OBG

Anatomy

Ovarian ligaments

Round ligament — Gubernaculum; Sampson's A / inf epig A; anteversion

Tube

Ovarian ligament — ut-ovary; utero-ovarian anastomosis

Suspensory/infundibulopelvic ligament — ovary - side walls; OVARIAN VESSELS — TORSION — congestion - venous occlusion; Doppler USG → ↑↑ impedance arterial

Uterine support (broad lig)

True ligamentous supports:

- Mackenrodts's ligaments/ **Cardinal** / transverse cervical (uterine A / ureter)
- Uterosacral ligament
- Pubocervical ligament

True muscular supports:

- Pelvic diaphragm
- Perineal body

Fallopian tube

MC site of ligation: isthmus (uniform muscle fascicles)

MC site of fertilization/ **TB** /

Ectopic: Ampulla — Hematogenous

Normal uterocervical length: 6 cm

Anteflexion: uterus - cx - 120°

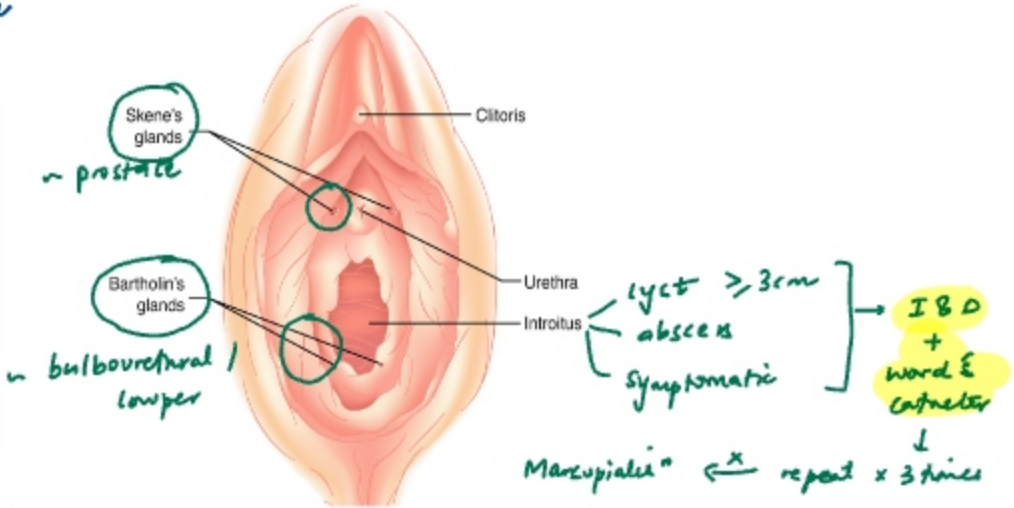
Anteversion: vagina - cx - 90° - Round lig

Nerve supply of Uterus: T10 - L1 (epidural — 1st stage) **Cervix:** S2-S3-S4 (pudendal block — 2nd stage; ischial spine ↑ N)

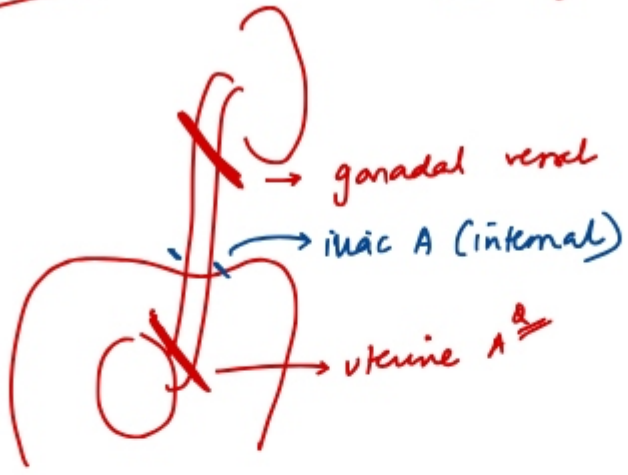
	Cervix: corpus	Vaginal pH
Before puberty	2 : 1	6-8
At puberty	1 : 2	4-4.5
Reproductive	1 : 3	
Menopause	1 : 1	6-8

