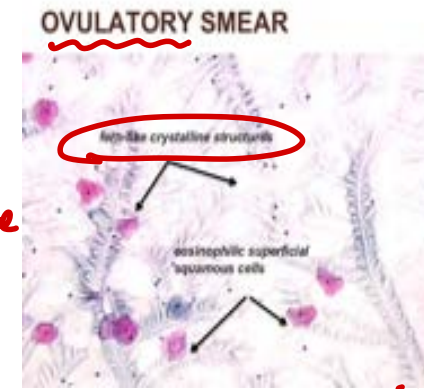
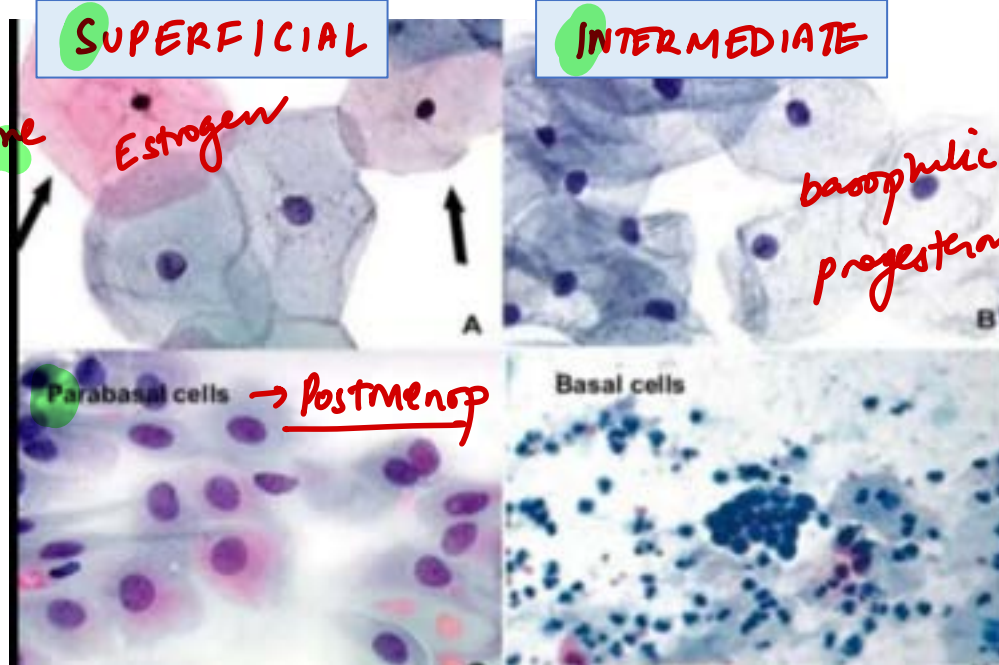
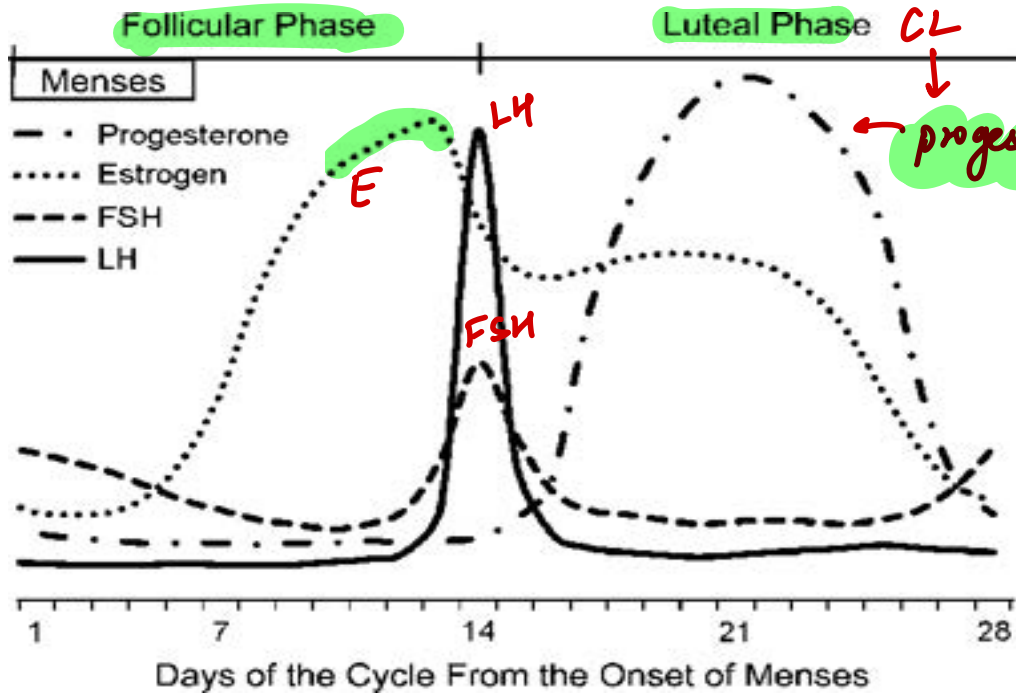


**OBG**

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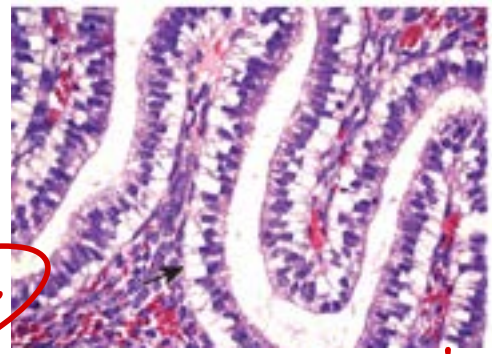
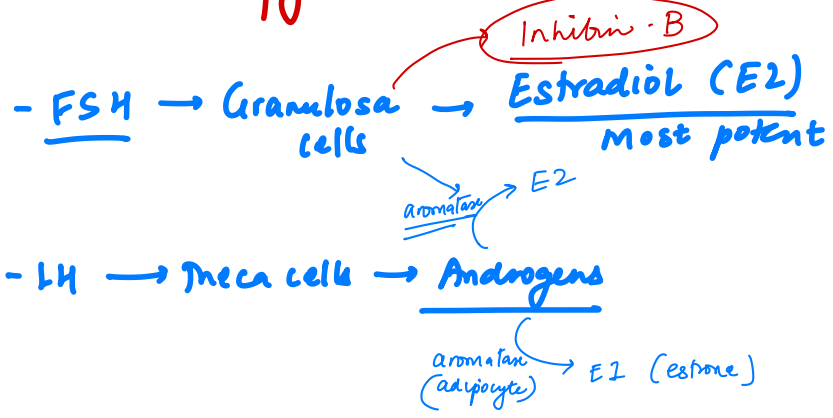
# Menstrual Physiology

vaginal epithelial cells:



Cervical mucus { E: spinbarkeit, p: thick

Estrogen  $\rightarrow$  LH/FSH  
 $> 200 \text{ pg} \times 48 \text{ hr} \rightarrow$  LH surge<sup>2</sup>



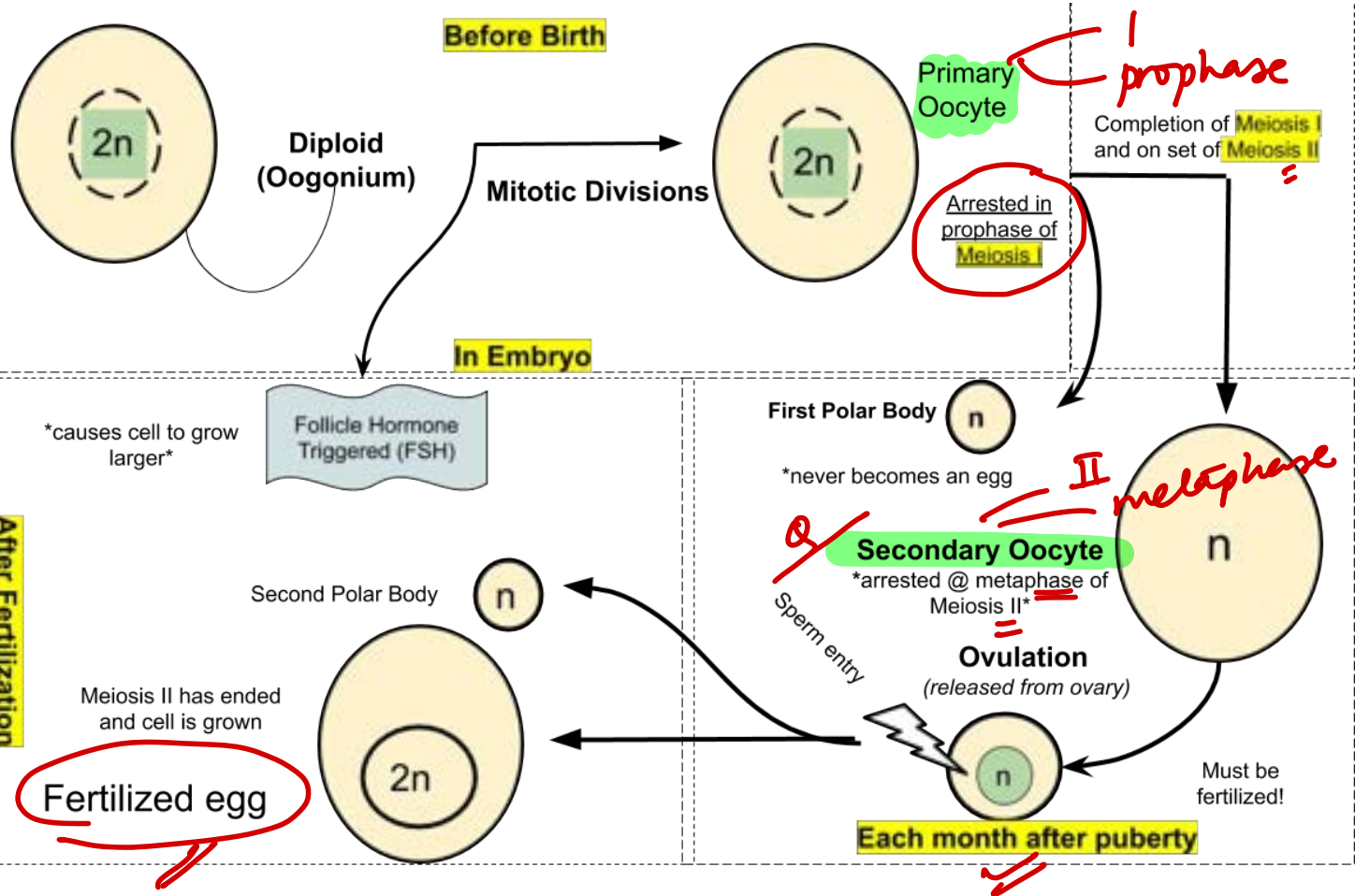
Endometrial

Subnuclear vacuolization  
 orkscrew glands  
 Secretory phase

Maturation index: P : I : S  
 0 : 80 : 20  $\rightarrow$  Luteal phase  
 0 : 20 : 80  $\rightarrow$  Follicular phase  
 90 : 10 : 0  $\rightarrow$  Postmenopausal  
 0 : 10 : 90  $\rightarrow$  Postmeno + Granulosa cell tumor

Follicular phase - tall glands  
 - pseudo stratific<sup>n</sup>  
 - telescoping

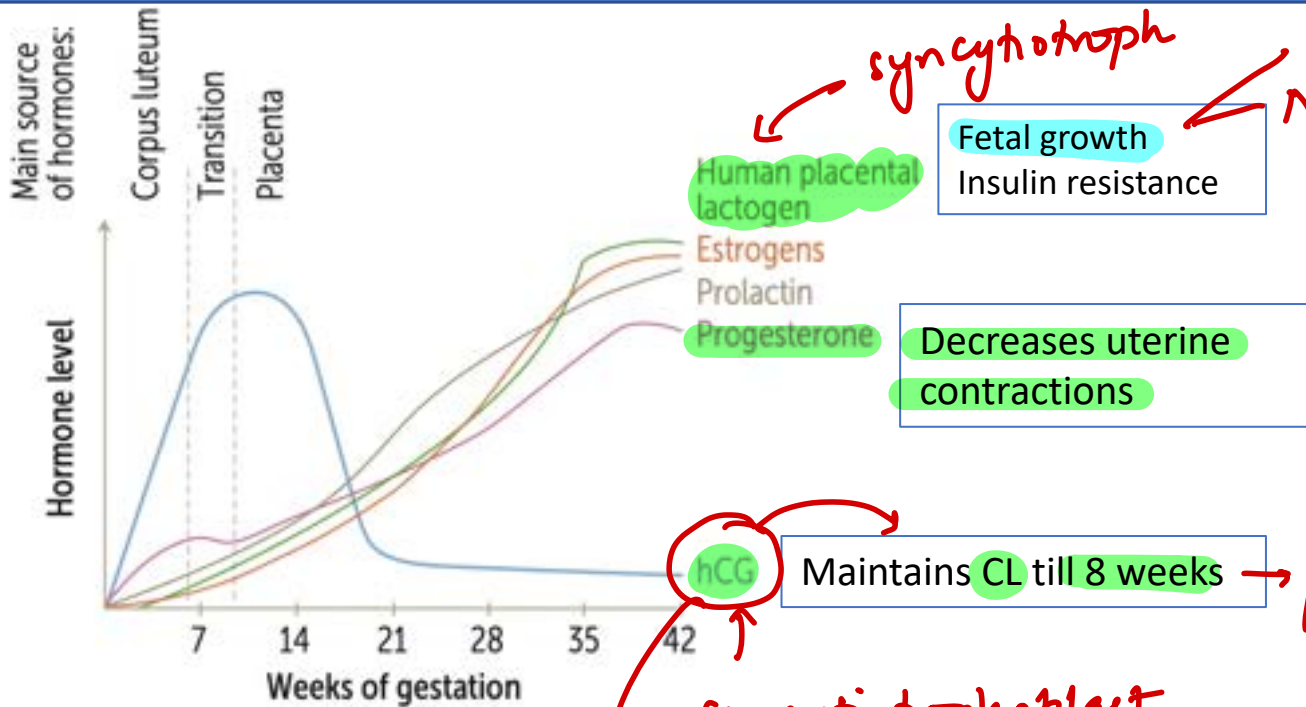
# OVULATION



Acrosome reaction →  
 ZP3 glycoprotein  
 • Ca<sup>2+</sup> influx

Cortical reaction / Zona reaction  
 ↓  
 prevent polyspermy

# Physiology - pregnancy



synctiotroph  
 main: IGF-1  
 No role: GH

Fetal growth  
 Insulin resistance

Decreases uterine contractions

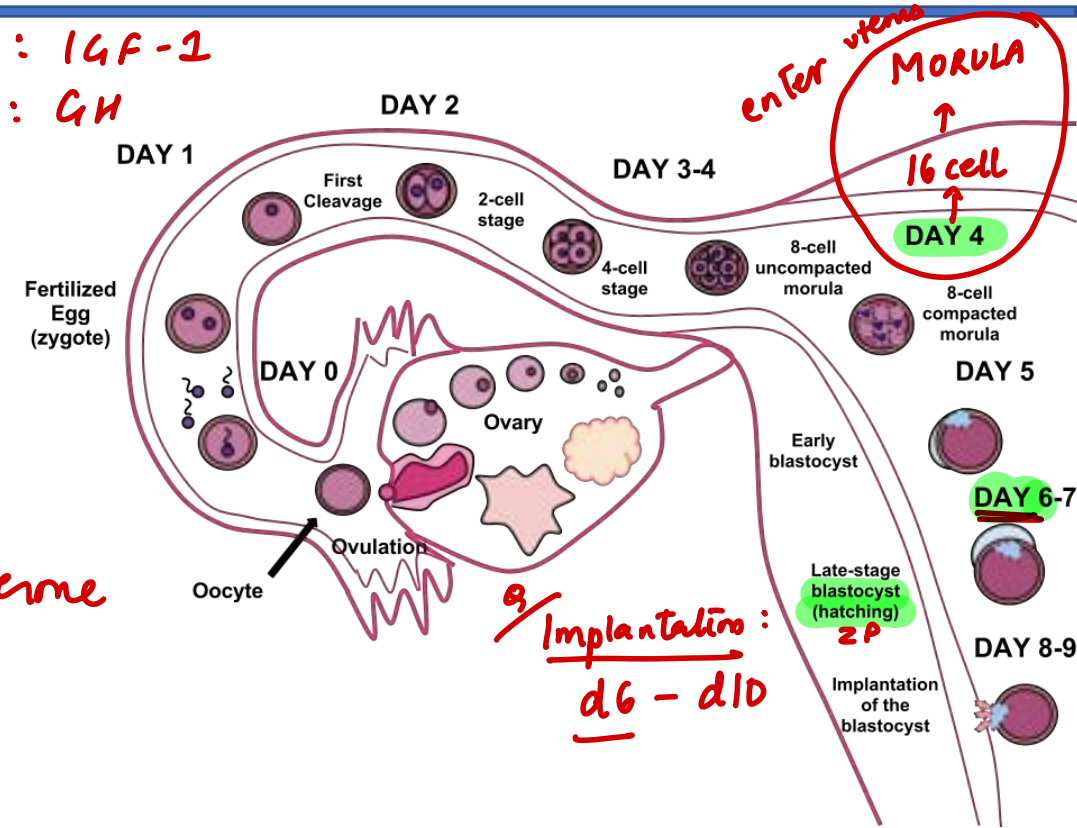
hCG Maintains CL till 8 weeks

progesterone

syncytiotrophoblast

B-HCG - specific

$\alpha$  subunit: HCG / TSH / FSH



# Mullerian Anomalies → FT / uteri / cx / upper 2/3 vagina

IOC: MAI / 3D USG Initial - VSG

GOLD STD: Laparoscopy + Hysteroscopy

MC C/F: RPL - 2nd trimester

MC Mullerian anomaly: Septate

Infertility associated with: Septate

Worst reproductive outcome: Septate

Best reproductive outcome: Arcuate > Diadelphys

Uncommon lie in didelphys: transverse lie

Max association with renal anomaly: Unicornuate

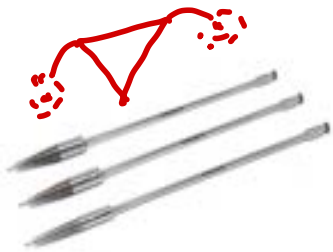
DES related most specific malformation: T-shaped uterus

mc: Hypoplastic

DES related malignancy: Clear cell ca vagina

Management of septate: Hysteroscopic septum resection

Management of bicornuate: Metroplasty - Strassman / Jones

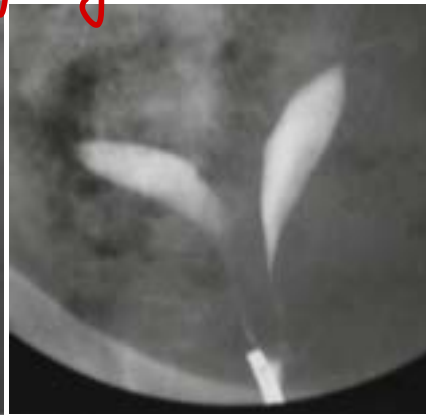


Leech-  
Wilkinson  
cannula

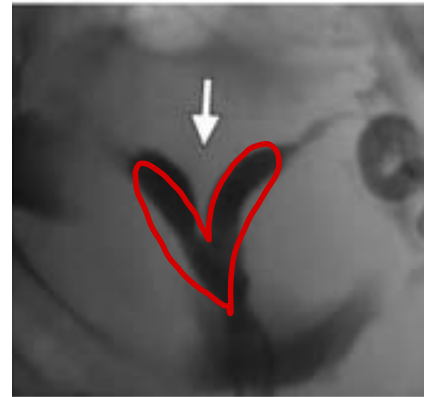
Karman cannula



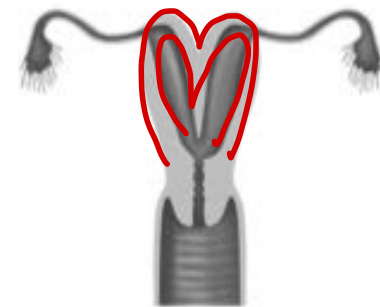
Unicornuate



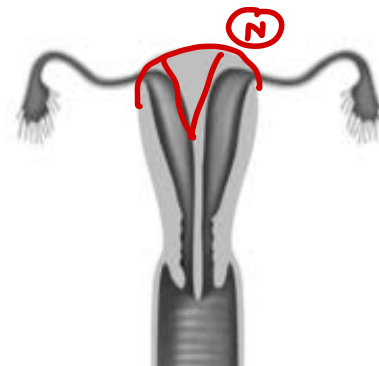
Diadelphys



Bicornuate uterus  
Septate



Bicornuate



Septate

# INFERTILITY

- Begin Ix after: 1yr >35yrs: >6mon
- Initial Investigation: *Semen analysis*
- Abstinence before sample: 2-7d
- MCC of male factor: *azoospermia*
- APPROACH TO AZOOSPERMIA:

