovarian anastomosis.
- Nerve supply : T₁₀ - L₁.

Uterus

Cervix to Corpus Ratio :

At birth → 1 : 1.
Before puberty → 2 : 1.
At puberty → 1 : 2.
At reproductive age → 1 : 3.
After menopause → 1 : 1 (Both atrophy).

uterus develops from : **mullerian duct**.
Round ligament develops from : Distal end of gubernaculum.
Ovarian ligament develops from : Proximal end of gubernaculum.

To visualize uterus from inside :

Hysteroscopy :

Distension media → Gas : Only diagnostic.
→ Liquid : Diagnosis & Rx.

Unipolar cautery is used with :

Electrolyte deficient media :

- **Glycine (m/c)**.
- mannitol.
- Sorbitol.

With electrolyte deficient media, procedure is stopped at : 1000 mL fluid deficit.

With electrolyte rich media, procedure is stopped at : 2500 mL fluid deficit.

Electrolyte rich media :

- NS.
 - Ringer lactate.
- } **m/c used**
(Best media)

Hysteroscopy indications :

- Ashermann syndrome.
- Septate uterus.
- Endometrial polypectomy.
- Type 0 & I (Submucous) fibroid.

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Uterine Vasculature :

Branches of uterine artery :

- Uterine artery.
- Arcuate artery.
- Radial artery — { Basal artery.
Spiral artery.

Stepwise devascularization in PPH mx :

Ligation of :

1. Uterine artery : U/L → B/L.
2. Utero-ovarian anastomosis.
3. Anterior division of internal

iliac artery



Trisulnikov's triple ligation :

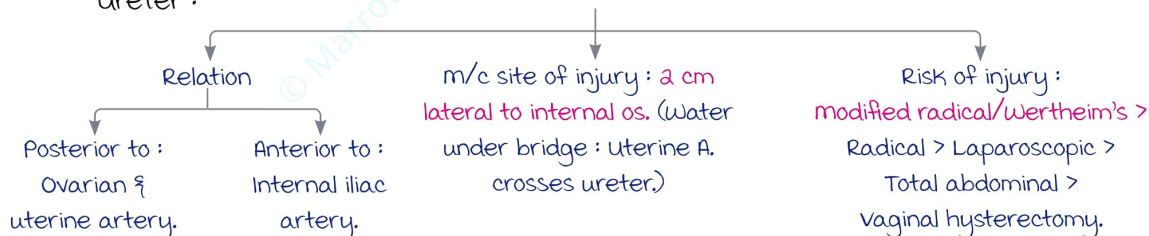
3rd is Sampson's A./Artery of RL.

Note :

Living ligature : middle layer of myometrium.

Uterine Relations :

Ureter :

Retroverted Uterus :

Retroverted/Retroflexed uterus :

- 20%.
- manually corrected.

Fixed retroverted uterus :

- Endometriosis > PID/genital TB.
- Cannot be corrected manually.

Clamping during Hysterectomies :

Abdominal hysterectomy :

- 1st : RTO pedicle.
- 2nd : Cardinal ligament.
- 3rd : uterine artery.
- 4th : uterosacral ligament.

vaginal hysterectomy :
Order reversed.

Total abdominal hysterectomy (TAH) :

Remove uterus + cervix

Without BSO :
Clamp at ovarian
ligament.With BSO : clamp
at infundibulopelvic
ligament.

Anatomy of Cervix

00:17:56

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Cervix has Two Parts :

Endocervix :

- Supravaginal.
- Red.

Exocervix :

- Portio vaginalis.
- Pink.

Lining of :

- Endocervix : Columnar epithelium.
- Exocervix : Stratified squamous epithelium.

Junction of the endocervix & exocervix :

- Transformation zone (TZ)/ Squamocolumnar junction.
- Level : External os.
- m/c site for pre-invasive and invasive lesions of cervix.

Normal length of cervix :

- In non-pregnant female : 2.5 cm.
- In pregnancy : 4 cm.
- In pregnancy, if length of cervix is **< 2.5 cm** :
 - K/a short cervix.
 - Risk of TA abortion and preterm labour.
- ACOG recommends :

- h/o TA abortion - h/o preterm labour	} TVS : Cx length b/w 16 - 24 wog
---	---

Cervix

- TZ moves out :
 - Puberty.
 - OCP.
 - Pregnancy.
- Ectropion :
 - When endocervix is seen moving out of exocervix.
 - Physiological in pregnancy.
 - Do not take biopsy.
 - Can cause post coital bleeding.



Ectropion

- Blood supply of cervix : Descending cervical artery (Branch of uterine artery).
- Nerve supply of cervix : S₂ - S₄.
- Lymphatic drainage of cervix :
 - H : Hypogastric/Internal iliac LN.
 - O : Obturator LN.
 - P : Paracervical LN.
 - E : External iliac LN.
- Cervix does not drain into : Superficial inguinal LN.
- Sentinel lymph node : **Paracervical LN.**
- Dührssen's incision :
 - Done in entrapped head in breech.
 - Above/below 3 o'clock & 9 o'clock (Site of artery)

Pain management :

Pain : $\rightarrow$ 1st stage : D/t uterine contraction ($T_{10}-L_1$).
 $\rightarrow$ 2nd stage : Cervical dilation (S_2-S_4).

Analgesia	Procedure	Level / Site
Epidural analgesia	Painless labour	T_{10}
LSCS anaesthesia		T_4
Pudendal block	Instrumental delivery	Ischial spine : Pierce sacrospinous ligament
Paracervical block	Suction & evacuation	Never at 3 o'clock & 9 o'clock

Instruments :

Uterine sound :

- Have calibrations.
- Olive tipped.
- Assess size and position of uterus.