Lactobacilli — glycogen - lactic acid ↑ Estradiol

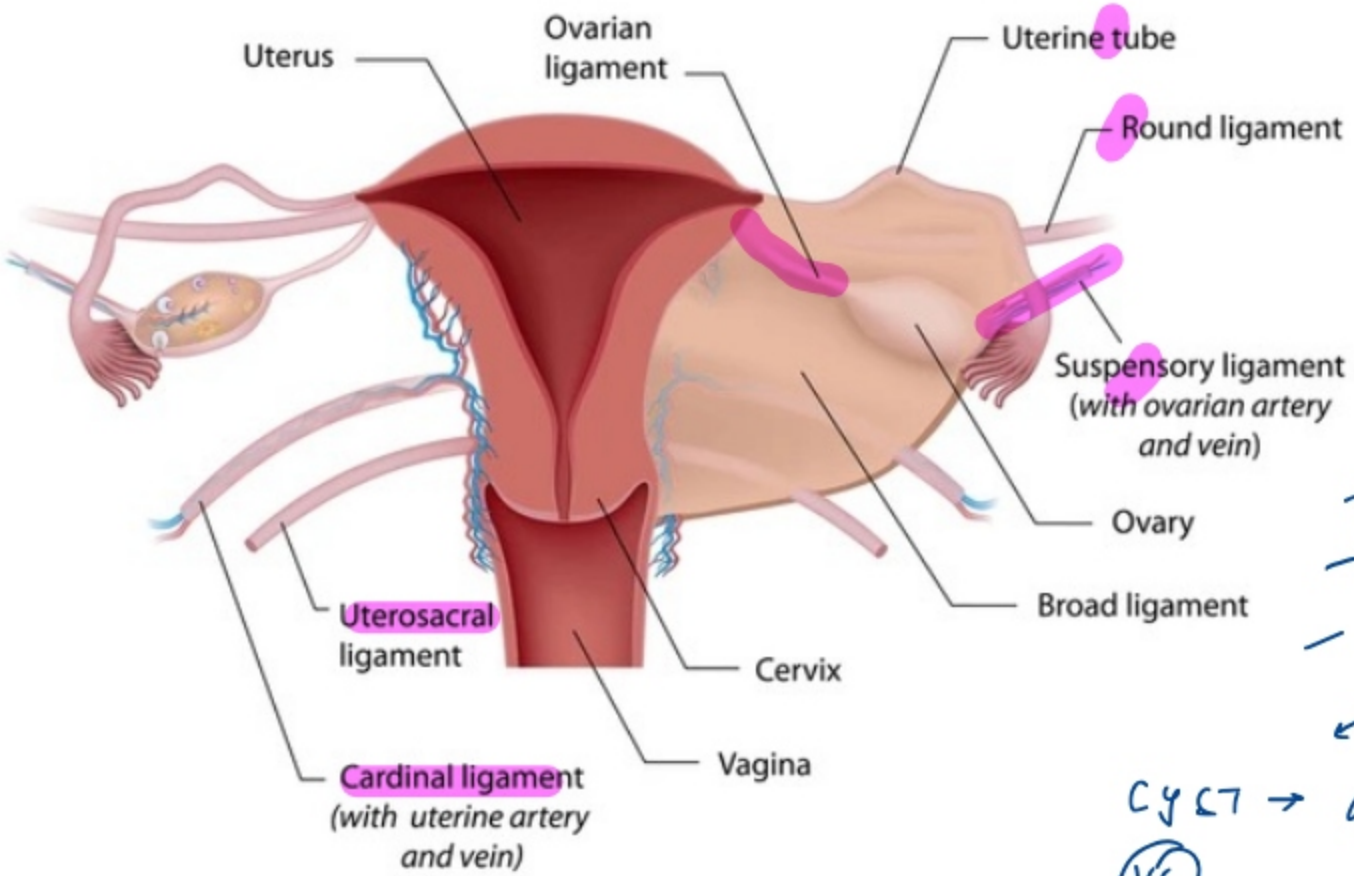
Min pH: pregnancy



Water under the bridge



Anteversion



PEG

- Paraovp
- Epoovp
- Gartner duct

↙

Cyst → ant vag wall

Vs

Cystocele → ↑cough / reducible

Prolapse

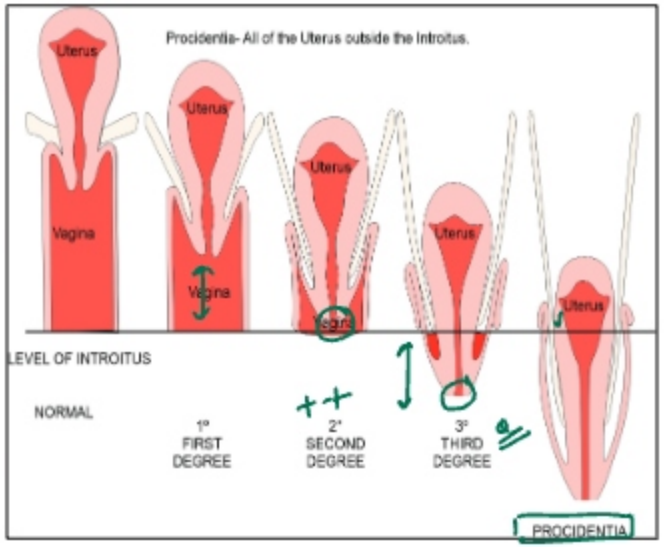
Level	Support Structures
Level I	Uterosacral ligaments and cardinal ligaments support the uterus and vaginal vault
Level II	Pelvic fascia and paracolpos which connect the vagina to the white line on the lateral pelvic wall through arcus tendinous
Level III	Levator ani muscles support the lower one-third of vagina

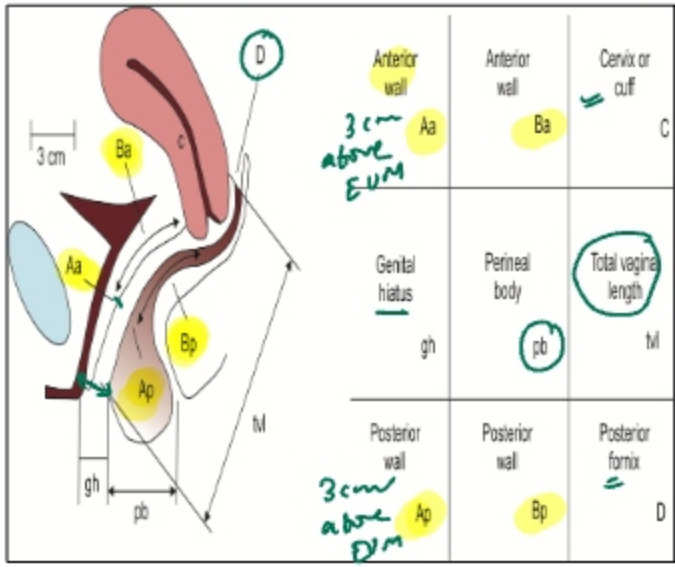
De Lancey's

L uterine / vault / enterocele

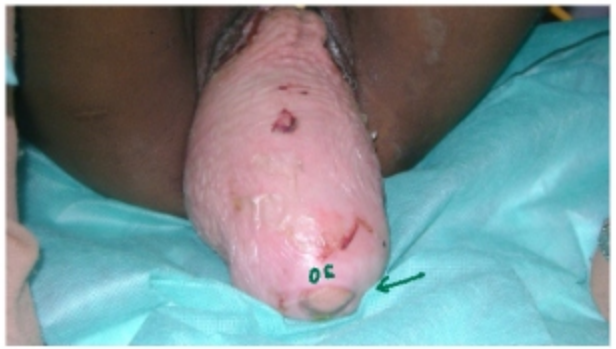
L cystocele / rectocele

L urethrocele / deficient perineum





Decubitus ulcer-venous stasis



Stage	Definition
Stage I	Most distal point is >1 cm above hymen
Stage II	within 1 cm above or below hymen
Stage III	> 1 cm below hymen
Stage IV	Complete vaginal eversion

Staging: Q - POP
Reference: Hymen
Taken during Valsalva
except: TVL Q
Not after TAH: D

Management of prolapse:

-Pregnancy / Extreme elderly: Ring pessary

-Poor surgical candidate: Obliterative (Colpocleisis) –Le Fort

-Ideal TOC: Reconstructive Ward - Mayo

Anterior colporrhaphy + Hysterectomy +Colpoperinorrhaphy

(cystocele (rectocele old.