↓ FSH  
↓ testost

↑ FSH  
↓ testost

- ↓
- Kallman - anosmia  
    ↳ Kisspeptin
  - Hypopituitarism

↓ MCC

1° testicular failure

trauma / orchitis /  
varicocele

- Mx:
- 10-15million/ml: IVI
- 5-10million/ml: IVF
- <5million/ml: ICSI

- TESE  
(testicular sperm  
extract)

Ⓝ FSH  
Ⓝ testosterone

↓  
Obstruction

• CF → b/l absence  
of VD

Semen parameters	WHO 2010	WHO 2020
Semen volume	1.5 ml	1.4 ml
Sperm concentration	<u>15 million/ml</u>	<u>16 million/ml</u>
Total motility	40%	42%
Progressive motility	32%	30%
Viability	58%	54%
<u>Morphology</u>	4%	<u>4%</u>

↓  
most imp

# Female infertility

MCC of female factor- *anovulation*

WHO grade- 2

## OVULATION:

MC- *USG follicular monitoring*

Best- Progesterone ~ d21 -  $>3\text{ng}$  (N)

Gold standard- Endometrial biopsy - *secretory*

**OVARIAN RESERVE** = *Premature ovarian failure*

MC- FSH  $>40$

Best- AMH  $<1$  *Follicle any day*  $\left. \begin{array}{l} <1 \\ \end{array} \right\} \text{abN}$

## TUBAL FACTOR:

Initial- *HSG*

Best- *Lap chromopertubation - methylene blue*



*SIN: salpingitis isthmica nodosa* Retort / tobacco pouch  
• Hydrosalpinx

(TB)

- mc: fallopian tube  $\rightarrow$  ampulla.  
- Hematogenous

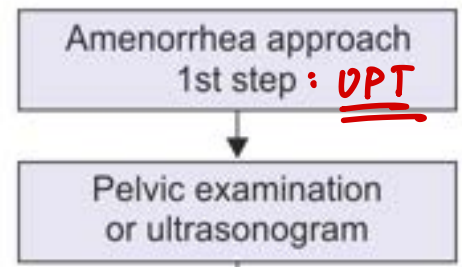
• TB / PID

# APPROACH TO AMENORRHEA

1° / delayed puberty:  
 > 13y - cont 2° sexual  
 > 15y - 2° sexual



Imperforate hymen  
 Rx → cruciate incision



CRYPTOMENORRHEA  
 Cyclical pain abdomen

External exam normal

- transverse vaginal septum  
 • Hemato colpos/ metra → loc: MRI  
 Rx - septum resec<sup>n</sup> / vaginoplasty

Uterus present

Uterus absent

Serum FSH

Karyotype-XY  
 Testosterone-male  
 Axillary/public hair-absent  
 Breast-present

Karyotype-XX  
 Testosterone-Female  
 Axillary/public hair-normal  
 Breast-present

46 XY  
 Testes present  
 Male internal genitalia  
 Virilisation at puberty:  
 Acne, male axillary and pubic hair, clitoromegaly

• TSH  
 • PRL

Increased    Decreased    Normal

Karyotyping

Premature ovarian failure

Progesterone challenge test  
 ↓  
 E+P challenge test

AIS / TFS - msc of male pseudo H

Mullerian agenesis / MRKH Sx

Sd reductase ⊖  
 |  
 male pseudo H

Anovulation

⊗ bleed → Asherman Sx

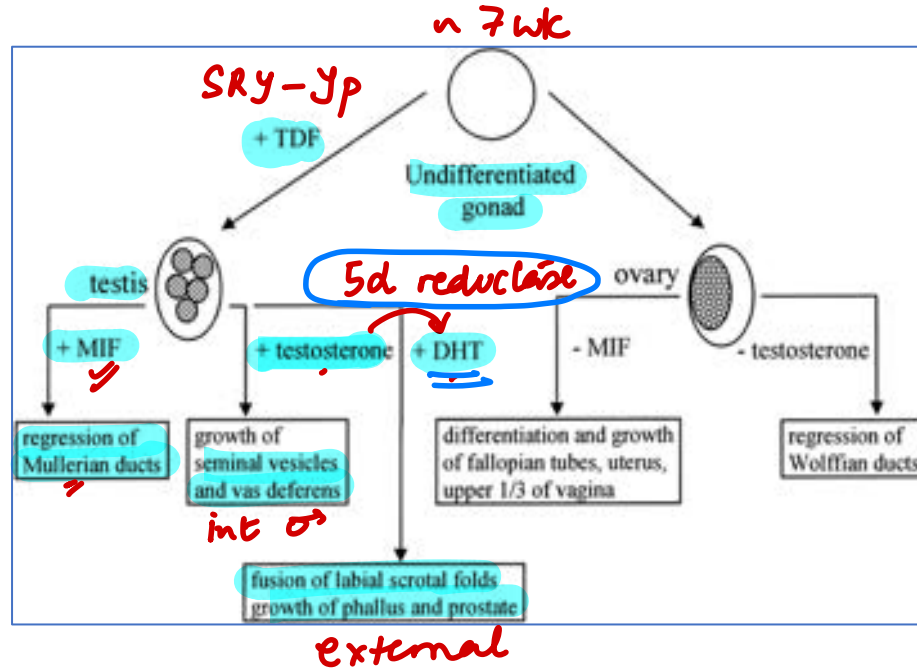
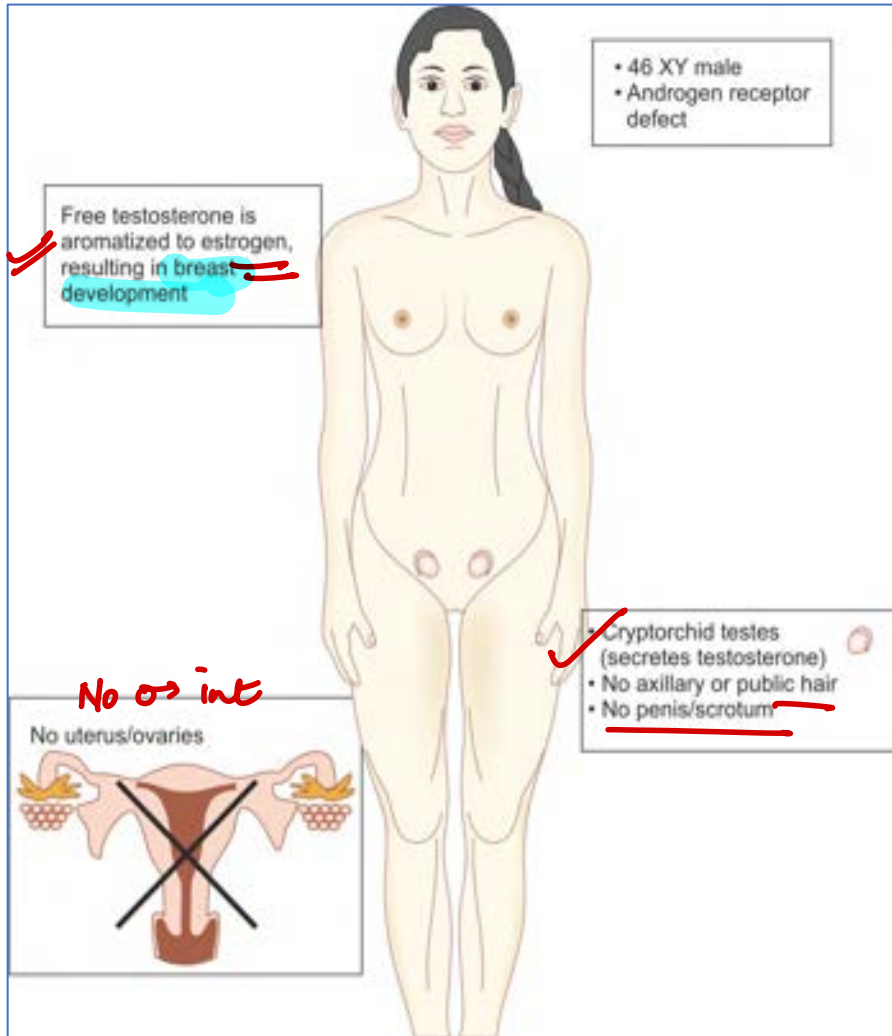
- h/o DBC  
 Intrauterine synechia  
 Rx - hysteroscopic adhesiolysis

Kallman / Sheehan / Anorexia

uterus ⊕  
 breast ⊖

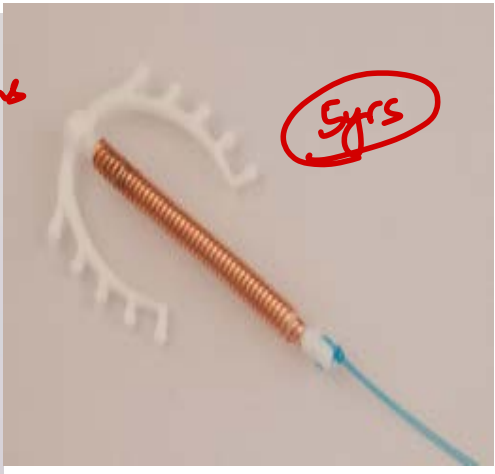
GONADAL DYSGENESIS		
Secondary sexual characteristics: Absent		
45XO	46XY	46XX-TRUE
TURNER Sx	Swyer Sx	

- male pseudo H



Asherman

# CONTRACEPTIVES-NFWP



CuT 380A - Paraguard  
10yrs

CuT Multiload  
375



BARRIER - prevent STD/HIV  
male condom  
Female condom - Polyurethane

OCPCs: LNG 0.15mg  
EE 0.03mg  
ferrous fumarate

Main MOA: Inhibition of fertilization > implantation  
CI: AUB, Active PID, Uterine mass  
Post partum IUD: < 48hrs

Missed pill concept:

1/2 pills missed      3 or more pills missed

- take 1 extra pill  
- additional method (+) ~ 7d  
1/2nd week  
3rd week  
- one extra pill  
- discard non-horm  
- start new pack  
RIF:  
- Early menarche  
- Late menopause  
- Nulliparity

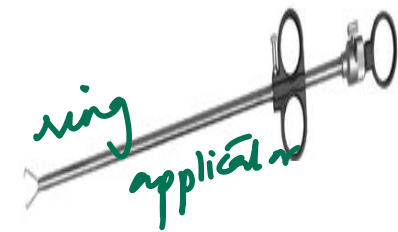
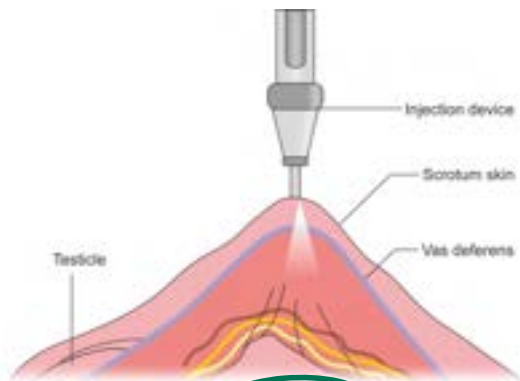
Main MOA: Inhibition of ovulation  
CI in CAD, Stroke, Hytn, DM with vasculopathy, Ca breast, Migraine, DVT, smoker >35yrs

INCREASE: Liver adenoma, Ca cervix, Ca breast  
DECREASE: CED  
Endometrial, Ovarian, Colorectal ca  
↑ Increase (endometrium) ↓ decrease  
HRT



MIRENA  
LNG - IUD  
52mg (20µg/d)  
Contracep + HMB - Best

Frameless IUD =  
Gynefix  
Cu beads



- Orniloxefene
- CDRI, Lucknow

DMPA 150mg im  
3 months

NSV  
Sterility > 3 mon  
> 20 ejaculations

Falope rings

Can be given upto 2 weeks early and 4 weeks delay Q

CI: PCOD

MC site of ligation: isthmus - uniform muscle thickness  
MCC of failure: Round lig  
Interval: < 7d of menstrual  
Post-partum: > 24hrs < 7d → Mini-lap  
MTP: concurrent → 2nd trimester MTP  
Consent of spouse: NO

Modified Pomeroy -  
Chronic Cutgut

Cardinal lig = transverse cervical lig  
uterine A / veler

Suspensory lig = Infundibulopelvic lig  
torion  
OVARIAN VESSELS

R T O  
Round lig Tube ovarian lig  
↳ gubernaculum  
- to I.M.J  
- Sampson's A-inf epig A  
↳ utero-ovarian anastomosis

# CONTRACEPTIVES



Diaphragm  
 + spermicidal agent - nonoxonyl 9  
 ⊖ motility

vaginal sponge

**Norelgestromin + Ethinyl Estradiol**

PATCH

**Etonogestrel + Ethinyl Estradiol**

topical

34 x 2.4mm: 6  
 Silicone capsules  
**36mg LNG** (Sc)

~ 5yr

• immediately reversible



Essure  
 - hysteroscopically  
 ~ 3mon

**MOA: Alter cervical mucous**  
 No change in ovulation  
**Minipill: >3hrs**    **Cerazette: >12hrs**

# EMERGENCY CONTRACEPTIVES



Contraceptive of choice: CI: OCP  
 Woman on anticoagulation for DVT: IUD  
 Molar pregnancy: CI: IUD  
 Post-partum: POP > IUD (Best: OCP (x estrogen))

Pearl Index:  $\frac{\text{no. of accid preg} \times 1200}{\text{no. of } \text{f} \times \text{months}}$

most effective: CuT <5d  
 mc: LNG 1.5mg No-Mifepristone  
 Stat MISOPROSTOL  
 <3d

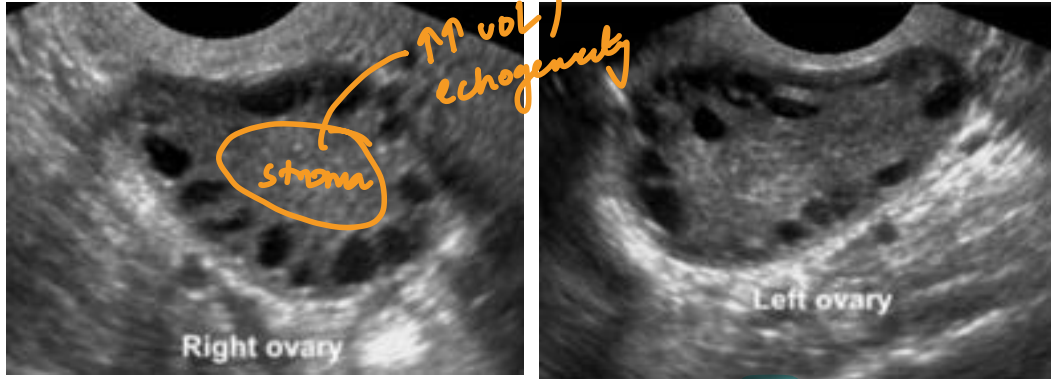
OCP  
 MIFEPRISTONE

Yuzpe regimen:

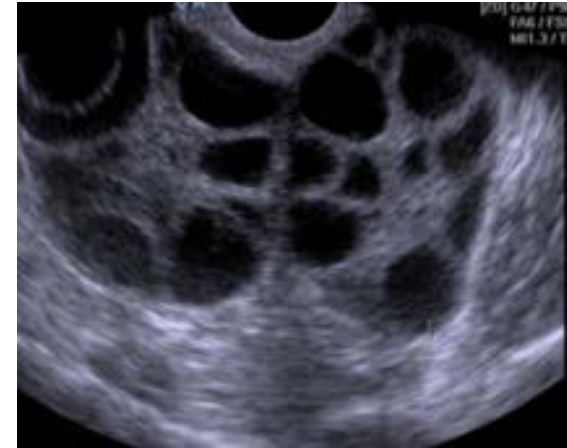
EE 100ug + LNG 0.5mg twice  
 12hrs apart

	Pearl Index
Calendar Method	24
Female Condom Vaginal Sponge	20
Male condom	14
IUCD	2
OCP	1
Sterilization	0.1

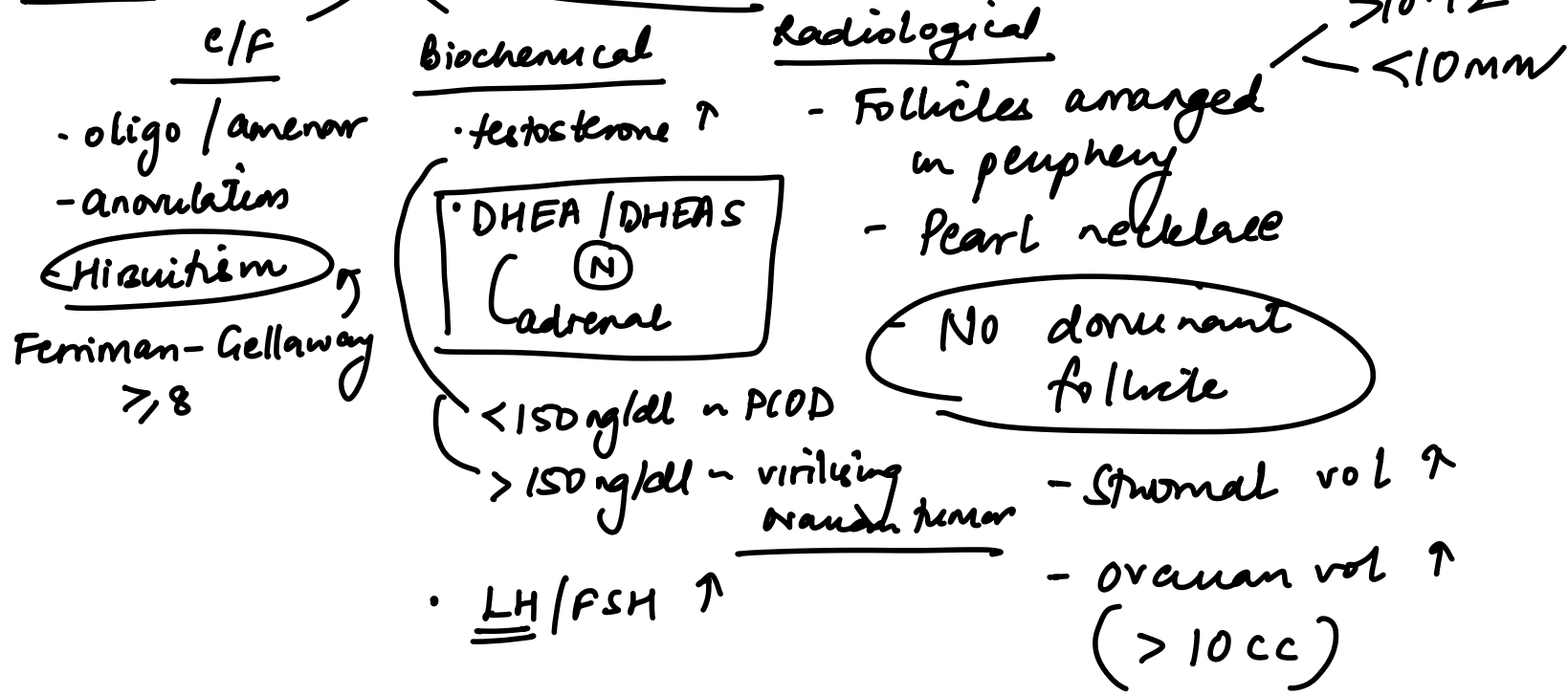
# APPROACH TO ENLARGED OVARIES



Mx → Lifestyle modify?  
 Infertility → Letrozole > Clomiphene citrate  
 irreg menstrual:  
OCs → \* → Spironolactone (Hirsutism ↑)