Bladder sound :

No calibrations.

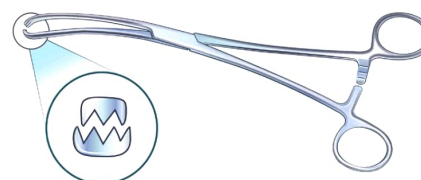


A. Anterior vaginal wall retractor :

Large loop with serrations.

B. Blunt - sharp curette :

Small loop.



Vulsellum forceps :

- To hold lip of cervix (Non pregnant).
- Has ratchet lock.
- Curved blade with gap.
- **Rat like teeth.**

Note :

- Cervix of pregnant woman : **Sponge holding forceps.**
- Allis forceps : No curve.
- Kocher's forceps : No gap.

Anatomy of Vagina

00:29:54

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- Lined by : Stratified non-keratinized squamous epithelium.
- Has inhabitant bacteria : (Lactobacilli) **Döderlein** → Convert glycogen into lactic acid.
- Döderlein bacilli appear at puberty and disappear at menopause.
- Vagina develops from :
 - upper part : müllerian duct.
 - Lower part : urogenital sinus.
- Vagina does not have glands.

pH of vagina :

- At birth : Acidic.
- During childhood : Alkaline (6 - 8).
- At puberty : Alkaline → Acidic.
- In reproductive age : **4 - 4.5**.
- During pregnancy : < 4.
- During menstruation : 6 - 8.
- After menopause : 6 - 8.

Cells of vagina :

- Cells which predominate in estrogen predominance : Superficial cell.
- Cells which predominate in progesterone predominance : Intermediate cells.
- Cells which predominate when no hormone predominance : Parabasal cells.

De Lancey's Levels of Support :

Level 1 :

- **uterosacral & cardinal ligament.**
- Support : upper 1/3rd vagina.
- Defect leads to :
 - Apical prolapse.
 - Vault prolapse.
 - Cervical elongation.
 - **Enterocoele.**

Level 2 :

- Arcus tendinous fascia.
- Support : middle 1/3rd vagina.
- Defect leads to :
 - **Cystocele (m/c)** - **Rectocele.**

Level 3 :

- Perineal body & muscles attached to it.
- Support : Lower 1/3rd vagina.
- Defect leads to :
 - **Urethrocele.**
 - Rectocele.
 - Laxed perineum.

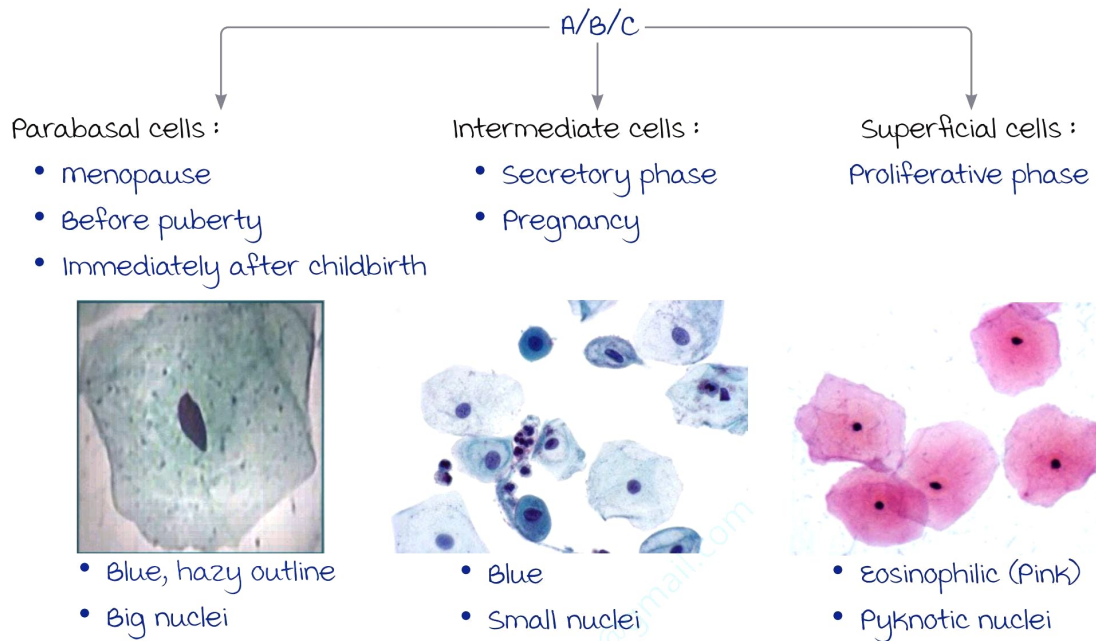
Vagina

management of vaginal Prolapse :

Does not depend on age and parity.

- | | | |
|---|---------------------------|----------------------|
| <ul style="list-style-type: none"> • Cystocele • urethrocele | Ant. colporrhaphy | Pelvic floor repair. |
| <ul style="list-style-type: none"> • Rectocele | | |
| <ul style="list-style-type: none"> • Laxed perineum | Post. colpoperineorrhaphy | |
| <ul style="list-style-type: none"> • Enterocoele <ul style="list-style-type: none"> - m/c : McCall culdoplasty. - Outdated : moschowitz repair, Halban's repair. | | |

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Maturation Index :Vaginal pH :

- Factors responsible for acidic pH :
 - Estrogen : Presence of glycogen (For conversion to lactic acid).
 - Döderlein bacilli.
- Vaginal defense lost : 10 days after birth.
- **> 4.5** : Infections.
 - Bacterial vaginosis.
 - Trichomoniasis.
- Organism tolerating acidic pH : **Candida** (≤ 4.5 pH).