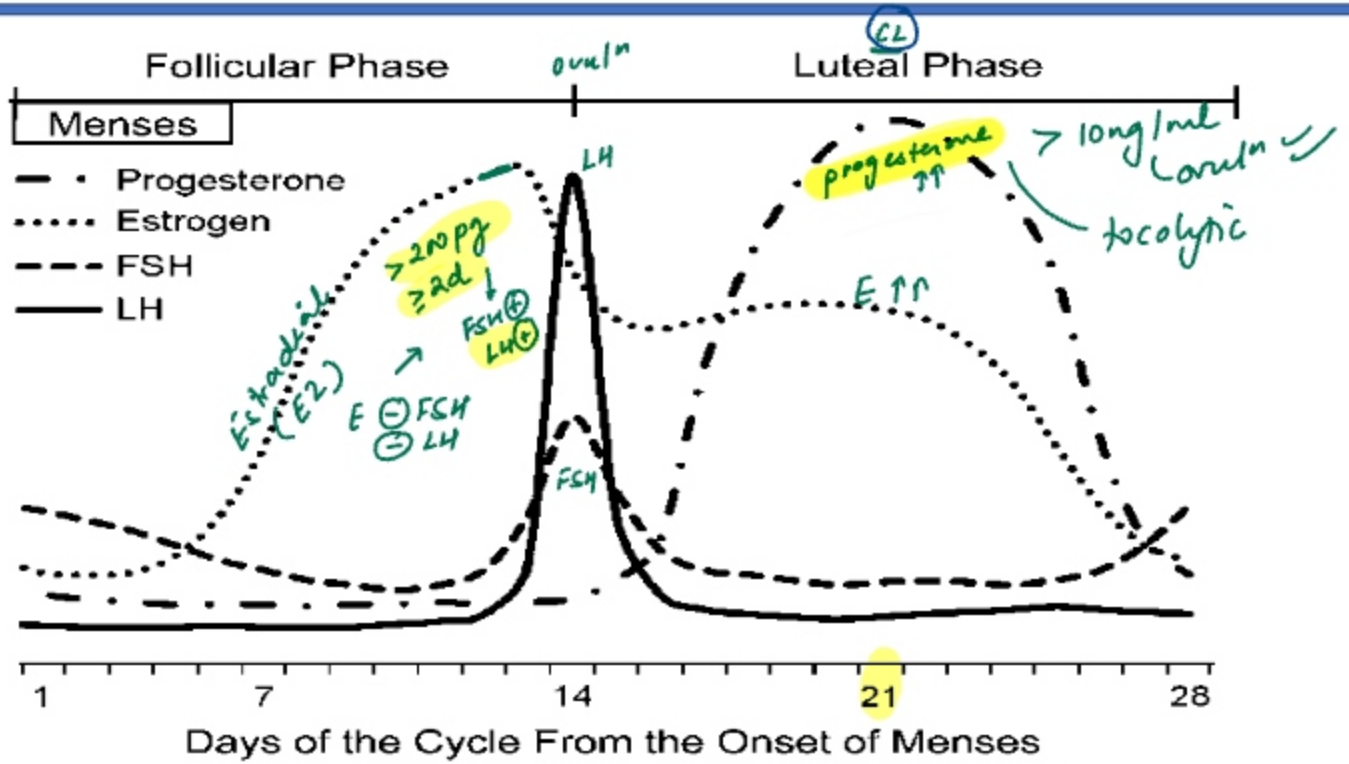
Enterocele: McCall culdoplasty (Mockawitch - fecal incontinence)

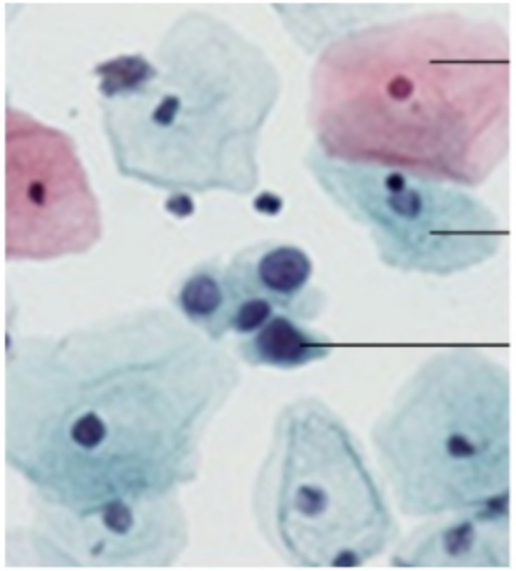
Vault prolapse: Sacrocolpopexy

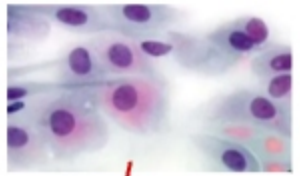
Fertility preserving: Sling surgeries -Shirodkar/ Purandare/ Khanna

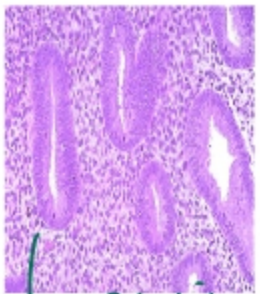
Uterus preserving with UCL >12cm: Fothergill/Manchester–Cervical amputation