## PCOD - Rotterdam Criteria (2/3)



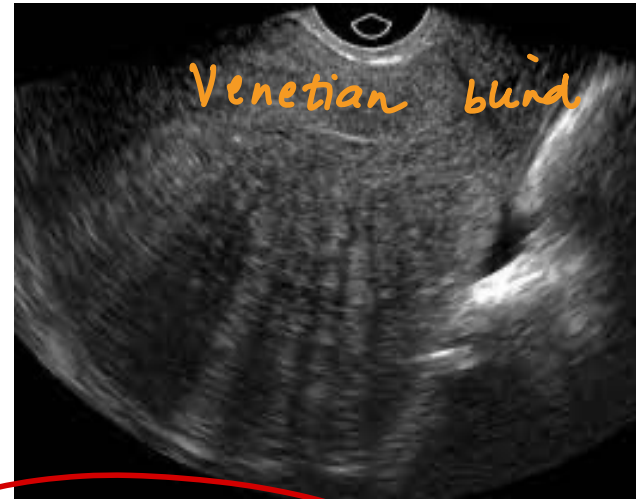
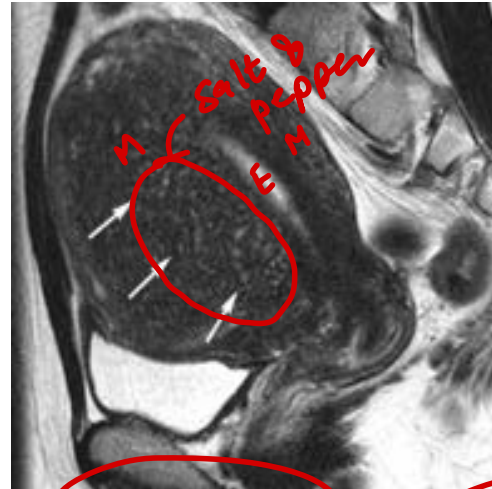
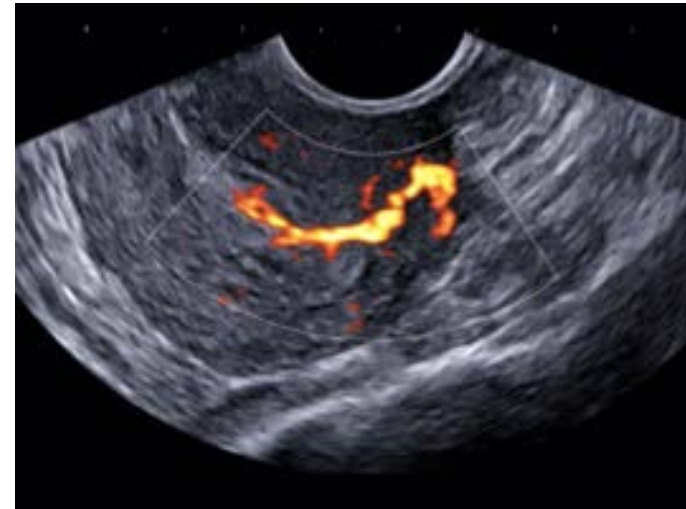
h/o IVF  
OHSS

h/o molar pregnancy  
Theca-lutein cysts

# AUB

(N): 24-38d  
 >8d / >80ml

MCC → anovulation



Feeding vessel sign  
 + Saline-infusion sonography (SIS)



LOC-MRI

ADENOMYOSIS

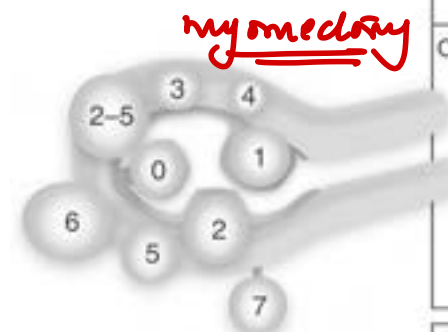
FIBROID

- dyspareunia, dysmenorrhea
- symmetrical enlargement
- tender, (< 12 wks POC)

- asymmetrical

- Polyp
- Adenomyosis
- Leiomyoma
- Malignancy and hyperplasia
- Coagulopathy
- Ovulatory dysfunction
- Endometrial
- Iatrogenic
- Non classified

leiomyoma



WHO - FIGO

SM - Submucosal	0	Pedunculated intracavitary
	1	<50% intramural
	2	≥50% intramural
O - Other	3	Contacts endometrium; 100% intramural
	4	Intramural
	5	Subserosal ≥50% intramural
	6	Subserosal <50% intramural
	7	Subserosal pedunculated
	8	Other (specify e.g., cervical, parasitic)

HMB / infertility

myomectomy

# BASIC OBSTETRICS

## LEOPOLD MANUEVER

Naegles formula:  $LMP + 9m + 7d$  EDD  
 Best for GA in irregular/ OCP:  $CL - USG$  1st trimester

G-No. of conceptions  $G3P2$   
 P-No. of past pregnancies  $>28wks$   
 TPAL: Live issue twins:  
 $G2P_{1+0+0+2}$   
73% 20-37wks <20wks



Fundal grip



Lateral/lumbical grip



Pawlick grip  
 presenting part



Pelvic grip  
 Attitude  
 flex / deflex / extend

Uterus size:  
 Pubic symphysis:  $12wks$   
 Umbilicus:  $20-22wks$   
 Xiphisternum:  $36wks$  → Lightening

Quickening  
 $\sim 18wks$   
Internal ballotment  
 $\sim 20wks$

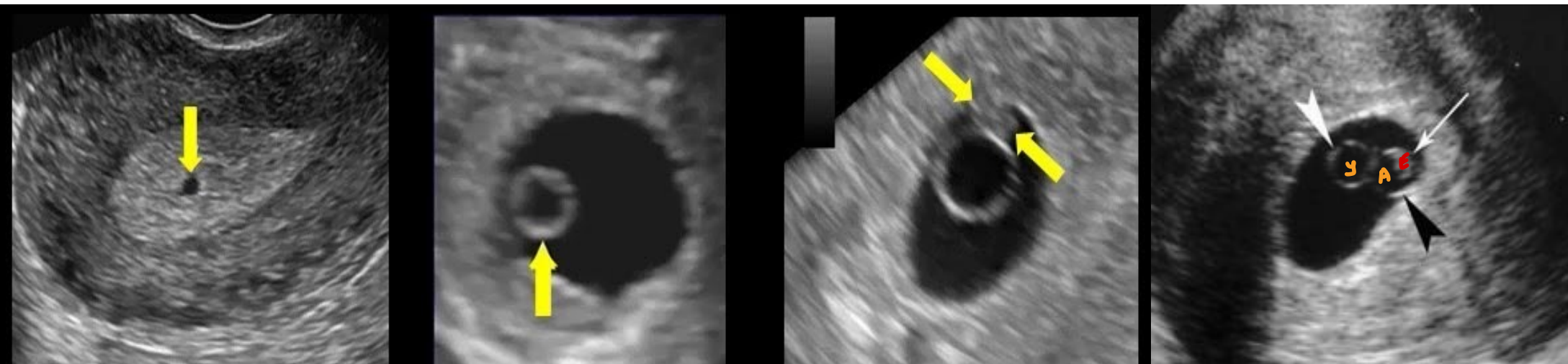
Tests at first visit:  
 Hb, Blood group -ve → Husband's blood grp  
 VDRL, HIV, Rubella IgG +ve  
 HbsAg +/-  
 Urine R/Mx .04TT 1st visit 24-28wks POC

<3yrs: one booster

Vaccines: Td, Flu, Tdap at  $27-36wks$  2 doses - 4wks apart  
 CI LIVE: BCG, Varicella, MMR, HPV except Yellow fever

Sign	Description	$\sim 6-8wks$ POC
Jacquemier's	Bluish hue of ant vaginal wall	
Chadwick's sign		
Osiander's sign	Increased pulsation felt through the lateral fornices	
Goodell's sign	Soft cervix	
Piscacek's sign	Asymmetrical uterine enlargement in lateral implantation	
Hegar's sign	On bimanual exam, the abdominal and vaginal finger appose below the body of the uterus	
Palmer's sign	Rhythmic uterine contractions elicited on bimanual exam	

# EARLY PREGNANCY USG



G-sac

TVS: 4.5 wks

1wk →

Yolk sac

1wk →

Embryo / fetal pole

~ 6.5 wks

1wk →

DOUBLE BLEB



TAS: + 1wk

Intradecidual sign

Double decidual sign  
 ↳ capsularis  
 ↳ parietalis

FHR (+)

↓  
surest s/o viability



CRL - most accurate  
Gest age

# PHYSIOLOGICAL CHANGES IN PREGNANCY

↑ Estrogen + aldosterone

Blood/plasma/RBC volume

Retic count

WBC count

All clotting factors

Fibrinogen

ESR

SHBG/TBG, Total protein

Total T3/T4 ↑ Free T3/T4 (N)

CO - mixed PP > TSH - (N) exc

HR, SV 2nd stage > 1st times ↓

34 wks

IC TV MV ↑

RBF, GFR

↓

Hematocrit

Hb

Platelet

F 11/13 ↓ ↓

Albumin

Protein C/S

PVR ↑

BP (DBP > SBP fall)

FRC ↓

RV ↓

Sr Urea

Uric acid/Creatinine

Vaginal pH ↓ lactobacilli ↑

Constant

BT, CT

EF

IRV

RR

Vital capacity

TLC

COMPLIANCE



Pyogenic granuloma

melasma  
linea nigra  
pigment<sup>n</sup> : Estrogen

# Aneuploidy screening <sup>QQ</sup>

95%  
**Nuchal translucency (NT-NB)** - 11-13<sup>+6</sup> wks POC

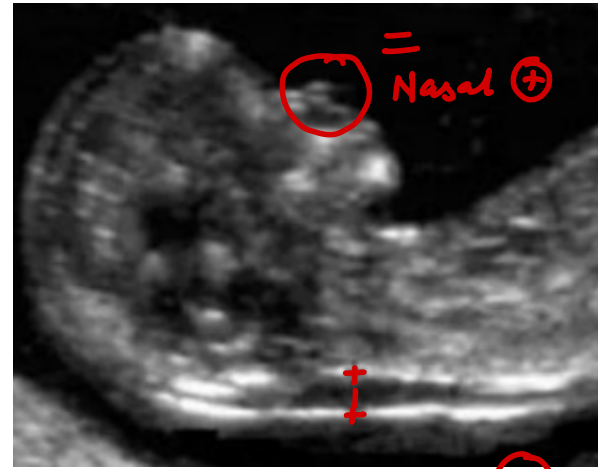
Nuchal fold thickness (2nd) - >6mm abN

**DOWN'S**

Dual marker: (1st) **HCG** (↑) + **PAPP-A** (↓)

Triple marker: (2nd) **HCG** (↑) + **AFP** (↓) + **Estriol (E3)** (↓)

Quadruple marker: (2nd) + **Inhibin-A** (↑) - Bart / Kellerng test



NT < 3mm (N)  
 ↑ NT - aneuploidy  
 CVS anomalies

**NIPT:** cell free fetal DNA - 99% SNV - High-risk - SCREENING

↓ Karyotyping

Chorionic Villous Sampling	<b>Amniocentesis</b>	Cordocentesis XX
10-13 wks.	15-20 wks. <u>MC</u>	18-20 wks.
Trophoblasts	Amniocytes, fetal <u>dermal fibroblasts</u>	Fetal blood cells

↑ fetal limb defects

- HAE  
- IA  
✓✓

✓✓ IM ✓✓ BJ  
✓✓

- Shaking hand  
Colles'  
PROPA GONDA

CTG

Myotonic  
JD



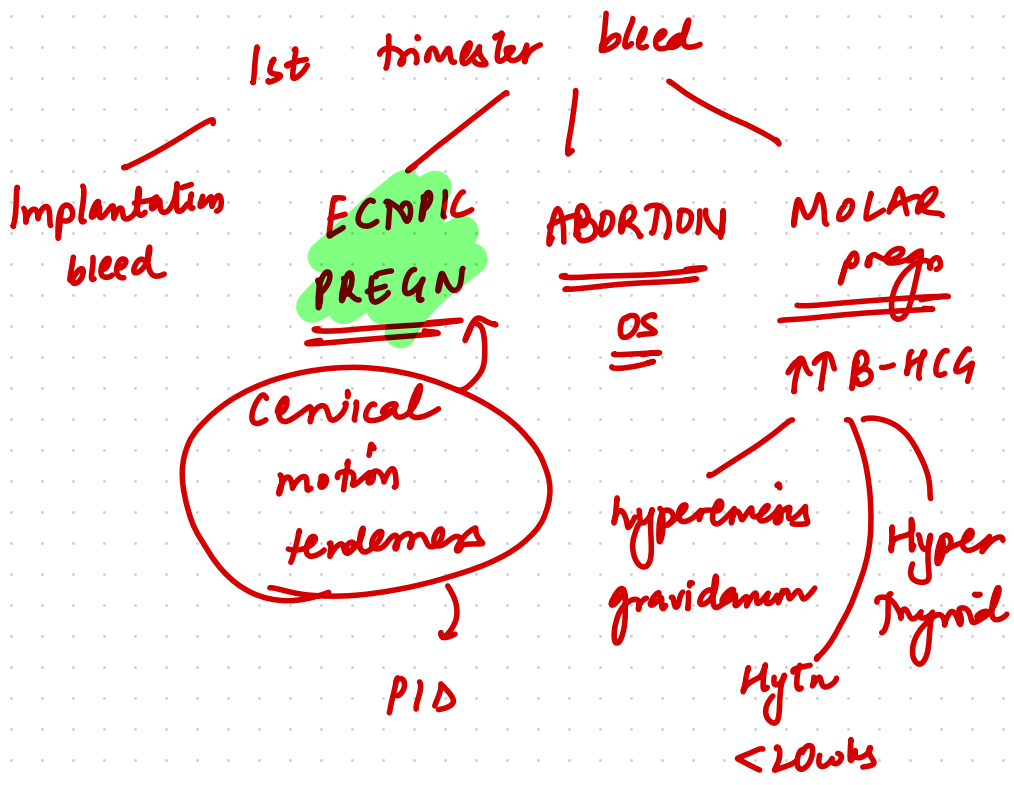
• Hatchet

• AD

• Christmas

Cataract

- 19



# Ectopic pregnancy

MC → ampulla (FT)  
 longest → cornual/interstitial  
 R/F: past h/o ectopic > tubal ligation, IUD



adnexal cyst + ring of fire/bagel  
 → Ectopic pregnancy  
 → CL cyst  
 - uterine pregn ++  
 - regresses in 2nd T

\* Heterotopic

**PUL: UPT + Empty Uterus**  
 Next: Serial  $\beta$ -HCG x 4hrs  
 doubling  
 early pregn - doubles  
 ectopic - plateaus  
 abortion -  $\downarrow$   
 Discriminatory zone -  $\beta$ -HCG  
 >6000 - TAS  
 >2000 - TVS

**CRITERIA:**  
 Cervical- Palman / Rubin -  $\odot$  abortions - Sliding sign  
 Ovarian- Speilberg  
 Abdominal- Strudis form

- v-term  
 - placenta - retain

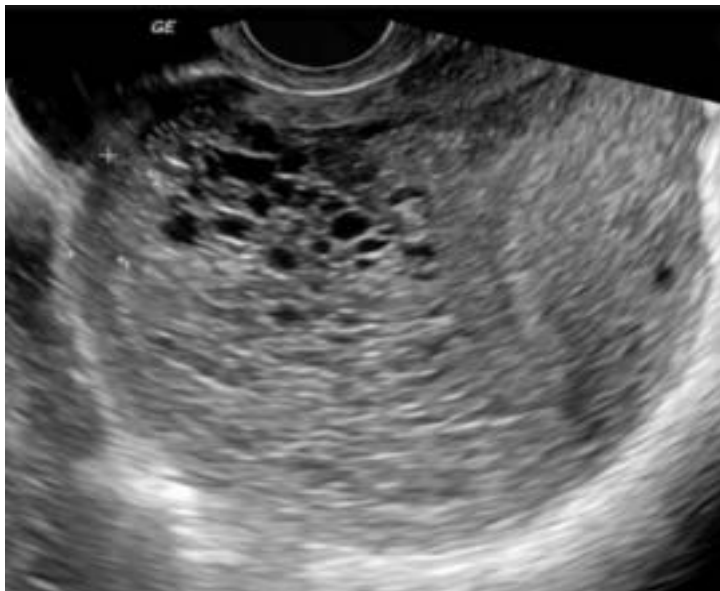
**Mx - Ruptured:** Expl lap → Salpingectomy  
 - Unruptured: Medical Vs surgical  
 - Stable  
 - Motivated  
 - HCG : < 5000  
 - FCA : absent  
 - Sac : < 3.5cm  
 - No CI to Mtx : Hepato tox , Pulm fibrosis

salpingectomy  
 salpingostomy - other tube damaged

Day 1: MTX im 50mg/m<sup>2</sup> - single dose  
 Day 4, 7 : B-HCG  
 Repeat if <15% decline  
 Monitor weekly till zero

Shock

# Molar pregnancy



Complete	Partial
Generally diploid or tetraploid; generally all chromosomes paternal	Generally triploid, extra set of chromosomes is paternal

Hydropic degener<sup>n</sup> of villi

FOCAL

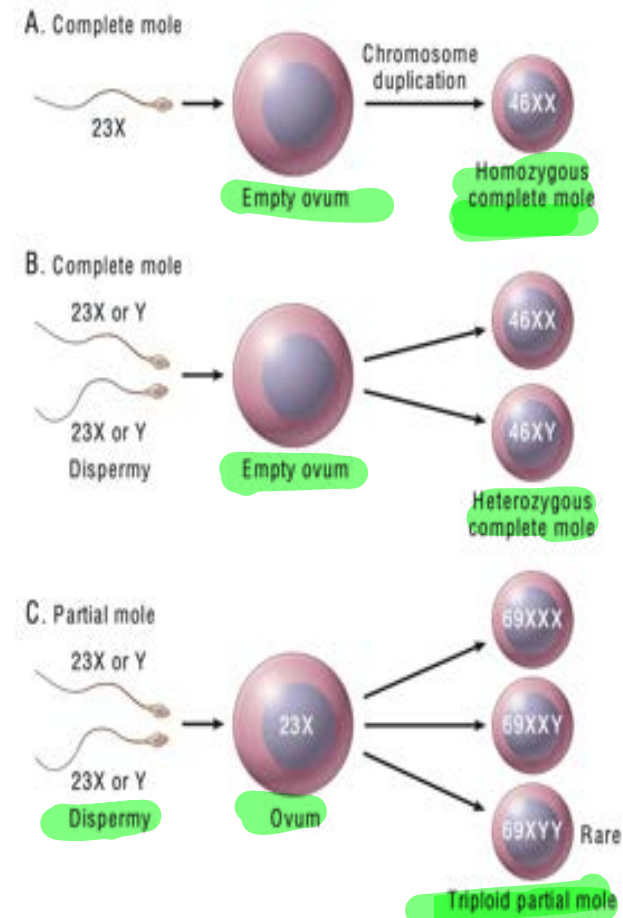
fetal parts (+)

p57 (+)

Cluster of grapes / Snowstorm

Fundal ht > POC

Mx - suction & evacuation



# GTN

GTN: Invasive mole > CCA > PSTT > ETT

MC

Epithelial trophoblastic tumor

## CRITERIA:

- Persistent bleed
- Uterine subinvolution
- Shock
- Persistent TL cyst
- Mets
- BHCG plateau -1,7,14,21
- BHCG rise -1,7,14
- BHCG detectable >6 months
- H/P

subretinal nodule



mc: Cannon ball



## WHO prognostic scoring

Scores	0	1	2	4
Age in years	<40	>40	-	-
Antecedent pregnancy	H. Mole	Abortion	Term	-
Interval since last pregnancy	<4 months	4-6	7-12	>12
Bhcg	<1000	10 <sup>3</sup> -10 <sup>4</sup>	10 <sup>4</sup> -10 <sup>5</sup>	>10 <sup>5</sup>
Large size tumor	3-4	5	-	-
No of mets		1-4	5-8	>8
Site of mets		Spleen, kidney	GI	Liver, brain
Previous failed chemo			Single drug	Two or more drug

EMA CO - Etoposide, Mtx, Acthno D, Oncarin

WHO ≤ 6: Mtx

≥ 7: EMA CO

Stage I	Disease confined to uterus → Mtx
Stage II	GTN extending outside uterus but limited to genital structures (adnexa, vagina, broad ligament)
Stage III	GTN extending to lungs with or without known genital tract involvement
Stage IV	All other metastatic sites → EMA CO

# ABORTIONS

< 20 wks / < 500g

<p><b>Os open</b> Bleeding + Pain + Uterus smaller USG: RPOC</p>	<p><b>Os open</b> Bleeding + Pain + Uterus equal USG: <u>Fetus</u>, <u>no FCA</u></p>	<p><b>Os closed</b> Bleeding stopped Uterus smaller USG: Empty ET</p>	<p><b>Os closed</b> Spotting, Pain + Uterus equal USG: Fetus, <u>FCA +</u></p>	<p><b>Os closed</b> Spotting, Pain <u>+/-</u> Uterus smaller <u>USG: No FCA</u></p>
--	---	---	--	---

Incomplete

Inevitable

Complete

THREATENED

Missed

Advise  
strict bed  
rest

Progesterone

7/4  
every 20 min

3 cm dilation

## PRETERM LABOUR:

**CONTRACTIONS + >2cm DILATION**

Management of PTL and PPROM:

<34wks: Steroids + GBS prophylaxis + **TOCOLYTIC**

<32wks: Add MgSO<sub>4</sub> (neuroprotective)

>34weeks: GBS prophylaxis ± Steroids

Induce in PPROM: chorioamnionitis, abruption, fetal distress

Amniotic fluid:

Ferning, Nitrazene blue test-alkaline, Nile blue sulfatase / Fibronectin

Mifedipine  
Indometacin  
Atosiban  
- oxytocin  
- anby  
- disceises

blighted ovum

Early pregnancy failure:  
**Gsac > 25mm** with no fetal pole  
**CRL > 7mm** with no FHR

Missed abortion

	MTP 2021
<20 weeks	T/E/H/S - one dr
20-24 weeks	T/E/H - two dr
>24 weeks	T/E - medical board Radiologist   OB/GYN   Peds

- Therapeutic-life of mother endangered
- Eugenic - fetal anomaly
- Humanitarian-rape/incest/minor/mentally ill/marital status change
- Social - Contraception failure

Age for consent: >16yr  
 Consent of husband? NO

OBG  
 RMP with 6mon internship/ 1yr house job/ 25 cases MTP



MVA - (x) electricity

- 60ml
- 660mm Hg
- 6-12 wks PO4

MTP - 1st trimester

Medical: < 9 wks

200mg mifepristone (RU-486)  $\xrightarrow{48hr}$  800ug misoprostol

• suc<sup>n</sup> & evacuation ~ 12 wks

2nd trimester:

- Misoprostol (PGE1) 400ug 3hly (max 4-5 doses)
- D & E (ovum forceps)
- Intra-amniotic osmotic saline
- Extra-amniotic ethacridine

# Recurrent pregnancy loss

≥ 3 consecutive (Begin : ≥ 2)

Sydney/Sapporo : APLA - single mec

workup

MCC in 1<sup>st</sup> trimester: Chromosomal  
 MCC in 2<sup>nd</sup> trimester: Structural anomalies

Clinical Criteria	Laboratory Criteria
<ul style="list-style-type: none"> <li>Vascular Thrombosis</li> <li>Pregnancy Morbidity: 3 × 1                             <ul style="list-style-type: none"> <li>a) Premature birth at ≤ 34 wks. due to preeclampsia</li> <li>b) ≥ 3 consecutive abortions at &lt; 10 wks.</li> <li>c) Placental insufficiency at &lt; 34 wks.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Anti-Cardiolipin IgG/M</li> <li>Lupus Anticoagulant (LAC)</li> <li>Anti-B2 glycoprotein</li> </ul> <p>2 x 12 wks apart</p> <p><i>In vitro</i> →                  . aPTT ↑                  . Russel viper venom test</p>

Tests in RPL:  
 TVS  
 TSH  
 Karyotyping  
 APLA  
 Not TORCH

1st T → 2nd T →  
 32 wks - Placental insuff  
 Kassowitz law:  
 Cong syphilis

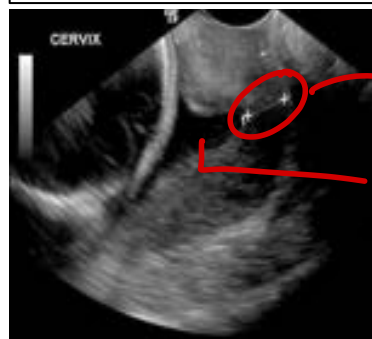
APLA  
 Definite APS: 1 Clinical + 1 Lab Criteria  
 Treatment: LMWH + Aspirin

Cervical incompetence: PAINLESS - 2<sup>nd</sup> trimester cervical del.  
 MANAGEMENT:  
 1. Clinical - w/o ≥ 2 painless labors in 2<sup>nd</sup> trimester  
 2. 1 painless + USG - cervical length ≤ 24mm  
 Cerclage in non-pregnant: Lash and Lash/  
 Bensun Durfee/ Laparoscopic  
 Absolute CI to cerclage: Rupture of memb

Anticoagulation in pregnancy

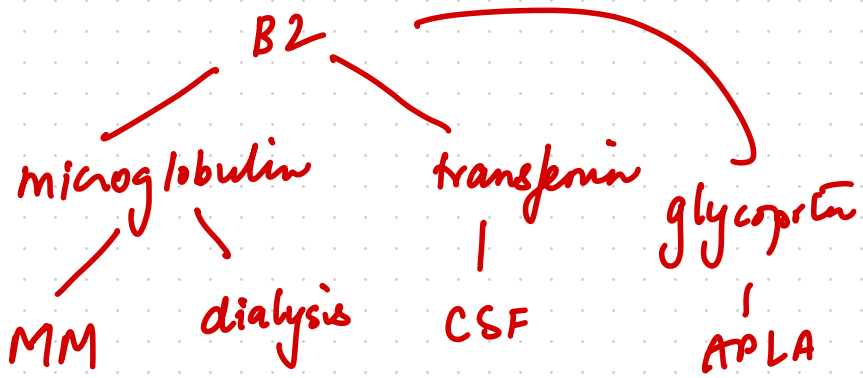
< 12 wk → 12-36 wks → > 36 wks  
 | | |  
 LMWH Warfarin Heparin switch (LMWH)

CERCLAGE  
 Shirodkar / Mac Donald  
 12-14 wks POC



CL ≤ 24mm  
 Funneling

(2) × (12) = (24)



# PIH

Pathophysiology: Failure of invasion of spiral artery by extra-villous cytotrophoblasts  
 TxA2: PGI2:  $\uparrow$

Condition	Criteria
Chronic hypertension	BP > 140/90mm < 20wks POG
Gestational hypertension	> 20wks POG
Preeclampsia	<ul style="list-style-type: none"> <li>Hypertension PLUS PROTEINURIA</li> <li><math>\geq 300</math> mg/24 h or Urine protein: creatinine ratio <math>\geq 0.3</math>, or Dipstick 1+ persistent</li> </ul>
Severe Preeclampsia / HELLP "impending eclampsia"	blurring of vision + headache / dyspnea / RUQ pain Tennessee criteria: Hemolytic anemia + Elevated OT/PT + Low plt schistocytes / LDH > 600 / bil > 1.2 < 7 lakh/mm <sup>3</sup>
Eclampsia	convulsions

**Antihypertensives in pregnancy:**

**Labetalol** DOC

Max dose: 2400mg oral

Methyldopa

Nifedipine-Nitroprusside-

Nitroglycerine

Hydralazine

ARB/ACE, Betablockers, Diuretics

ABCD

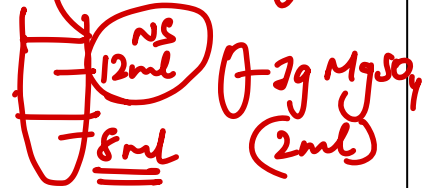
CI

Eclampsia: DOC:  $MgSO_4$

MOA: lower BP x x (neuroprotective - NMDA)

REGIMEN PRITCHARD - Loading dose - (x renal fn)

14g  $\left\{ \begin{array}{l} \underline{10g} \text{ im (50\% w/v)} - \text{each buttocks} \\ \underline{4g} \text{ iv (20\% w/v)} \end{array} \right.$



Therapeutic level- 4-7 meq/L

Monitoring-

- DTR - sluggish
- RR
- Urine output

antidote: Ca gluconate 10%

# LIVER DISEASES IN PREGNANCY

## HELLP

• Hemolytic anemia

• Low plt

• ↑ OT/PT

## AFLP

• ↑ maternal mortality

• def of LCHAD fetus

• OT/PT (↑↑)

• Hypoglycemia

• ↑ NH<sub>3</sub>

• Immediate TDP

## ICP

• ↑ bile acids

Pruritus ++

Rp - UDCA  
terminate  
at 37wks  
POG

## Viral Hepatitis

• Hep E

↳ 20% mortality

# GDM < Initial 24-28 wks → OGTT

Guidelines	Fasting mg/dl (mmol/L)	Glucose Challenge	1-hour mg/dL (mmol/L)	2-hour mg/dL (mmol/L)
IADPSG (A11MS)	≥ 92	75 g OGTT	≥ 180 $9 \times 2$	≥ 153 $5+3+1=9$ $3-1=2$
DIPSI (Indian)		75 g OGTT		≥ 140

Congenital anomalies - Overt DM

-MC CVS - VSD

-Most specific CVS - TGA

-Most specific overall - Caudal regression Sx / sacral agenesis

Macrosomia - overt / GDM > 4kg - Insulin ↑↑ → LSCS preferred

Liquor: Polyhydramnios

Neonatal: Penderson - Hypoglycemia, ↓Ca, ↓Mg, RDS, polycythemia - jaundice

Timing of delivery:

- well controlled → 39 wks
- uncontrolled → 37 wks

[ Ac: fetal growth  
Efw: Johnson / Hadlock / Shepherd ]

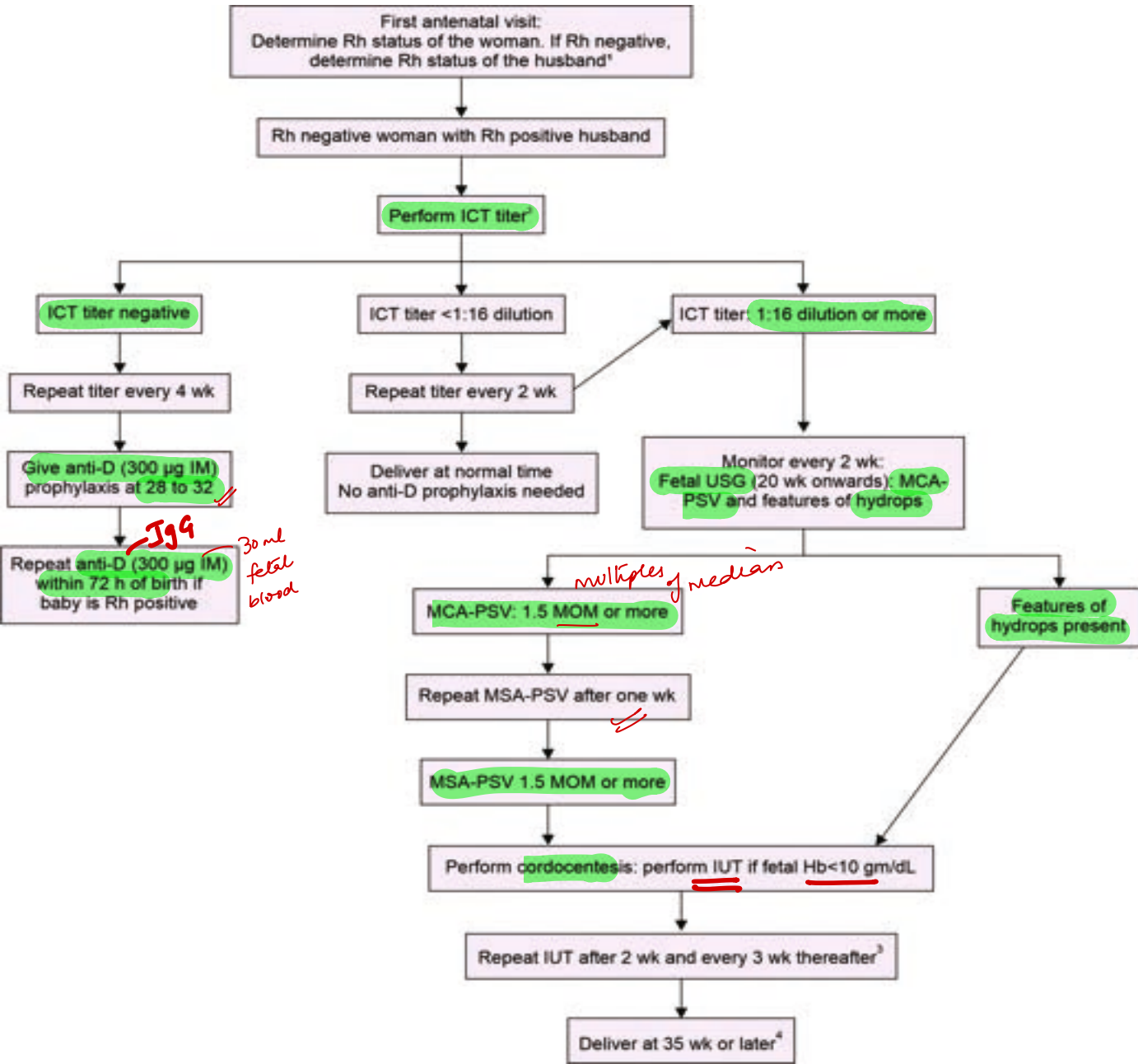
Sirenomelia



Diabetes/ AED/ h/o NTD/  
sickle cell anemia

↓  
FOLATE 5mg prior 3mon

# Rh isoimmunisation



Threatened and complete abortions in first trimester-Anti-D? **NO**

Avoid methylergometrine  
300microgram-30ml fetal blood  
Half life: **21d**



**Anasarca**

**Pl effusion**  
**Ascites**  
**Pericardial effusion**

**2**

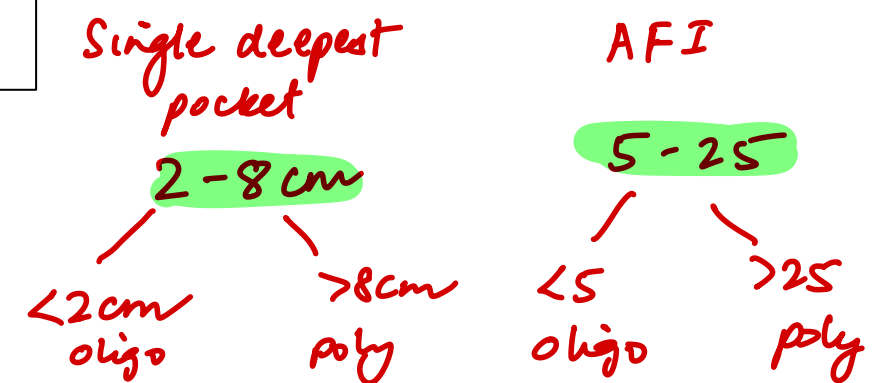
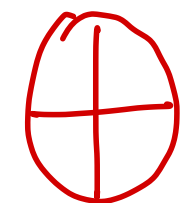
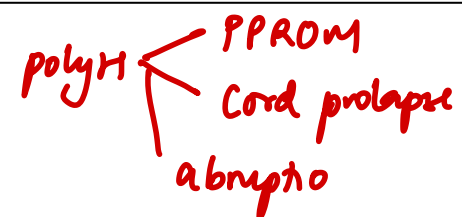
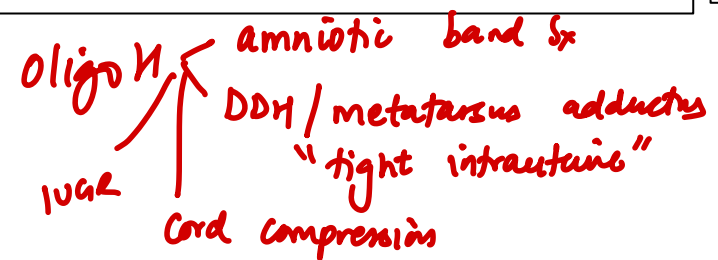
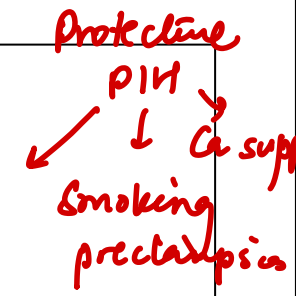
# Anemia, thyroid, liquor disorders in pregnancy

Anemia:  $< 11 \text{ g/dl}$  Hct  $< 33\%$   
 MC: Physiological  $\rightarrow$  IDA  
 GOI IFA pill: 60mg Fe + 500ug folate OD  
 Deworming: 400mg albendazole sd  
 Management of anemia:  
 >7g/dl:  
 <34wks: IFA - BD  
 >34wks/noncompliant: parenteral  
 <7g/dl:  
 <34wks: parenteral  
 >34wks or <5g/dl: BT  
 Parenteral iron: Fe sucrose / Fe carboxymaltose

Thyroid disorders  
 T3, T4: Total:  $\uparrow$  Free:  $\text{N}$   
 TBG:  $\uparrow$   
 On treatment for hypothyroidism,  
 Dose: increase

Indications of Aspirin:  
 APLA  
 Past h/o PIH/chronic Hytn  
 Multifetal pregnancy  
 Overt DM  
 CKD

AMNIOTIC FLUID  
 Uteroplacental insufficiency:  $\downarrow$   
 Renal agenesis:  $\downarrow$   
 Barter syndrome in fetus:  $\uparrow$   
 PUV:  $\downarrow$   
 Esophageal atresia:  $\uparrow$   
 Cleft lip/palate:  $\uparrow$   
 NTD:  $\uparrow$   
 Omphalocele:  $\uparrow$   
 Fetal anemia:  $\uparrow$   
 GDM:  $\uparrow$   
 Twins:  $\uparrow$   
 Trisomy:  $\uparrow$   
 Anencephaly:  $\uparrow$



# Heart disorders in pregnancy

Not physiological: **Pansystolic/diastolic murmur**

2<sup>nd</sup>-4<sup>th</sup> ics high-pitch pansystolic: *Mammary souffle*

MC heart disease: *MS*

MC time for heart failure: *immed > 2nd > 34wks*  
*postpartum stage POC*

Delivery mode:

*NVD + instrumental*

**WHO IV: pregnancy not recommended**

Pulmonary arterial hypertension

Severe systemic ventricular dysfunction (EF<30%)