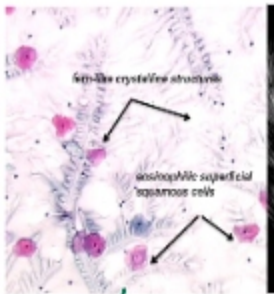
Menstrual Physiology

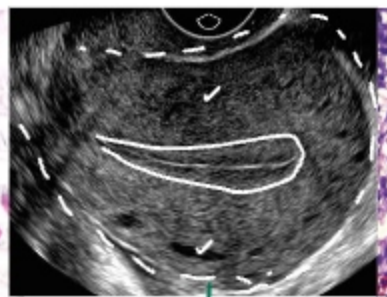


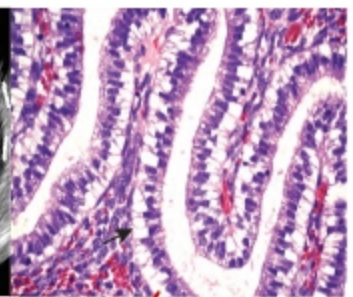


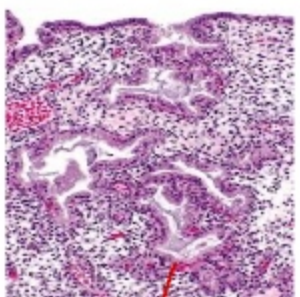












Maturation index: P : I : S

80:10:10 – Postmenop

10:80:10 secretory

10:10:80 follicular — Granulosa cell T

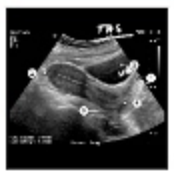
- ovuln kills

LH surge-Ovulation: 24-36 hrs

LH peak-Ovulation: 12hrs

Estrogen peak-LH peak: 12-24 hrs

Mid-cycle abdominal pain: Mittleschmerz



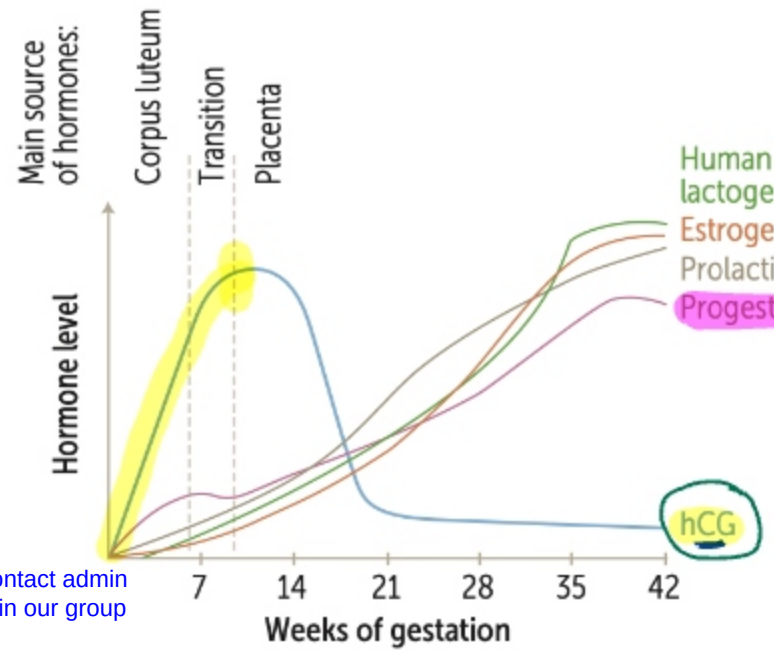
Effect of hormones

Organ	Oestrogen	Progesterone
Breasts	Ductal/stromal growth	Alveolar growth
Cervix	Thin, viscous mucous Spinnbarkeit	Thick, tenacious mucus
Endometrium	Proliferation of glands	Thickening of stroma
Others	Increased bone mass Increased coagulation factors Salt water retention Low LDL, High HDL	• Natriuresis • Increased body temperature

Menopause: ≥ 1yr + FSH >40 (now >25)
MC C/F: Hot flashes
Osteoporosis
CAD
Senile vaginitis – SERM: Ospemifene
Only indication of HRT: Severe hot flashes
HRT and risk of:
- Ca colon ↓
- Ca endometrium ↑ (E-HRT)
- Ca ovary / cervix No change
- **Ca breast** ↑ (EP-HRT)
- **DVT/ CAD** ↑

Only approved non-hormonal drug for hot flashes: Fezolinetant NK3 ⊖

OCP
CEO ↓ risk



(N) • PP hyperglycemia
• fasting hypoglycemia

Syncytiotrophoblast
Fetal growth
Insulin resistance
NO – GH

↓ **uterine contractions**

Syncytiotrophoblast
Maintains CL till 10 weeks
a subunit: LH, FSH, TSH

E1 = estrone
- fat
- less potent
- postmenopausal androgens

E2 = estradiol
- Graffian follicles
- most potent

Aromatase → estrogen

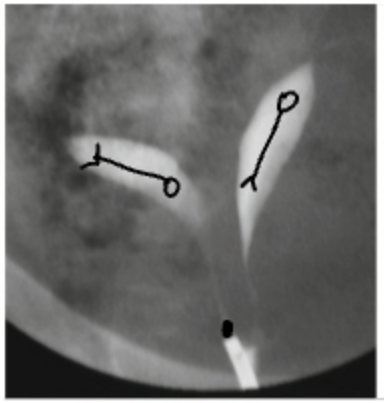
E3 = estriol
→ pregnancy
triple screen

Mullerian Anomalies

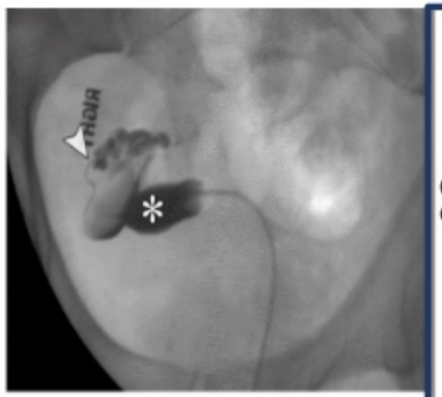
ovary (N)
lower 1/3 vagina (N)
FT – ut – Cx – upper 2/3 vagina

I- Hypoplasia / agenesis II- Unicornuate III- Diadelphys
IV- Bicornuate V- Septate VI- Arcuate
VII- DES-related
DES Most specific- T shaped Most common- Hypoplastic
Malignancy- clear cell - vaginal Males- Hypospadias