Moderate systemic right ventricular dysfunction

Severe mitral stenosis

Severe symptomatic aortic stenosis

Severe aortic dilatation

Vascular Ehlers-Danlos

Severe (re) coarctation

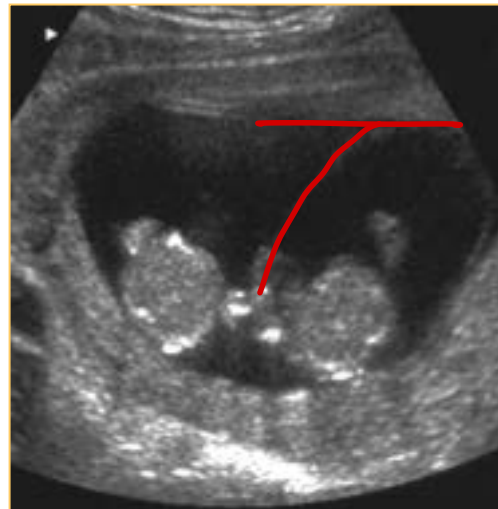
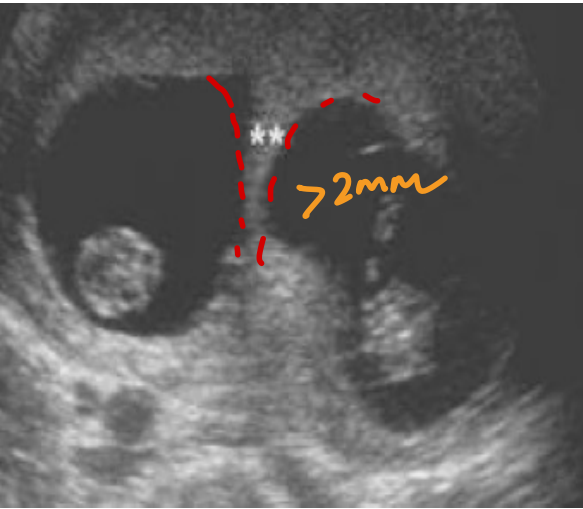
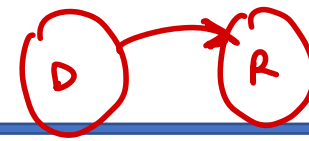
Fontan with any complication

**Peripartum CMP**

Eisenmenger syndrome

*2nd trimester / ≤5mm PP*  
*systolic dysfn*  
*Idiopathic*

# TWINS



**QUINTERO STAGING-TTTS**

Stage 1: Oligohydramnios-Polyhydramnios

Stage 2: Absent UB in donor

Stage 3: Doppler abnormalities

Stage 4: Fetal hydrops

R<sub>0</sub> → Laser ablation - abN anastomoses

Twin peak / Lambda sign

DCDA  
0-4d

T sign

MCDA  
4-8d

MAMC  
8-12d  
Cord entanglement

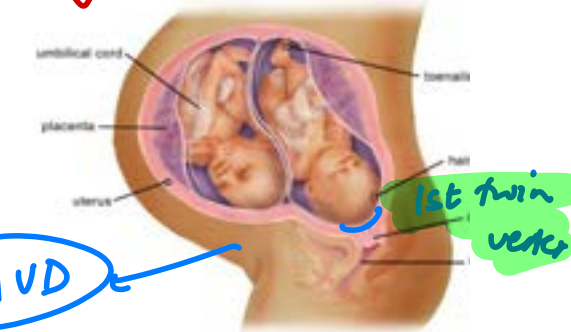
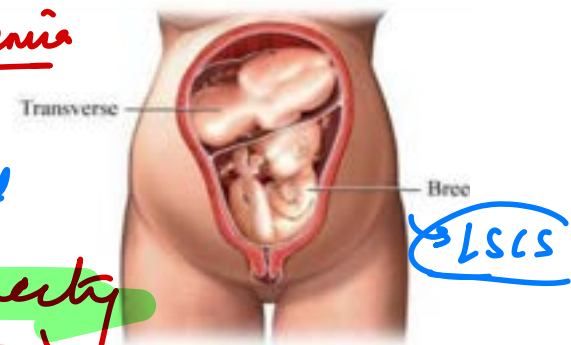
Most inc prognostic → Monochorionicity

TAPS - Twin anemia-polycythemia

TRAP - acardiac twin  
twin reversed arterial perfusions

>13d - Conjoined twins  
parapagus > Thoracopagus

deep A-V anast  
(N) - bidirectional  
abN - unidirectional



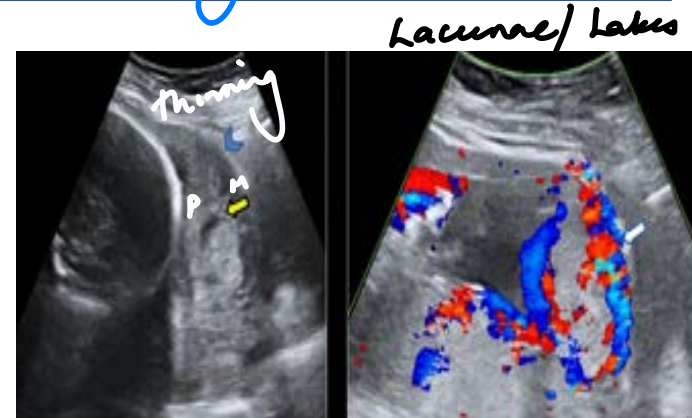
NVD

# T3 BLEEDING (>20wks) → Antepartum hemorrhage

- Warning bleed
- H/o LSCS/ Multiparity/ smoking
- Painless, bright red bleed with soft uterus
- FHS-normal
- Fundal height=POG
- Malpresentations common
- Apt test negative

- Painless, bright red bleed with soft uterus
- Fetal distress ++
- Fundal height=POG
- CTG: Sinusoidal
- Apt test +

- Trauma/PIH
- Painful, dark red bleed with tense tender uterus
- Fetal distress +
- Fundal height >POG
- DIC - thromboplastin



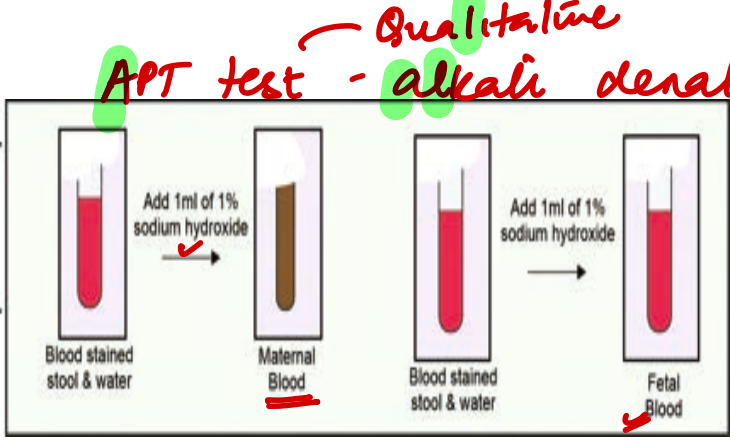
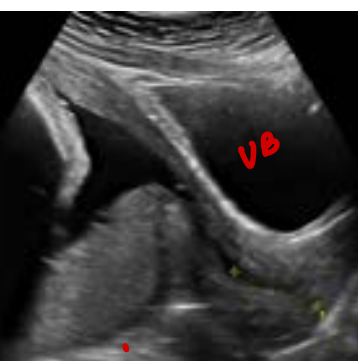
Placenta accreta spectrum / Morbidly adherent placenta

## Placenta Previa

- PV / PS CI <37wks >37wks  
 - TVS IOC  
 Mother/fetus stable  
 LSCS  
 McAfee Johnson  
 Ein 2cm of OC

Vasa previa  
 Emergent  
 LSCS

Abruptio placenta  
 x cytolytic  
 34wks  
 <34wks  
 >34wks  
 Induce  
 Steroids → 10L  
 (K-B test: Quantitative acid)

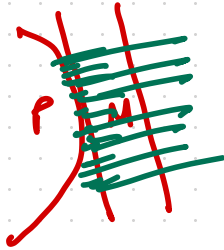


⊗ indicator for Hystereclomy  
 Couvelaire  
 Pl. apoplexy  
 vteus

Accreta  
= adhered

Increta  
inrading

Percreta  
penetrating  
(  
adj organs



USG → 1st

MRI - 100

↑ blood loss  
Hysterectomy  
Bladder inj

# TYPES OF PLACENTA

Bilobed



Circummarginale



Marginal /  
Battle dor



Velamentous



fetal vessel - os  
Wasa previa

Retained  
placenta



Succenturiate

mcc of 2° PPH  
( > 24 hrs )

Circumvallate



# Stages of Labour

**Stage 1:** full cervical dilatation

Latent phase – Active phase

Original (Friedmann): 3cm

Modified WHO Partogram: 4cm

WHO definition: 5cm (WHO Labour care guide)

Definition of Labour (ACOG): 6cm

**Stage 2** - expulsion of baby

**Stage 3** - " of placenta

**Stage 4** - Golden 1hr PP



Ritgen

**Active Phase** - Protracted: N -  $< 1.2 \text{ cm/hr}$

**Arrest**

M -  $< 1.5 \text{ cm/hr}$

↓  
**4hrs** - No change in dil<sup>n</sup> despite adequate contractions

**Second stage of labour:**

- Ritgen manoeuvre ✓

- Warm compress perineum ✓

- Fundal pressure ✗✗

- Routine episiotomy ✗✗

- Lithotomy ✗✗

↓ BP

**AMTSL:**

- 10IU oxytocin within 1min (im / iv infusion) x BOLUS

- Controlled cord traction Mod. Brandt - Andrews

- Intermittent assessment of uterine tone

- Delayed cord clamping

except birth asphyxia / Rh isoimm / HIV\*

○ Engagement

Cardinal

○ Descent

mvts

○ Flexion

○ Internal rotation

○ [ Crowning ]

○ Extension

○ Restitution

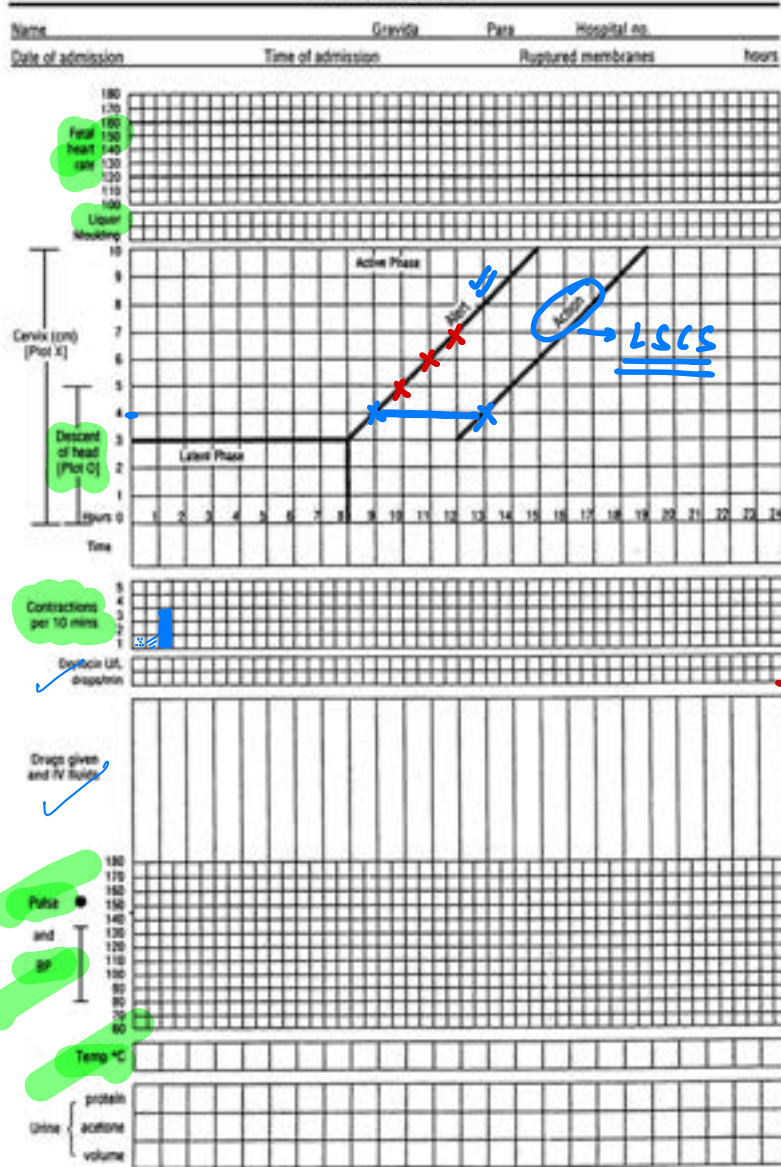
○ External rotation

○ Expulsion of rest of the body

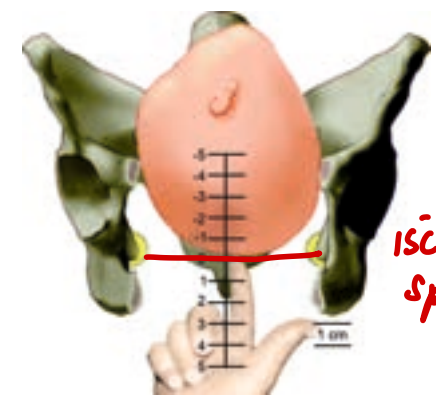
# Partogram

≥ 4cm dil<sup>n</sup>

## PARTOGRAPH



0	Bones separated
+	Bones touching but can be separated
++	Bone overlapping
+++	Bones overlapping severely

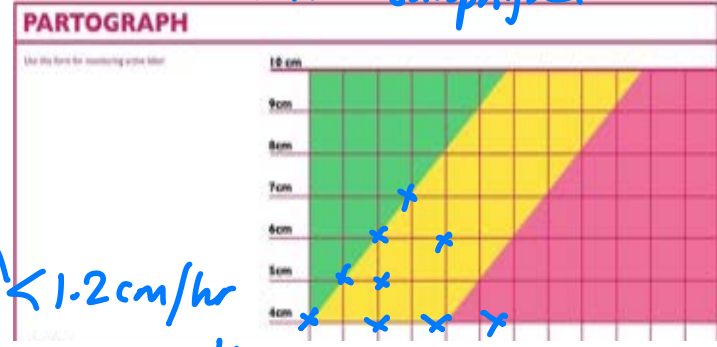
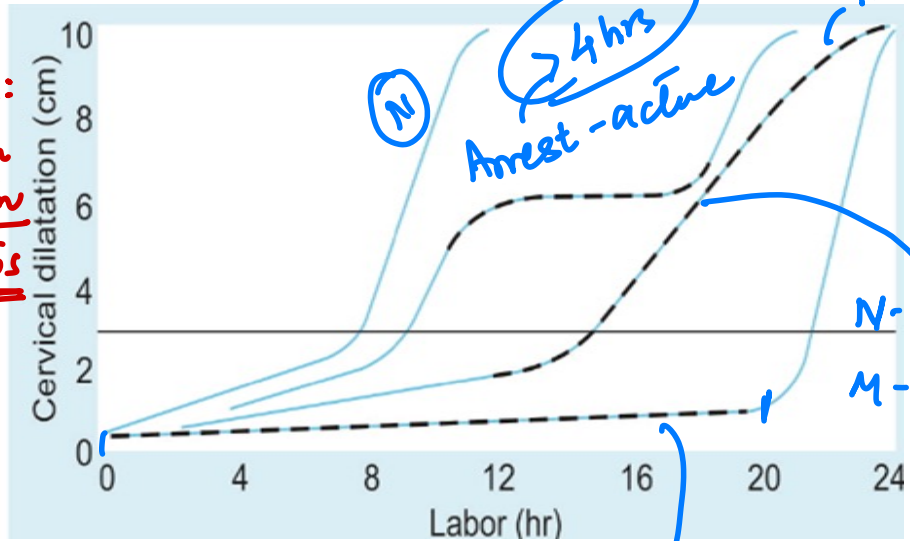


- I- intact
- C- clear
- B- bloody
- M- meconium
- A- absent

↳ CPD → LSCS

1st - on alert line

good:   
 > 3 in 10 min   
 > 45s



WHO simplified

N- < 1.2cm/hr   
 M- < 1.5cm/hr

Latent - prolonged N - > 20hrs   
 M - > 14hrs

# Labour care guide-Next generation partograph

## WHO LABOUR CARE GUIDE

Active labour diagnosis (Date)  $\geq 5cm$  dil<sup>n</sup>

Name: \_\_\_\_\_ Parity: \_\_\_\_\_ Labour onset: \_\_\_\_\_

Ruptured membranes (Date): \_\_\_\_\_ Time: \_\_\_\_\_ Risk factors: \_\_\_\_\_

	Time	ACTIVE FIRST STAGE												SECOND STAGE				
		Hours	1	2	3	4	5	6	7	8	9	10	11	12	1	2		
<b>ALERT</b>																		
SUPPORTIVE CARE	Companion	N																
	Pain relief	N																
	Oral fluid	N																
	Posture	SP																
BABY	Baseline FHR	< 110, ≥ 160																
	FHR deceleration	L																
	Amniotic fluid	M+++ , B																
	Fetal position	R, T <i>OP/trans</i>																
	Caput	+++																
	Moulding	+++																
WOMAN	Pulse	< 60, ≥ 120																
	Systolic BP	< 80, ≥ 140																
	Diastolic BP	≥ 90																
	Temperature °C	< 35.0, ≥ 37.5																
	Urine	P+, A++																
CONTRACTIONS	Contractions per 10 min	≤ 2, ≥ 5 <i>tachysystole</i>																
	Duration of contractions	< 20, > 60																
LABOUR PROGRESS	Cervix (Plot X)	10																
		9	≥ 2h															
		8	≥ 2.5h															
		7	≥ 3h															
		6	≥ 5h															
Descent (Plot O)	5																	
	4																	
	3																	
	2																	
	1																	
0																		

MEDICATION	Oxytocin (IU/L, drops/min)																
	Medicine																
	IV fluids																
SHARED DECISION-MAKING	ASSESSMENT																
	PLAN																
INITIALS																	

INSTRUCTIONS: CIRCLE ANY OBSERVATION MEETING THE CRITERIA IN THE 'ALERT' COLUMN. ALERT THE SENIOR MIDWIFE OR DOCTOR AND RECORD THE ASSESSMENT AND ACTION TAKEN. IF LABOUR EXTENDS BEYOND 12 H, PLEASE CONTINUE ON A NEW LABOUR CARE GUIDE.

Abbreviations: Y - Yes, N - No, D - Declined, U - Unknown, SP - Supine, MD - Mobile, E - Early, L - Late, V - Variable, I - Intact, C - Clear, M - Meconium, B - Blood, A - Anterior, P - Posterior, T - Transverse, P+ - Protein, A+ - Astone

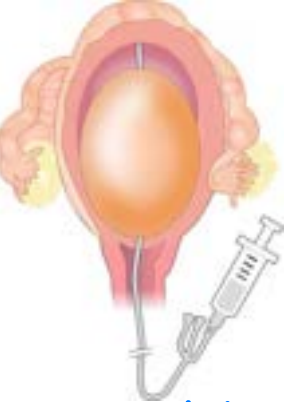
The Labour Care Guide creates a positive feedback and decision-making loop, as health personnel are encouraged to regularly:

- Assess** → assess the well-being of woman and her baby, and progress of labour
- Record** → document labour observations
- Check reference threshold** → compare labour observations with reference values in the "Alert" column
- Plan** → decide whether and what interventions are required, in consultation with the woman, and document accordingly

*Supine Hypotension Sx* *Lt lat decubiles*



Bimanual



Bakri balloon



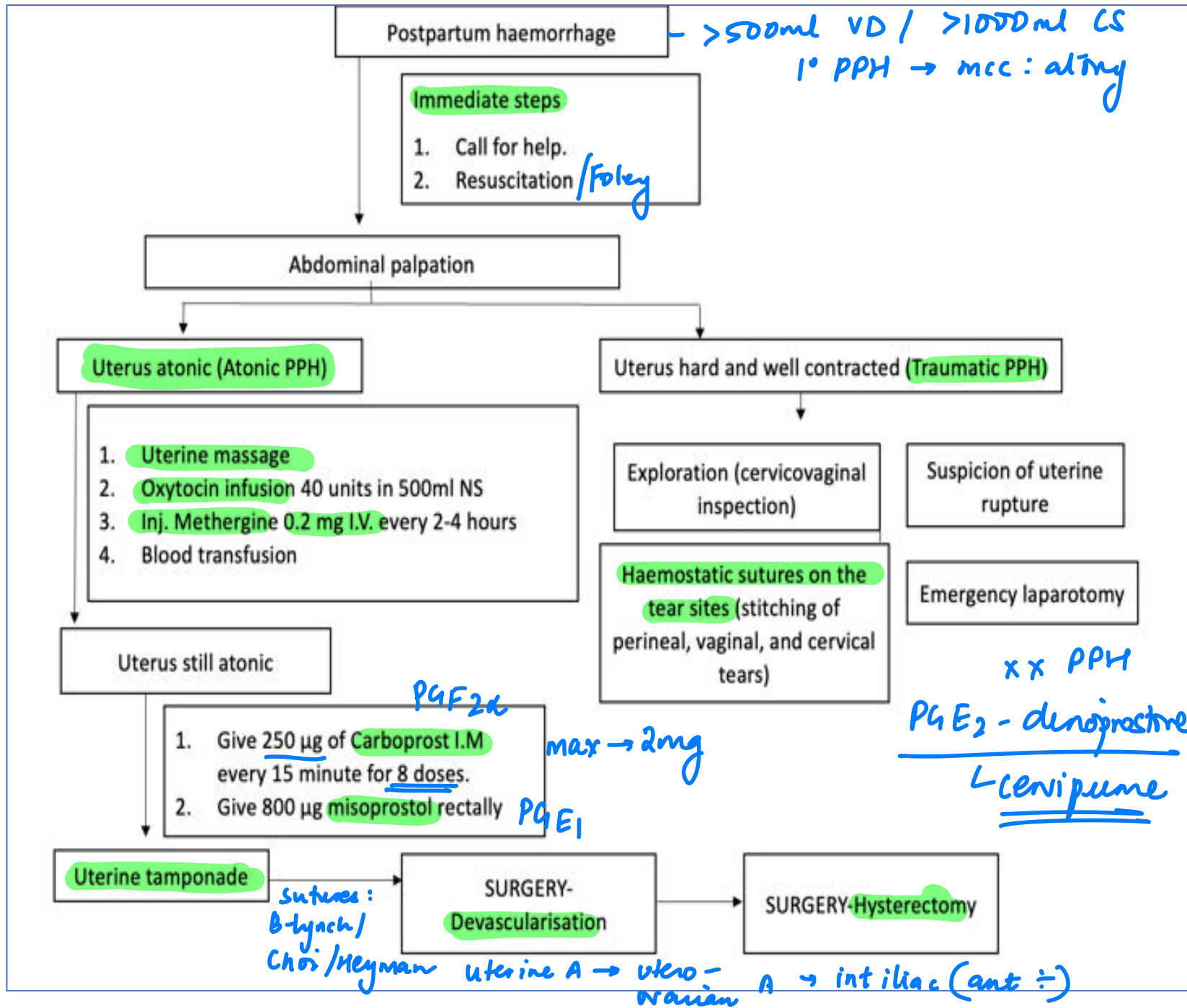
Condom catheter

**Methergin**

CI: Hypertension, PAD, Rh isoimmunization, Heart disease, twins

**PGF2α**

CI: Asthma

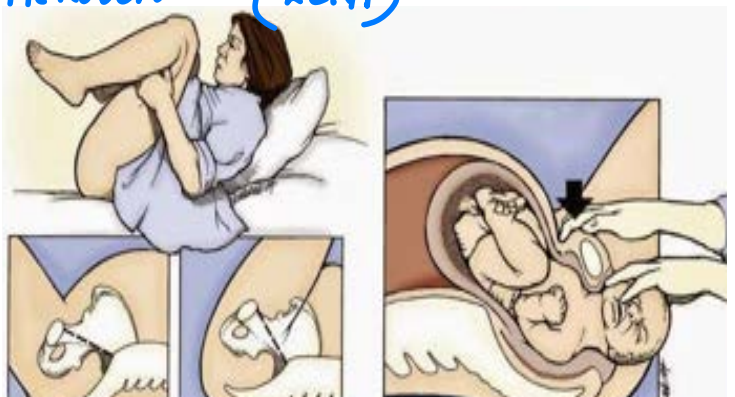


# COMPLICATIONS

## SHOULDER DYSTOCIA

Help: call for help
Evaluate for episiotomy
Legs: <b>McRoberts position</b>
Pressure: <b>Suprapubic pressure</b>
Rotate <b>posterior shoulder</b> <i>Wood's corkscrew</i>
Roll the patient on to all fours <i>Gaskin's</i>
Put baby back -> LSCS <i>Zavanelli</i>

*- meralgia  
McRobert's (LCNT)*



## Uterine Inversion

Sudden severe pain abdomen + **Shock** + *neurogenic + hypovolemic*  
**Uterine fundus not palpable at umbilicus**



**STOP oxytocin**  
**Manual replacement:**  
**Johnson's technique**

## Amniotic fluid embolism

**Unexplained shock** + **Difficulty breathing** within 30min of delivery + **DIC** + No fever

## Uterine rupture

- Intense pain
- H/o C-sec / myomectomy
- **Fetal parts palpable superficially**

### Changes in Uterus after delivery

Undergoes involution (0.5 inch or 1 finger breadth per day)

Immediately after delivery	Uterus is at the <b>lower border of the umbilicus (20 weeks)</b>
Day 1	1 finger breadth below the umbilicus
Day 2	<b>2 finger breadths below the umbilicus</b>
At the end of 2 weeks	No longer palpable abdominally (It becomes a <b>pelvic organ</b> )
At the end of <b>6-8 weeks</b>	<b>Pre-pregnant sized uterus</b>

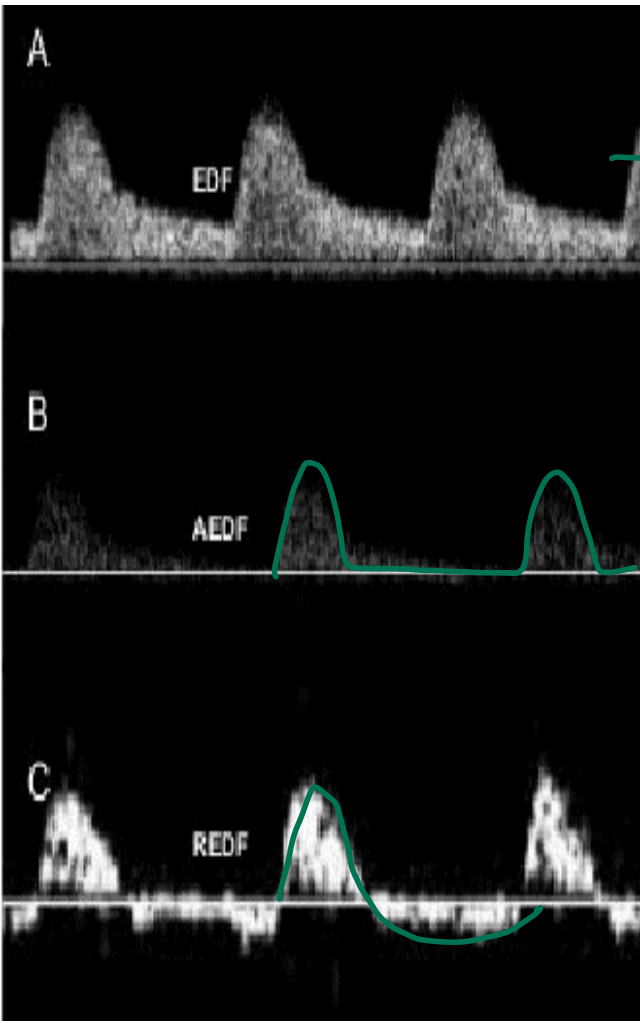


*vulval hematoma  
- compression →  
internal pudendal A embolism*

# DOPPLER IN PREGNANCY

## UMBILICAL ARTERY

IUGR



(N)

1st - S/D (↑)

absent EDF  
    > 34wks - TDP  
    < 34wks - Steroids  
                  ↓  
                  TDP

Reversal EDF  
    > 32wks - TDP  
    < 32wks - Steroids  
                  ↓  
                  TDP

## UTERINE ARTERY

predict early-onset  
preclampsia

## MCA

- anemia
- IUGR

"brain sparing"

MCA - PSV ↑↑

# MODIFIED BISHOP SCORE

*Cervical ripening*

Cervical Feature	0	1	2	3
Cervical dilatation	< 1cm	1-2 cm	2-4 cm	> 4cm
Cervical length	4 cm	2-4 cm	1-2 cm	< 1 cm
Effacement*	< 30%	40-50%	60-70%	> 80%
Station of presenting part	-3 cm	-2 cm	-1/0 cm	+1/+2 cm
Consistency of cervix	Firm	Average	Soft	
Position of cervix	Posterior	Mid position	Anterior	

$\geq 6 \rightarrow$  ripe cx

## Induction of labour:

Dinoprostone: DOC - PG E<sub>2</sub>

Misoprostol: PG E<sub>1</sub>

Mifepristone

Oxytocin

Foley's

Stripping of membranes -  $\uparrow$  local release of PG

CI to IOL: (LSCS  $\checkmark$ )

Contracted pelvis / CPD - moulding / caput ++

PP

Previous Classical Caesarean

VVF repair

Active HSV / viral warts

Ca cervix

Malpresentations

Cord prolapse

Vasa previa

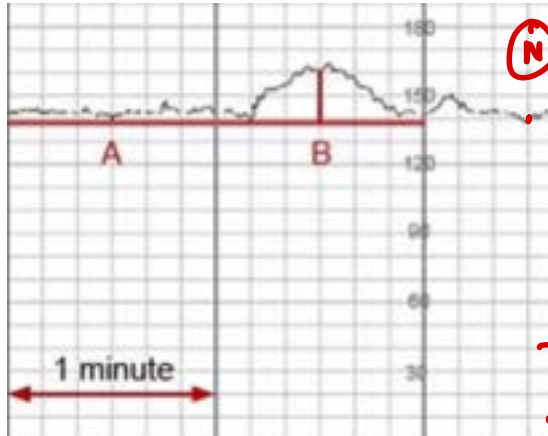
# FETAL MONITORING

Manning score → 30 min



CTG  
feto  
intra-p

① DFMC → NST <sup>20min</sup> - Reactive

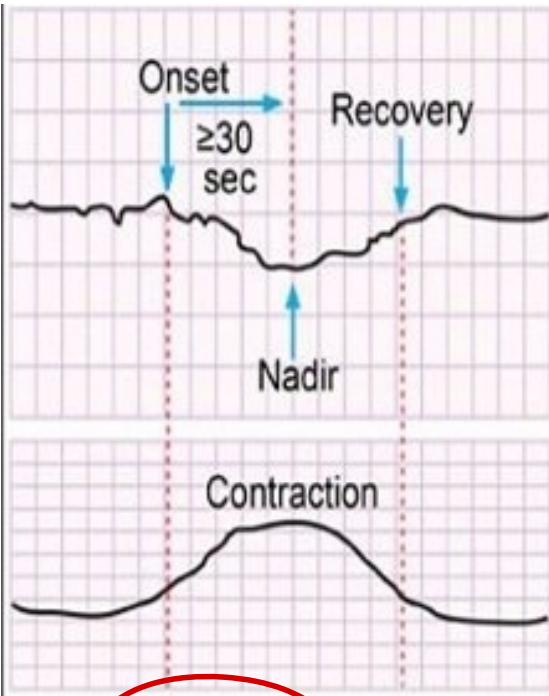


② FHR: 110-160 bpm  
- accelerations  
≥ 2 - 15s - >15bpm  
in 20min  
- No decelerations  
- beat-beat variability  
5-15bpm

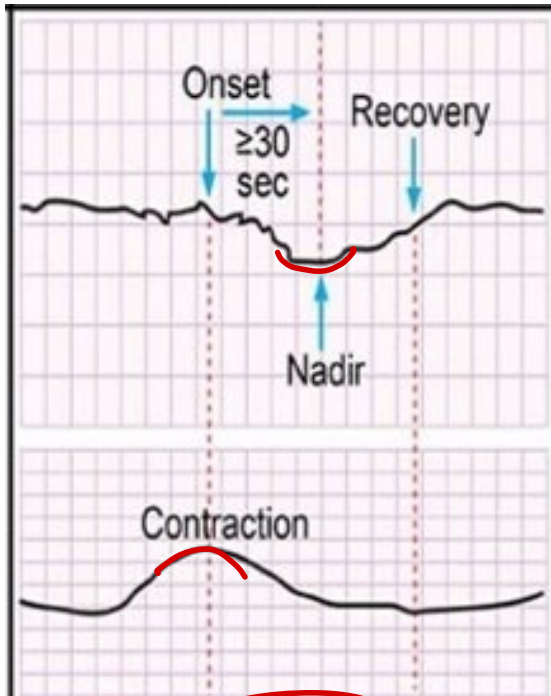
Modified BPP  
↓ ⊗ 20min  
Repeat NST

Biophysical Parameter	Normal	Abnormal
Qualitative AFI ➤	AFI + between <u>10 and 20</u>	AFI less than 10 or more than 20
Reactive FHR NST	Two episodes of FHR acceleration of ≥ 15 beats/minute and of at least 15 sec	Less than two episodes
Fetal tone T	At least 1 episode of active extension with return to flexion of fetal limb (s) or trunk	Either slow or absent fetal movement
Fetal breathing B	At least 1 episode of fetal breathing in 30min	Absent
Gross body movement M	At least 3 discrete body/limb movement in 30 minutes	2 or fewer episodes of body /limb movements in 30 minutes