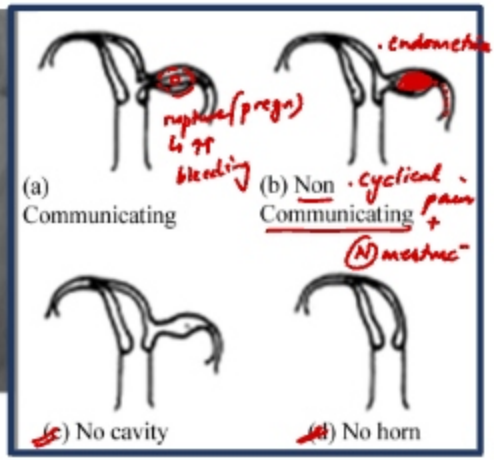
- IOC: 3D USG / MRI
- GOLD STD: Laparoscopy + Hysteroscopy
- MC C/F: 2nd T RPL
- MC Mullerian anomaly: Septate
- Infertility/ Worst reproductive outcome: Septate
- Best reproductive outcome: Arcuate > Diadelphys
- Uncommon lie in didelphys: transverse lie
- OHVIRA: Obstructed HV i/L renal Agenesis – diadelphys
- Max association with renal anomaly: Unicornuate
- Management of septate: Hysteroscopic septum resection
- Management of bicornuate: Unification Sx / Metroplasty (Strassman)

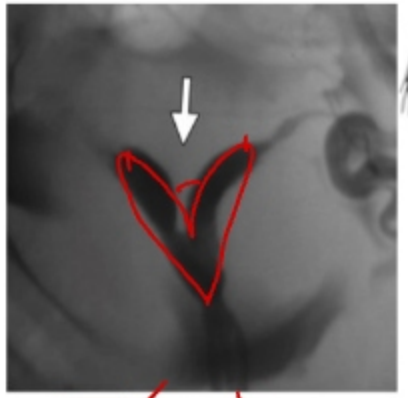


Didelphys



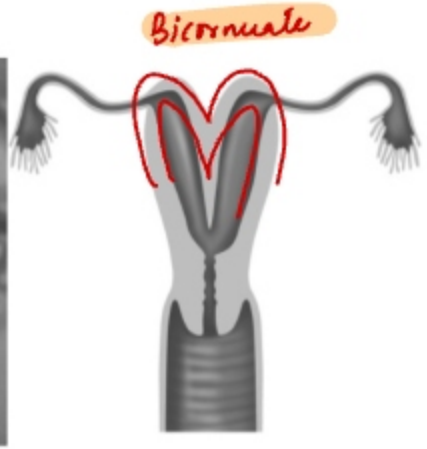
Unicornuate

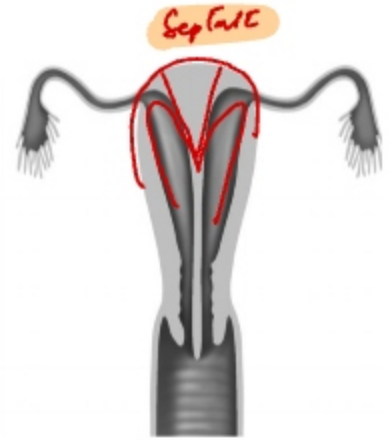


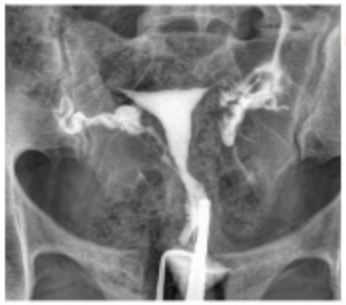


Bicornuate >105°
Intermuscular D >4cm

Septate
(R) reliable







(N) HSG
6-10 d

INFERTILITY

- **Begin Ix after:** 1yr **Age >35yrs:** 6mon
- **Female factor:** 30-35 **Male factor:** 30 **Both:** 10-15% **Idiopathic:** 10-15%
- **Initial Investigation:** Semen analysis **Abstinence:** 2-7d

repeat 4-6 wks ✓abn
↓ abn FSH / test

APPROACH TO AZOOSPERMIA:

FSH ↓ test ↓ → Hypoth / pit
- anosmia : Kallman

FSH ↑ test ↓ → testicular failure (mcc)
trauma / orchitis / varicocele / UDT

FSH / test (N) → obstructive
- CF - B/L absent VD
- Fructose - SV fn

Rx:

10-15 million/ml: IVI

5-10 million/ml: IVF

<5 million/ml: ICSI

TESE: extraction **TESA:** aspiration **MESE:** severe ↓↓ microdissection sperm extrac"

Semen parameters	WHO 2020
Semen volume	1.4 ml
Sperm concentration	16 million/ ml (oligo / a200)
Total motility	42% (astheno)
Progressive motility	30% (astheno)
Viability	54%
Morphology (Most imp)	4% terato

OATS

Female infertility

MCC of female factor- anovul^n
WHO grade- (2) - anovul^n

OVULATION:

MC- USG follicle monitoring **Best-** Progesterone d21 - >10 ng/ml (N) **Gold standard-** Endometrial bx (-d21 -d25)

OVARIAN RESERVE

MC- FSH (inv prop^n) >40 (:() **Best-** AMH <1 (:() (Long day follicles)

TUBAL FACTOR:

Initial- HSG **Best-** Laparoscopic chromopertubations (methylene blue)

PID

MCC: polymicrobial (a+c) (acute → Gonorrhea)
MCC before sexual activity onset: TB

CDC Criteria for Diagnosis of PID:

Minimum criteria:

Lower abdominal pain with any of the following:

- Uterine tenderness
- Adnexal tenderness
- Cervical movement tenderness

qq < PID, Ruptured ectopic

Additional criteria: (Lab)

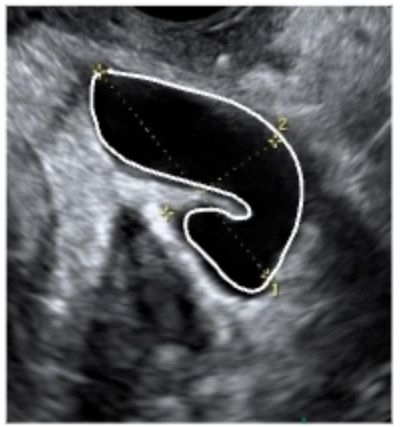
- Fever
- Mucopurulent discharge
- Microscopy of discharge: shows abundant WBC
- Raised ESR / CRP
- Lab test positive for Chlamydia/Gonorrhea