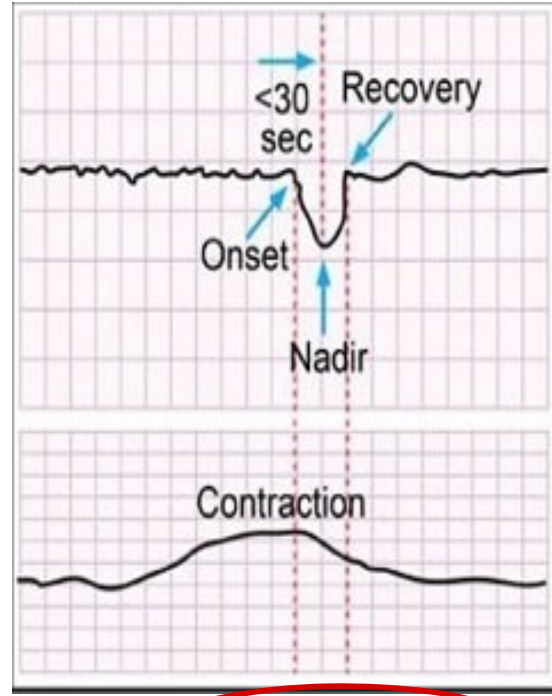
Modified BPP: NST + AFI



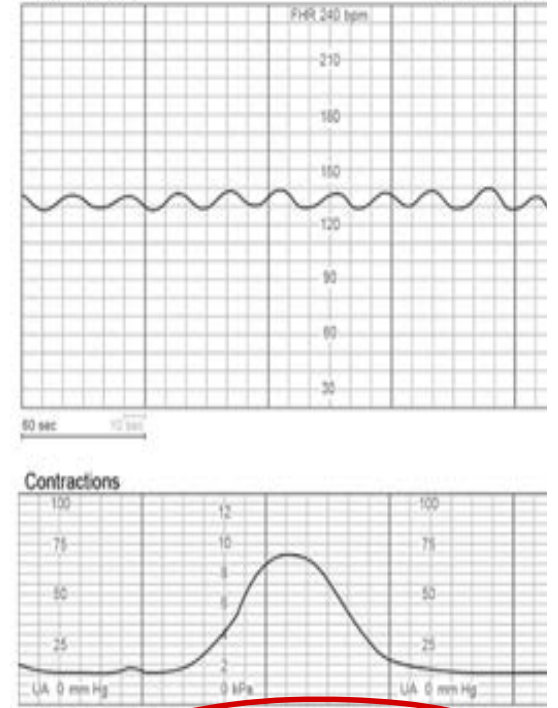
Early  
fetal head  
Compressions



Late  
Uteroplacental  
insufficiency



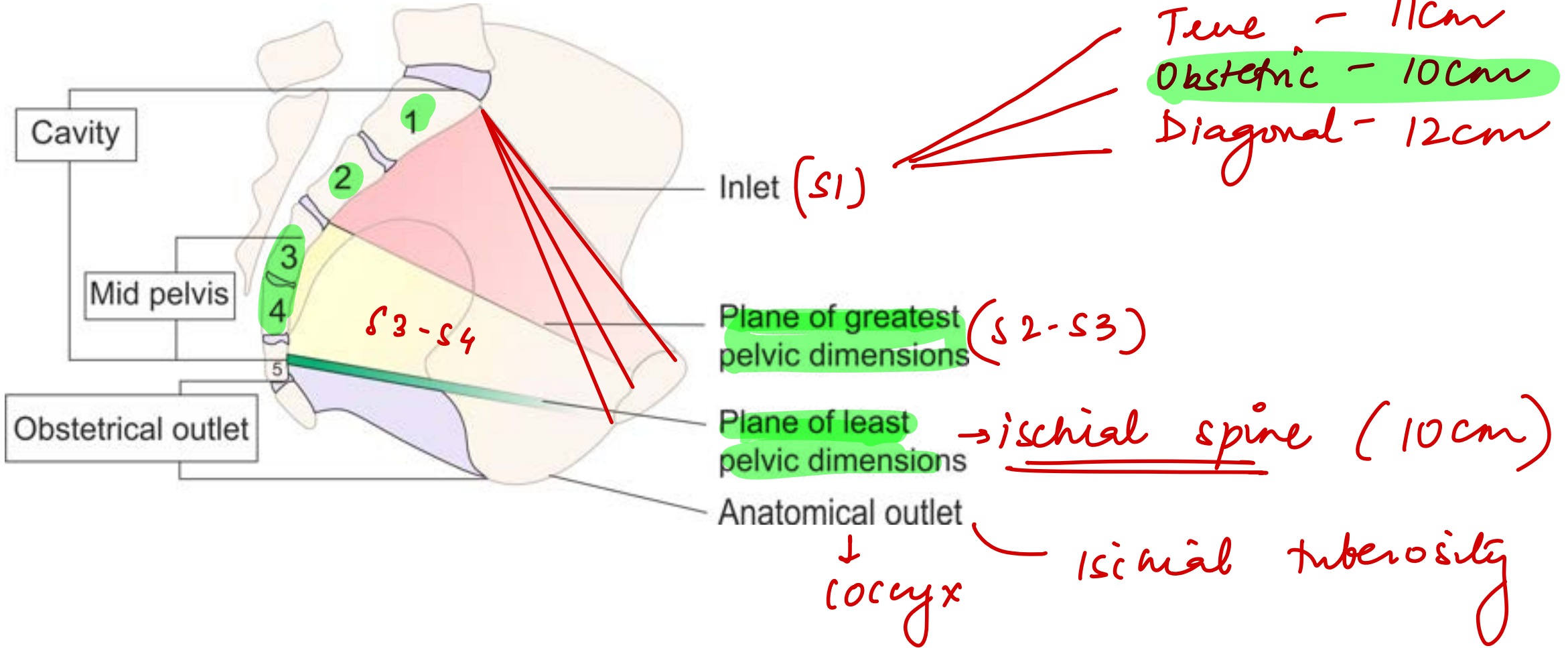
Variable  
Cord  
Compression



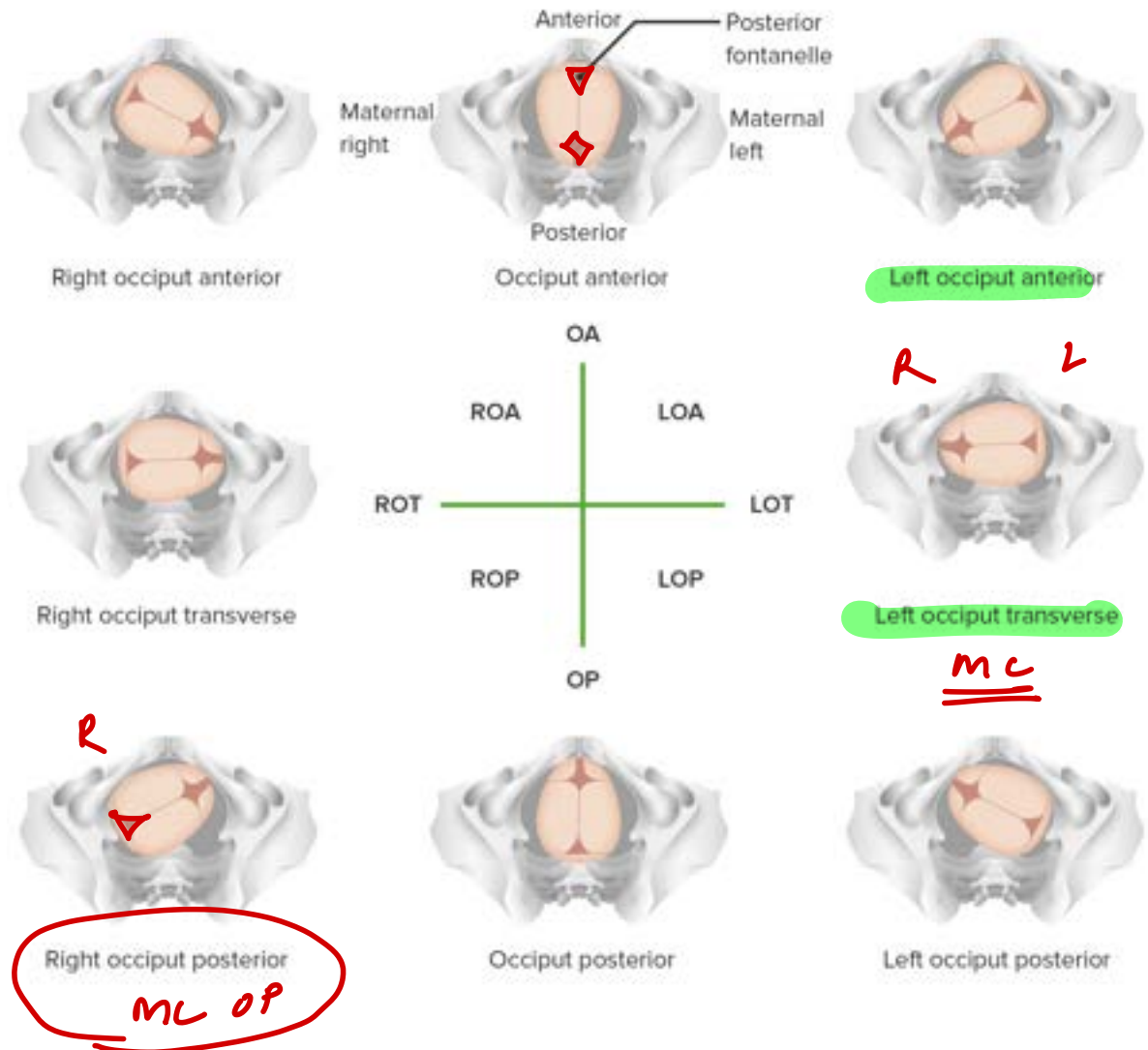
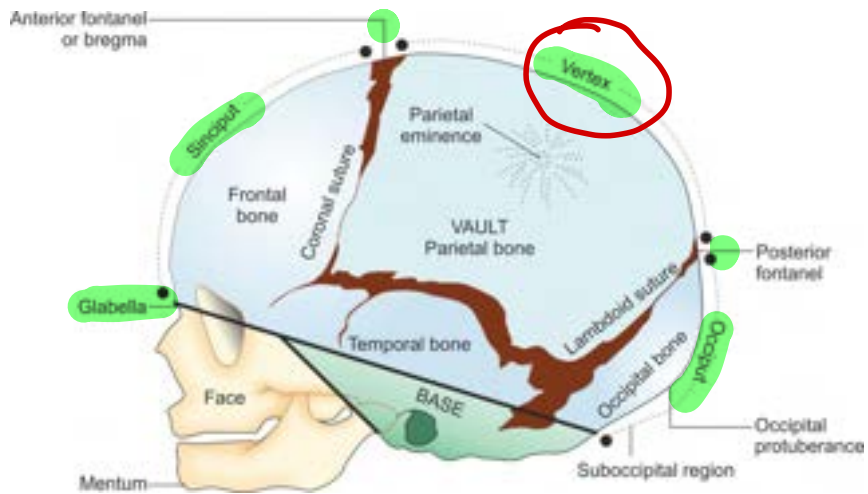
Sinusoidal  
fetal  
anemia

CTG

# PELVIC DIAMETERS

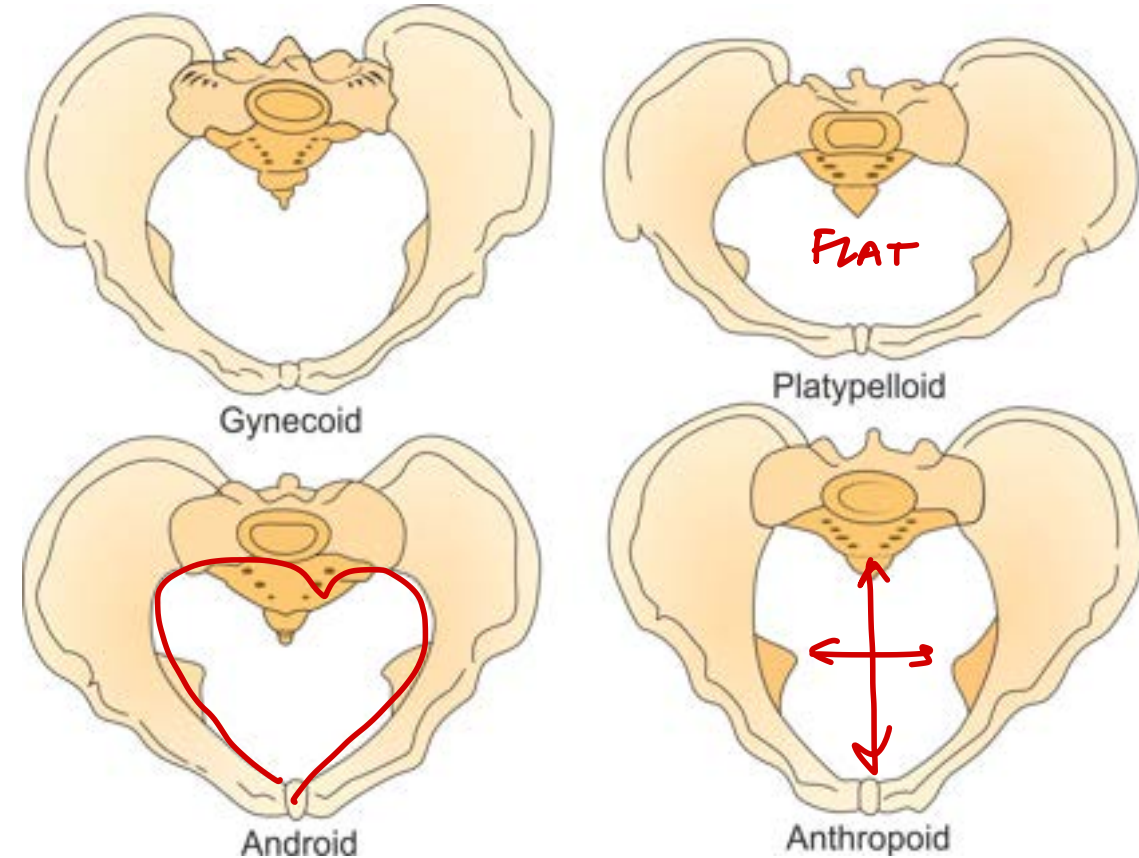


# FETAL SKULL DIAMETERS



Diameter	Attitude of the head	Presentation
Suboccipitobregmatic 9.5 cm	Complete flexion	<u>Vertex</u>
Suboccipitofrontal: 10 cm	Incomplete flexion	Vertex
Mentovertical 14 cm	Partial extension	Brow → <u>LSCS</u>
Submentobregmatic 9.5 cm	Complete extension	Face

# TYPES OF PELVIS



MC: *Gynecoid*  
 Least common: *Platypelloid* → *Brow*  
 AP > transverse: *Anthropoid*  
 Face to pubis: *Anthropoid*  
 DTA: *Android*

*moulding (+ +)*

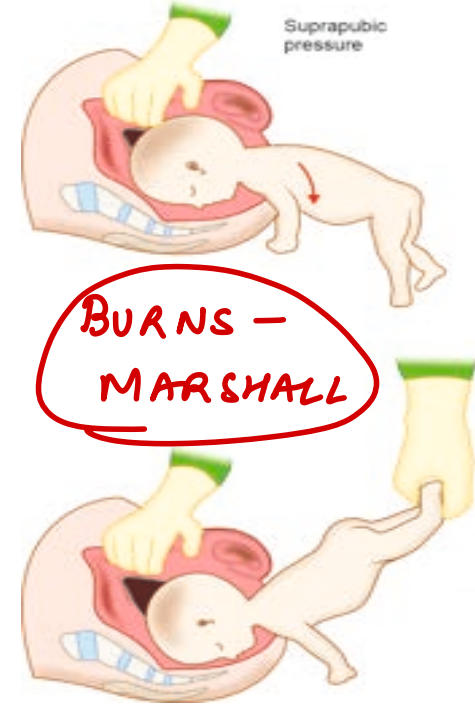
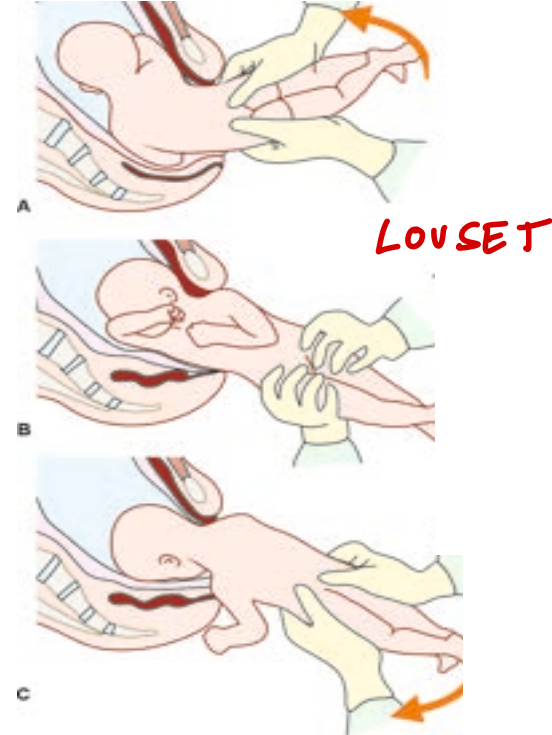
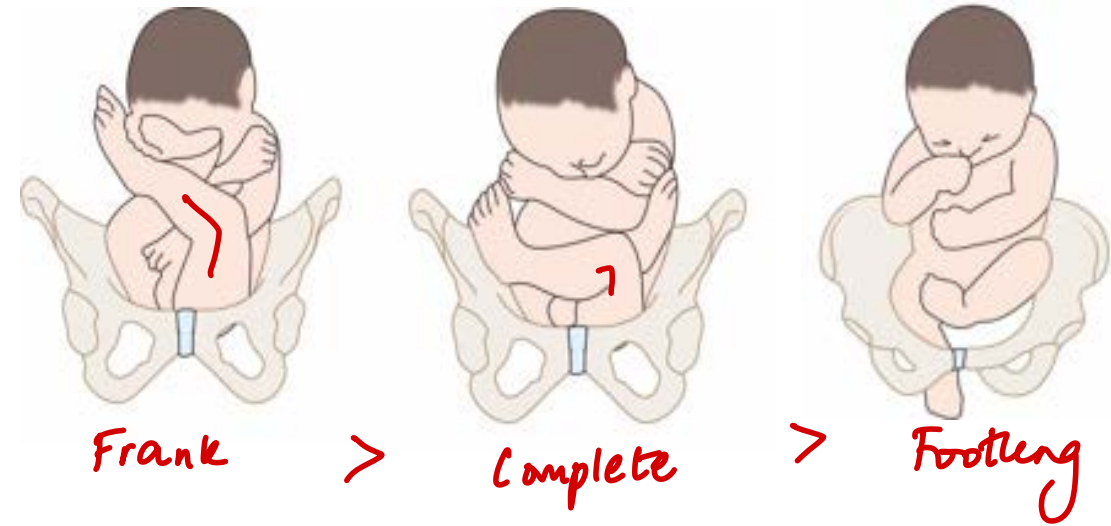
**Infra-umbilical flattening and FHS in flank:**

OP position — *Anthropoid* → *Direct OP /*  
 Management: *Android* → *ROP Persist OP*  
*wait & watch*

Cord prolapse “Bag of worms” next:

- Prepare for **urgent LSCS**
- Tredelenburg** position
- Relieve pressure off cord: Lift presenting part
- Don't touch cord**

# Breech and transverse

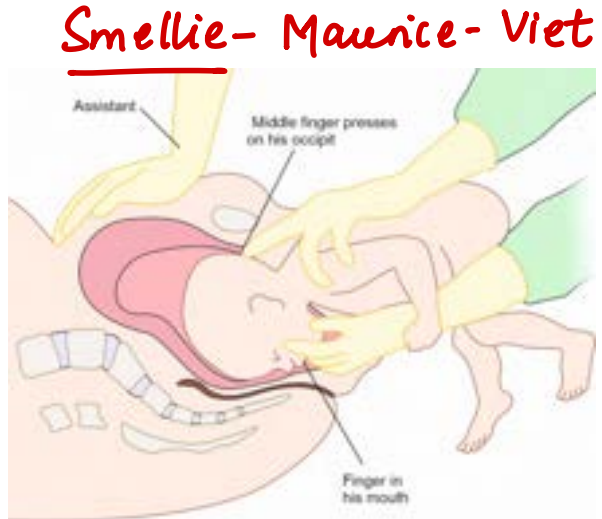
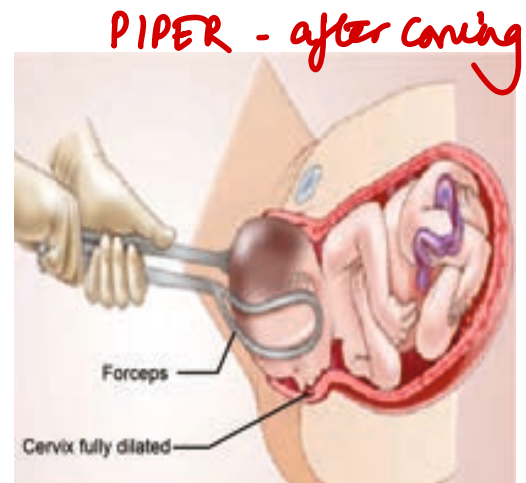


ECV : LR

>36wks, singleton with breech/transverse (not in knee or footling), adequate liquor, membranes intact, normal FHR, no placenta previa: ECV  $\xrightarrow{x}$  ECV after 1wk

Second twin in transverse lie, no previous LSCS:

IPV -OT



# CARCINOMA CERVIX

↑ early sexual / ↑ sexual / HIV

condyloma acuminata

## Screening (PAP Smear)

- Start at: 21yr
- Pap smear: 3 Yearly
- Co-testing: 5 Yearly (Age > 30yr) (Pap + HPV DNA)
- Immunocompromised: annually
- Stop when: 65yr (10yrs -ve)

WHO: 2030-90:70:90 — 90% ca cx R<sub>0</sub>  
 90% vaccinated by 15yr — 70% screening 35-45yr

HPV: Low-risk

6, 11

High-risk

16, 18, 31, 33  
 45, 52, 58

Gardasil-9

Cervavac (Indian) → 6, 11, 16, 18

E6: p53 ⊖

E7: RB ⊖

L1: vaccine

## HPV WHO SAGE PROTOCOL:

9-14yr — 1/2 dose

14-21yr — 1/2 dose

> 21yr — 2 doses (6mm apart)

## PAP STAIN:

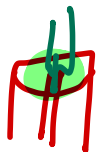
- Eosin Y
- orange-G6
- Hematoxylin
- light green SF

Fixative: 95% alcohol



Conventional

Ayre's



LBC

Cervical broom

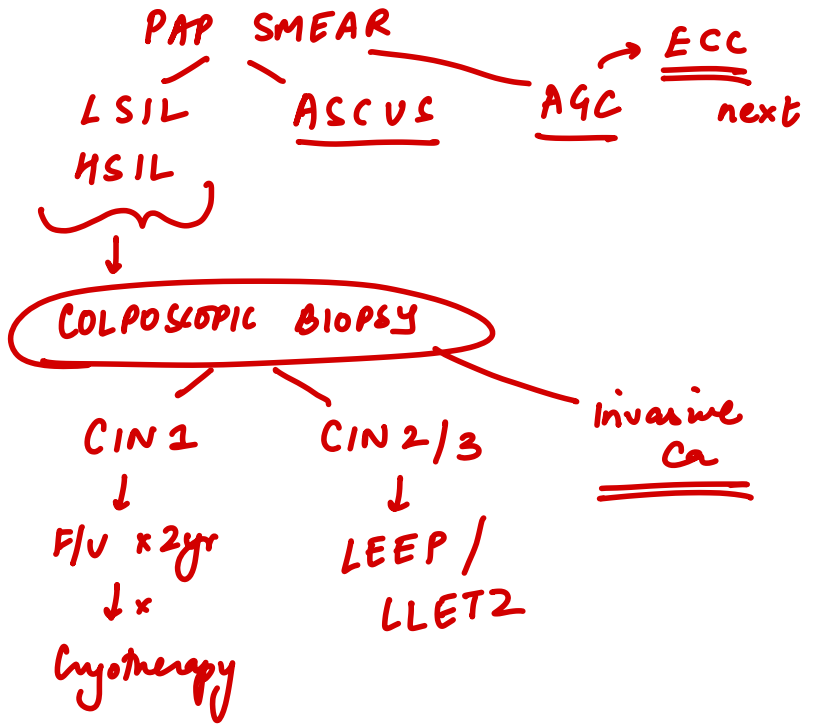
↑ Sn

Fixative: methanol

Then prep / Sure Path

Resource poor

VIA / VILI  
 (acetic acid) (Lugol's iodine)



Conisation - discrepancy  
 Invasive cancers

---

Postcatal bleed + Mass →  
 Colposcopic bx  
 4 Quadrant bx

# CA CERVIX

Stage	Description
IA	Invasive carcinoma that can be diagnosed only by microscopy
IA1	Measured stromal Invasion <3mm in depth
IA2	Measured stromal Invasion ≥3mm and <5mm in depth
IB1	Invasive carcinoma < 2cm
IB2	Invasive carcinoma ≥2cm and < 4cm
IB3	Invasive carcinoma ≥4cm
IIA	Involvement limited to the upper two-thirds of the vagina
IIA1	Invasive carcinoma < 4cm
IIA2	Invasive carcinoma ≥4cm
IIB	With parametrial involvement but not to the pelvic wall
IIIA	The carcinoma involves the lower third of the vagina
IIIB	Extension to the pelvic wall and/or hydronephrosis or nonfunctioning kidney
IIIC1	Pelvic lymph node metastasis only
IIIC2	Para-aortic lymph node metastasis
IVA	Spread to adjacent pelvic organs
IVB	Spread to distant organs

full IB1

Radical trachylectomy

Sx → IA1/IA2  
 ↓ IB1, IB2  
 IIA1 <4cm

CT-RT

(V)

(P)