Specific criteria:

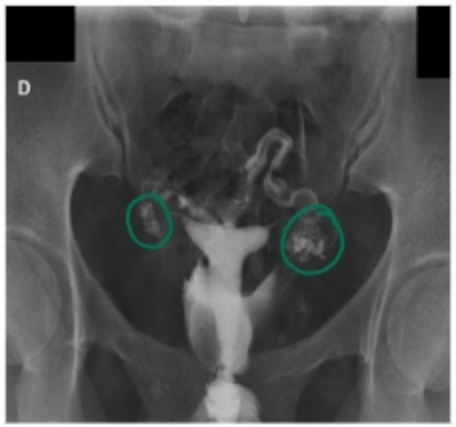
- Endometrial biopsy: endometritis
- TVS / MRI
- Laparoscopy

Staging of PID (Gainesville staging):

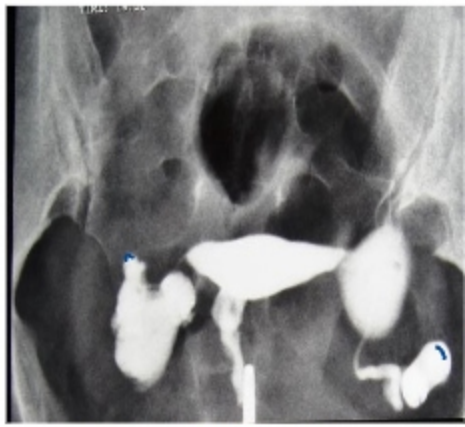
- Stage 1: No peritonitis
- Stage 2: Peritonitis present
- Stage 3: Tubo-ovarian mass/abscess
- Stage 4: Ruptured tubo-ovarian mass



Cogwheel sign
Hydrosalpinx



SIN - Salpingitis Isthmica nodosa
(TB)



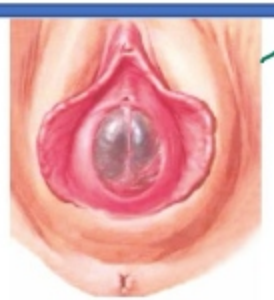
- Hydrosalpinx / distal tubal block
- Retort / tobacco pouch

Approach to amenorrhea and DSD

Primary amenorrhea:
Without sec sexual characters: 13yr
With sec sexual characters: 15yr
No bleed for 3yrs since thelarche
Secondary amenorrhea: 3mon – regular
6mon – irregular
T P M

Amenorrhea approach
1st step : UPT

Cyclical pain abdomen → Cryptomenorrhea



Imperforate hymen
↓
Rx – Cruciate incisions

Pelvic examination or ultrasonogram

External exam normal → transverse vaginal septum
Chronic colpos / hematometra → USG / MRI
Rx – resection

Uterus present
FSH, PRL, TSH
Serum FSH

Uterus absent

Increased (2°) → Karyotyping (1°)
Premature ovarian failure

Decreased → pit / Hypothalamic
Normal → anovular ↑ bleeds

Progesterone challenge test
↓ x bleed
E+P challenge test
↓ x bleed
Asherman Sn h/o D&C

anosmia: Kallmann
postpartum: Sheehan
BMI: anorexia

Karyotype-XY
Testosterone-male
Axillary/public hair-absent
Breast-present
AIS / TFS
male, XY, pseudo H, moc
clitoromegaly / amb g
↳ partial AIS
Remove gonads after puberty
r/o gonadoblastoma

Karyotype-XX
Testosterone-Female
Axillary/public hair-normal
Breast-present
Mullerian agenesis / MRKH
ovary (N)

46 XY
Testes present
Male internal genitalia
Virilisation at puberty:
Acne, male axillary and pubic hair, clitoromegaly
breast (–)
↓
5α reductase (–)

GONADAL DYSGENESIS
Secondary sexual characteristics: NO (× hair, × breast)

45XO	46XY	46XX
TURNER'S	SWYER'S (pt must in SAY)	true
(45XO/46XY) → gonadoblastoma → Remove		

CAH (Rx - iv fluids + steroids)	MC	Testosterone
21- hydroxylase deficiency (mc) Screening- 17 OH progesterone	♂ ↓ SHOCK	↑ XX - amb genitalia XY - precocious puberty
11- hydroxylase deficiency	↑ ↑↑BP	↑ same
17- hydroxylase deficiency	↑ ↑↑ BP	♂ ↓ XY → male pseudo ♀
3BHSD deficicency	♂ ↓ ↓↓BP	♂ ↓

Disorders of sexual differentiation:

Male pseudohermaphrodite XY (phenotypically ♀)

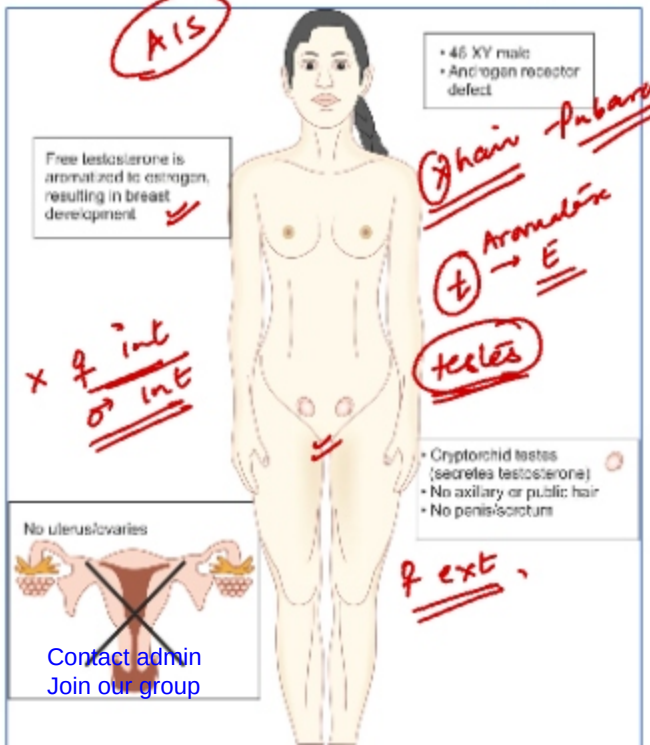
- No uterus

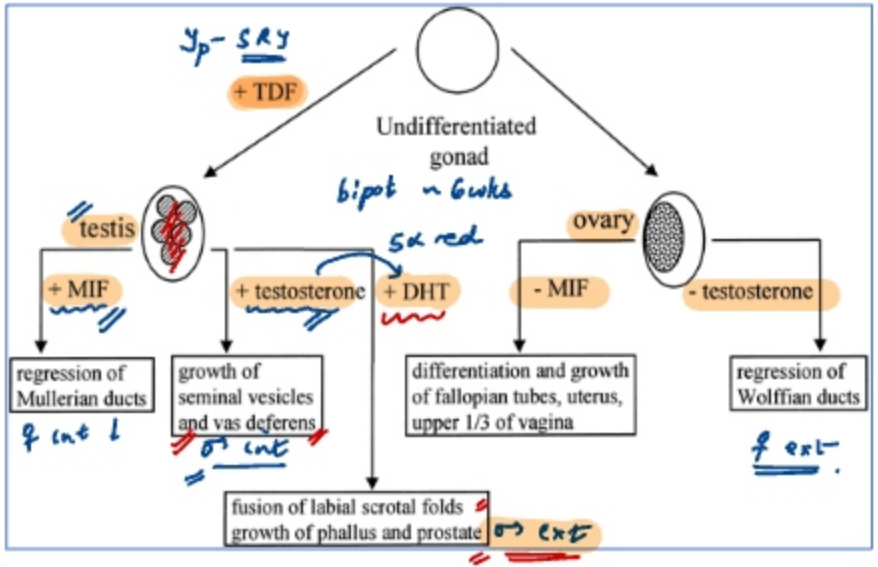
1. Breast + / Hair- AIS
2. Breast- / Virilisation at puberty+ 5α red

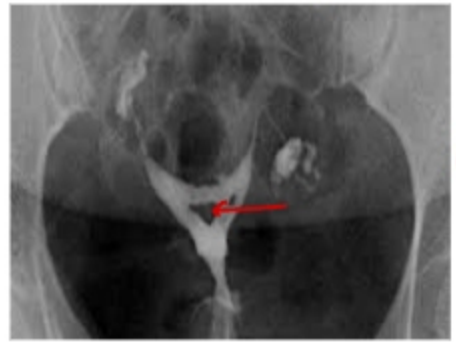
- Uterus present + Breast- SWYER
- BP high at birth CAH → 17α OH
- BP low at birth CAH → 3βSHD
- Skeletal anomaly Antley-Bixler-p450 OR

Female pseudohermaphrodite XX + amb genit

- BP low at birth - mcc - 21 OH XX
- BP high at birth - 11 OH XX
- Mother virilization at pregnancy Aromatase deficiency (↑↑ A → ↓↓ E)
- Skeletal anomaly Antley Bixler - p450 OR







Asherman Sx

Rx - Hysteroscopic adhesiolysis

An 18-year-old girl with primary amenorrhea presents to the OPD. She has Tanner stage IV secondary sexual characters. Her karyotype is 46XX. FSH is 5 and LH is 13. What is the likely diagnosis? (INICET MAY 2024)

2-10 FSH LH

- Gonadal dysgenesis XX
- Mullerian agenesis
- Kallmann syndrome XX
- Androgen insensitivity syndrome XX

A 16-year-old presents with absent menses. Examination shows widely spaced nipples, webbed neck, and Tanner grade 1 breast development. USG shows streak ovaries. Investigation shows raised FSH, raised LH, and reduced estradiol. What is the diagnosis?

- Turner syndrome
- Kallmann syndrome
- Androgen insensitivity syndrome
- Mayer-Rokitansky-Küster-Hauser (MRKH) syndrome

An 18-year-old woman comes to the OPD due to primary amenorrhea. The patient had ambiguous external genitalia noted at birth, and laparotomy performed at 17 months of age revealed a normal uterus and fallopian tubes. Ovarian biopsy performed at that time revealed normal-appearing primordial follicles. Blood pressure is 120/78 mm Hg and height is 160 cm (5 ft 3 in). The patient has nodulocystic acne over the chest and back. No breast development, normal pubic and axillary hair, and marked clitoromegaly are present. Laboratory results show a normal female karyotype and normal glucose and serum electrolytes. Serum FSH, LH, testosterone, and androstenedione concentrations are high. Pelvic imaging reveals multiple ovarian cysts. Which of the following is the most likely diagnosis in this patient?

- Aromatase deficiency
- Congenital adrenal hyperplasia
- Kallmann syndrome
- Swyer James syndrome

Abnormal uterine bleeding

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

Primary dysmenorrhea:
Since menarche
Generalised suprapubic
Just before or at menstruation
Relieved in 72hrs
Normal examination

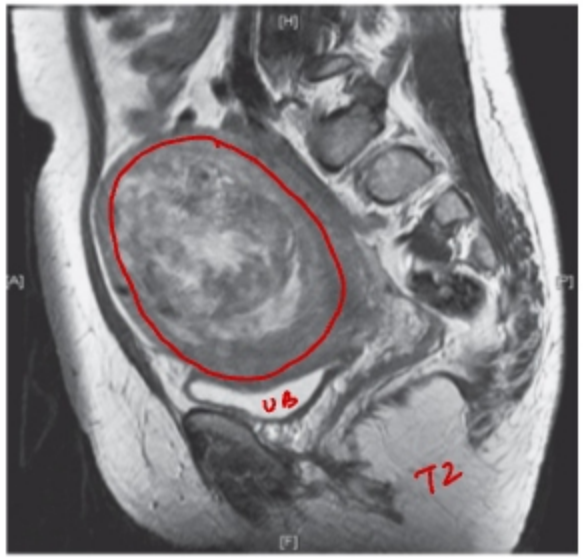
Normal: 24-38d
Cycle: 2-8d
Volume: 20-80ml
MCC of AUB in adolescents: anovulatory
H/P :
Metropathia hemorrhagica: AUB - perimenopausal - Swiss cheese
Next step:
Reproductive age group: UPT (R/o pregn)
Postmenopausal: TVS ± Pap smear
Indication of endometrial aspiration/biopsy :
Reproductive age group: ≥ 12mm
Post-menopausal: ≥ 4mm
On tamoxifen: ≥ 8mm (cystic endom 4)
Gold standard Ix: Hysteroscopy + Fractional curettage