V

(CP)

uremia - MCC of death

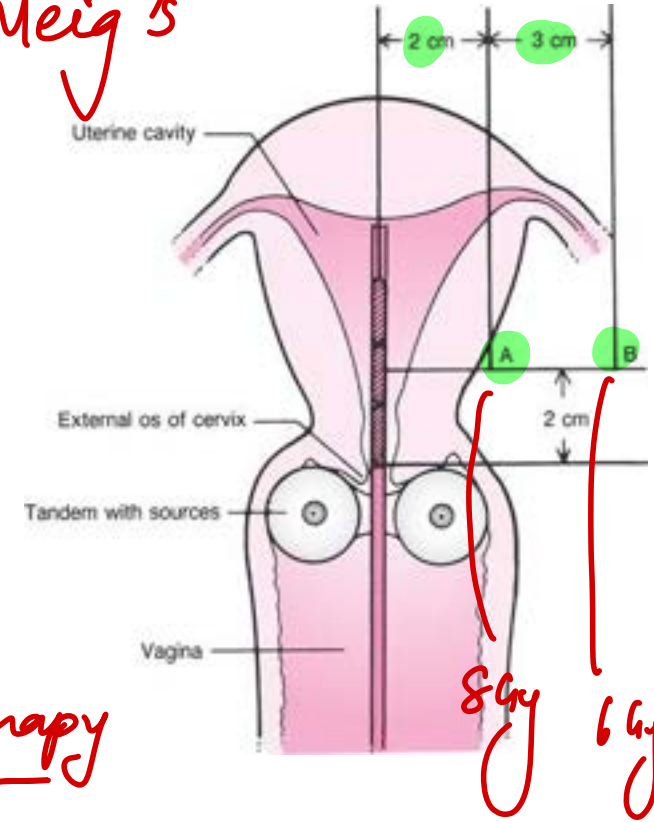
→ inguinal LN



# Types of Hysterectomy

*Simple / Extrafascial      Mod Radical / Wertheim's      Radical / Meigs*

<b>Take out covering fascia of uterus</b>	<b>Parametrium removed up to level of ureter</b>	<b>Parametrium removed lateral to the ureter also</b>
<b>Uterine vessels ligated close to uterus</b>	<b>At the level of <u>ureter</u></b>	<b>At the origin from internal iliac vessels</b>
<b>Uterosacrals ligated close to uterus</b>	<b>Midway to rectum</b>	<b>Near rectum</b>
<b>Vaginal cuff not removed</b>	<b>1-2cm of vagina removed</b>	<b>&gt;2cm vagina removed</b>



*RT -> Brachytherapy*

# CA Endometrium

Stage	Description
<b>I</b>	<b>Tumor confined to the uterus</b>
<b>IA</b>	<b>&lt;50% invasion of the myometrium</b>
<b>Ib</b>	<b>≥50% invasion of the myometrium</b>
<b>II</b>	<b>Tumor invades the cervical stroma but does not extend beyond the uterus</b>
<b>III</b>	<b>Local or regional spread of tumor</b>
<b>IIIA</b>	<b>Serosal or adnexal invasion</b>
<b>IIIB</b>	<b>Vaginal or parametrial involvement</b>
<b>IIIC</b>	<b>Metastasis to pelvic or paraaortic lymph nodes</b>
<b>IIIC1</b>	<b>Pelvic lymph node involvement</b>
<b>IIIC2</b>	<b>Paraaortic lymph node involvement</b>
<b>IV</b>	<b>Extension to the pelvic wall, lower one-third of the vagina, or hydro-nephrosis or nonfunctioning kidney</b>
<b>IVA</b>	<b>Invasion of bladder or bowel mucosa</b>
<b>IVB</b>	<b>Distant metastases, including involvement of inguinal lymph nodes</b>

Rp - TAH + BSO

(RT adjuvant)

LVSI

LN +

Grade > 2

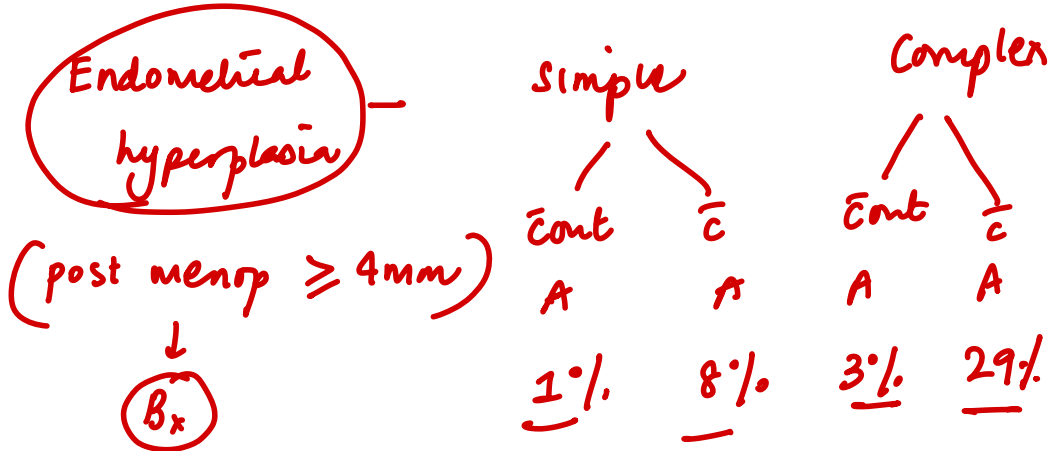


**2023 Figo Stage****Defining Criteria**

IA1	non-aggressive histological type limited to the endometrium or an endometrial polyp
IA2	non-aggressive histological type involving <50% myometrium, with no/focal LVSI
IA3	low-grade EEC limited to the uterus and ovary
<i>IA<sub>m</sub>POLEmut</i>	<i>POLEmut EC, confined to the uterine corpus or with cervical extension, regardless of LVSI or histological type</i>
IB	non-aggressive histological type involving ≥50% myometrium, and with no/focal LVSI
IC	aggressive histological type limited to the endometrium or an endometrial polyp
IIA	non-aggressive histological type with invasion of the cervical stroma
IIB	non-aggressive histological type with substantial LVSI
IIC	aggressive histological type with any myometrial infiltration
<i>IIC<sub>m</sub>p53abn</i>	<i>p53abn EC, confined to the uterine corpus with any myometrial infiltration, with or without cervical invasion, and regardless of LVSI or histological type</i>
IIIA1	spread to ovary or fallopian tube (except if it meets the Stage IA3 criteria)
IIIA2	involvement of uterine subserosa/serosa
IIIB1	metastasis or direct spread to the vagina and/or the parametria
IIIB2	metastasis to the pelvic peritoneum

type 1 → 😊 - KRAS / PTEN - endometrial

type 2 → 😞 - p53 - papillary / serous



M<sub>x</sub> — cont atypia — Mucina / MPA

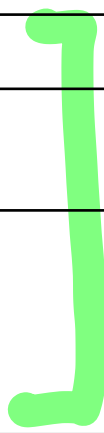
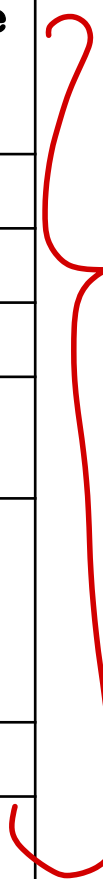
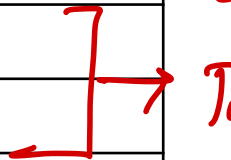
          c atypia — Simple hysterectomy

# CA Ovary

Stage I	Tumor limited to the ovaries or fallopian tubes
I A	Tumor limited to <b>one ovary</b> (capsule intact) or <b>fallopian tube</b>
I B	Tumor limited to <b>both ovaries</b> (capsules intact) or <b>fallopian tubes</b>
I C	Tumor limited to one or both ovaries or fallopian tubes, with any of the following: Stage IC 1: <b>Surgical spill</b> Stage IC2: <b>Capsule ruptured</b> before surgery, or tumor on ovarian or fallopian tube surface Stage IC3: <b>Malignant cells in the ascites or peritoneal washings</b>
II A	Extension and/or implants on the <b>uterus</b> and/or <b>ovaries</b> and/or <b>fallopian tubes</b> .
II B	Extension to other <b>pelvic intraperitoneal tissues</b>
III A	Positive (cytologically or histologically proven) <b>retroperitoneal</b> lymph nodes only
III B	Macroscopic <b>peritoneal metastasis</b> beyond the pelvis <b>up to 2 cm</b> in greatest dimension, with or without metastasis to the retroperitoneal lymph nodes
III C	Macroscopic <b>peritoneal metastasis</b> beyond the pelvis <b>more than 2 cm</b> in greatest dimension Tumor to the <b>capsule of liver and spleen</b> without parenchymal involvement of either organ
Iv A	Pleural effusion with positive cytology
Iv B	<b>Parenchymal metastases</b> and metastases to extra-abdominal organs (including <b>inguinal lymph nodes</b> and lymph nodes outside of the abdominal cavity)

Sx Staging:  
 TAH + BSO +  
 debulking Sx

+ adj CT  
 (BEP)



Epithelial - mc: Serous (Psammoma)

Pseudomyxoma peritonei- Mucinous  
Walthard cell rests- transitional cells

ovary  
appendix  
Brenner tumor  
coffee bean N

MC germ cell tumor: Mature teratoma / Dermoid

MC malignant germ cell tumor: Dysgerminoma cyst

AFP- Yolk sac = Endodermal

HCG- CCA

CD30- embryonal ca

LDH, PLAP, HCG, OCT3/4, NANOG- Dysgerminoma

Estrogenic sex-cord stromal tumor: Granulosa cell tumor  
PMB / precocious puberty

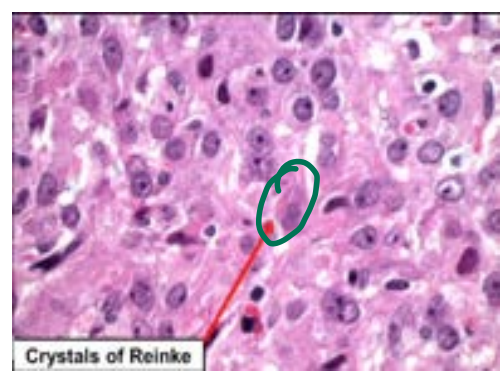
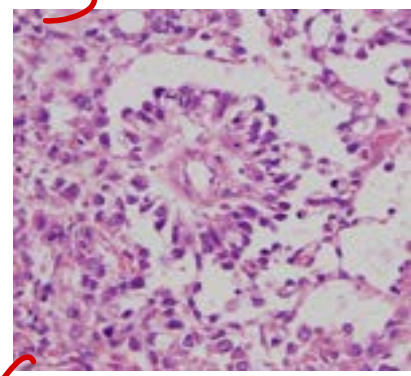
Call-Exner bodies, FOXL2, Inhibin B-

Virilising sex-cord stromal tumor: Arrhenoblastoma - Sertoli-Leydig

Reinke crystalloids- Leydig cell

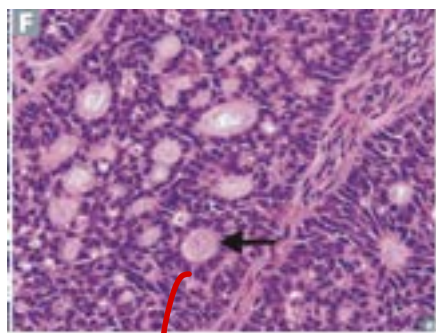
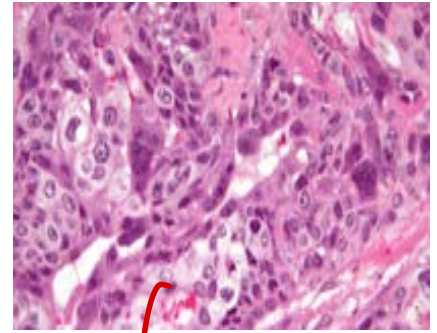
Meig syndrome- Fibroma-thecoma (solid)

pleural effusion  
ascites



YST Schiller-Duval

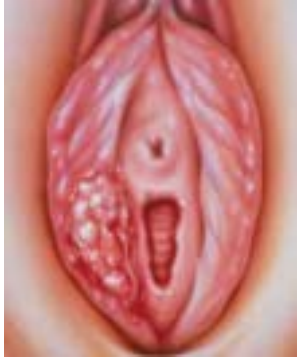
Leydig



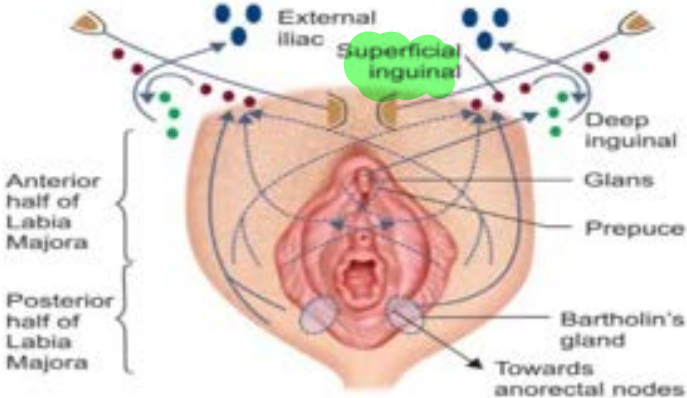
syncytiotrophoblasts

Call Exner bodies

# Ca vulva



Keyes punch bx



Direct channel —————>  
Intercommunicating channel - - - - ->

Sentinel - inguinal LN

TNM	FIGO stages	Definition
T1a	IA	Lesions 2 cm or less in size, with stromal invasion <1.0 mm
T1b	IB	Lesions more than 2 cm size or any size with stromal invasion >1.0 mm,
T2	II	Extension to lower 1/3 urethra, vagina, anal involvement
T3	IVA	Extension to any of the following: upper 2/3 urethra or vagina, bladder mucosa, rectal mucosa or fixed to pelvic bone
<b>Regional lymph nodes (N)</b>		
N1a	IIIA	One or two node metastases, each 5 mm or less
N1b	IIIA	One lymph node metastasis 5 mm or greater
N2a	IIIB	Three or more lymph node metastases each less than 5 mm
N2b	IIIB	Two or more lymph node metastases 5 mm or greater
N2c	IIIC	Lymph node metastasis with extracapsular spread
N3	IVA	Fixed or ulcerated regional lymph node metastasis
<b>Distant metastasis (M)</b>		
M1	IVB	Distant metastasis (including pelvic lymph node metastasis)

r/o LN ↓

WLE  
WLE + i/l LND  
Radical vulvectomy + B/L LND  
CT-RT



# HIGH-YIELD

## Teratogens

- Valproate/ Phenytoin - NTD
- ACE / ARB - Renal agenesis
- Li - Ebstein anomaly
- Misoprostol - Mobius Sx - CN 6/7<sup>th</sup>
- Isotretinoin MR/ facial anomalies
- Alcohol MR/ facial anomalies - smooth
- Warfarin chondrodysplasia punctate phalanges
- Methotrexate cloverleaf skull
- <sup>2/3</sup> Methimazole - choanal atresia / cleft lip
- Indomethacin >32wks - PAM (premature closure)
- Tetracycline - bone / teeth
- Thalidomide - Phocomelia (Flipper)
- Sulfonamides - binds to albumin → kernicterus

## Calorie Requirement increases in pregnancy

Second trimester: + 350 Kcal/day  
Third trimester: + 450 Kcal/day  
Lactation (0-6m): + 600 Kcal/day  
Lactation (6-12m): + 520 Kcal/day

## STEROIDS (<34wks)

DOC- Betamethasone 12mg x 2 - 24hrs apart  
GOI- Dexamethasone 6mg x 4 - 12hrs apart  
Reduce RDS, NEC, IVH, neonatal mortality  
Neonatal jaundice- No change

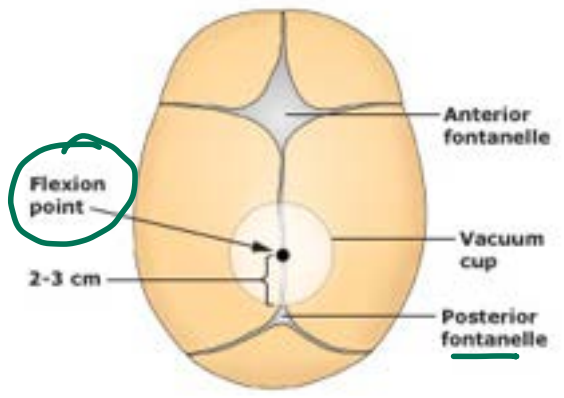
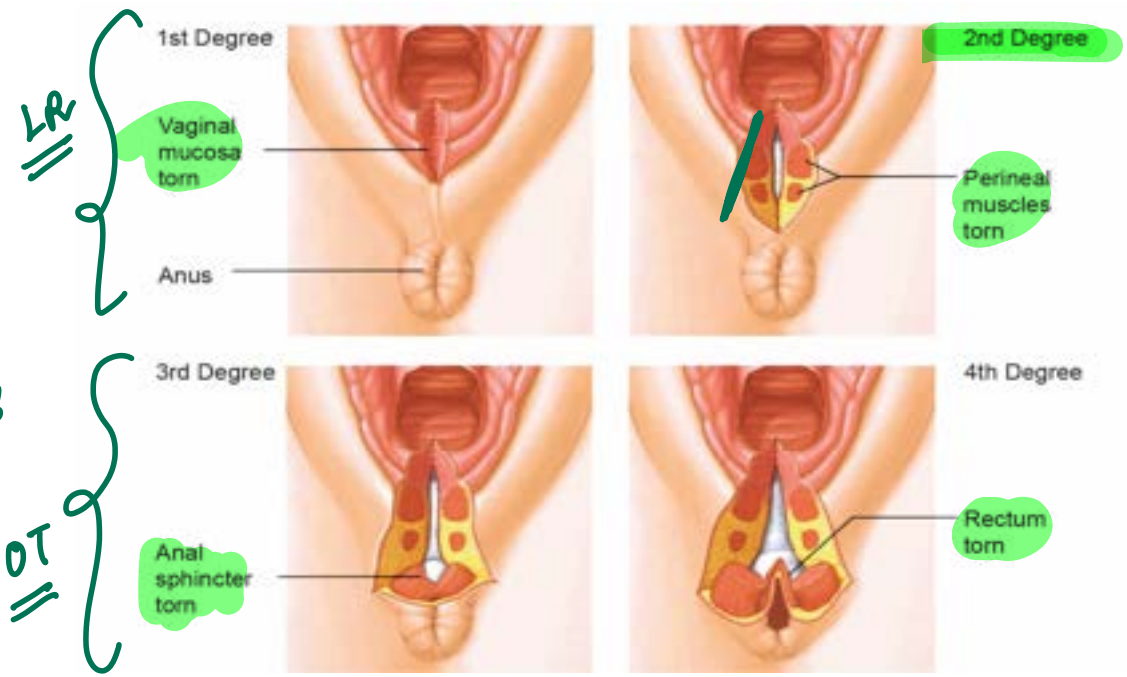


Post-VVF repair: Latzko repair  
Sexual abstinence - 3mon  
Pregnancy avoid - 1yr

Maximum amniotic fluid: 34wks  
Major contributor: urine

Normal uterocervical length: 6cm

Episiotomy  
Timing: CROWNING  
Order: MUCOSA → muscle → skin  
Type of perineal tear: 2nd  
Muscles cut: Bulbospongiosus, Levator ani,  
Superficial and deep transverse perinii  
Not cut: Ischiocavernosus, obturator



Wrigley's outlet forceps

Rotation OP

vacuum  
• full cervical dil<sup>n</sup>  
• station ≥ +2cm

# Important OBG instruments



Sim's Speculum



Cusco's self retaining



Ant vag wall retractor



Vulsellum



Hegar's dilator  
(= POG - 1)



MVA



ovum forceps (DSE)



blunt curette



Bonnie's screw



Clamp

myomectomy



Leech Wilkenson Cannula

Karman Cannula  
(= POG)

- grating
- air
- no more products

# Termination – compilation

Oligohydramnios- 39wks

Oligo + complications- 37wks

GDM/overt DM controlled diet/insulin- 39wks

GDM/overt DM not controlled- 37wks

Mild preclampsia- 37wks

✓ Severe preclampsia- 34wks

✓ Eclampsia/HELLP- immediate TOP

Rh isoimmunization nonsensitized- 39wks

Rh isoimmunization sensitized- 37wks

Placenta previa: 37wks - LSCS

Abruption placenta 34wks - 10L (x tocolytics)

Absent EDF- 34wks

Reversal of EDF- 32wks

DCDA- 38wks

MCDA- 36wks

MCMA - 34wks