Endometrial hyperplasia- R/o cancer:
Simple < Endo A 1%, E A 8%
Complex < Endo A – 3%, E A – 29%

Rx of AUB:
- ♀ family complete → Hysterectomy
- ♀ family complete → Progesterone (OCPs, Inj Prog, Mirena)

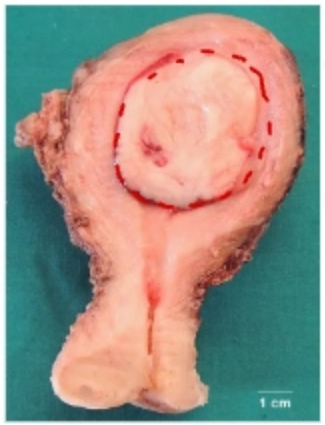
Next:
tranexamic acid

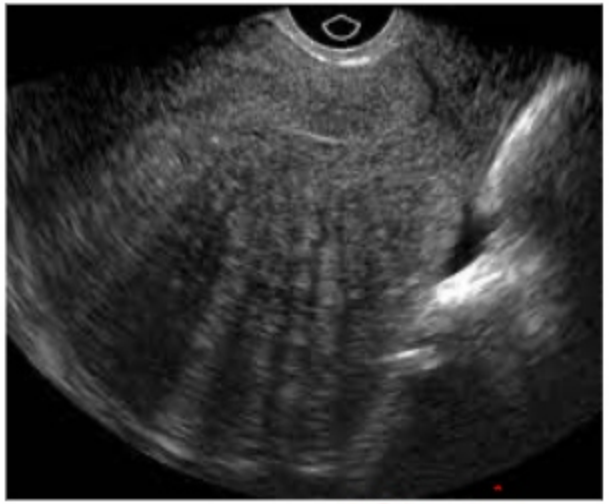
Fibroid and D/D



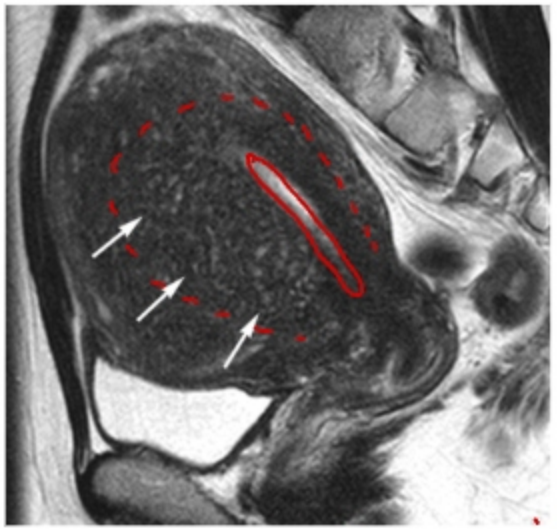
- Heterogeneous
- Asymmetric

FIBROID

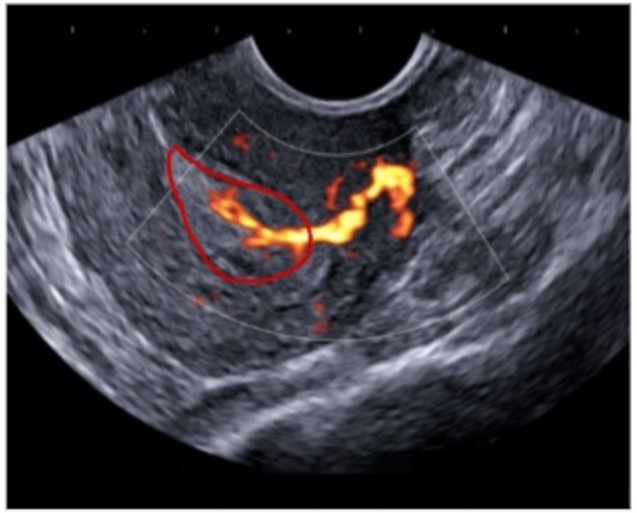




venetian blind sign



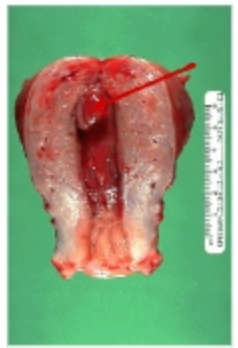
salt & pepper sign

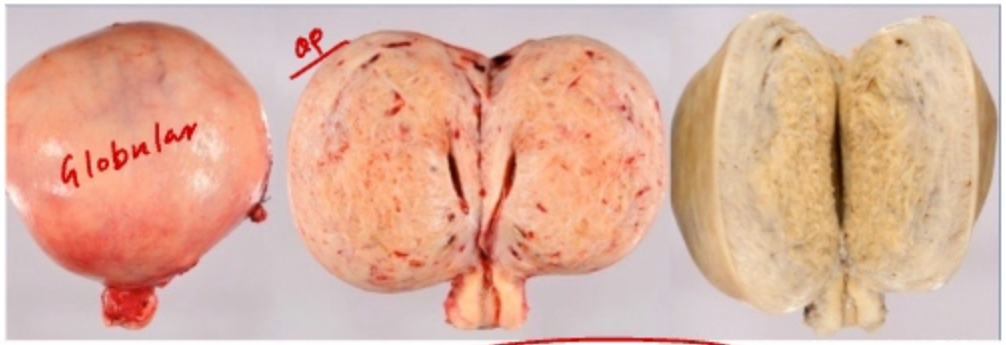


feeding vessel sign

E. POLYP

R - Polypectomy





Adenomyosis

R - TAH once family complete

E GI/stroma - jnl zone ≥ 12mm

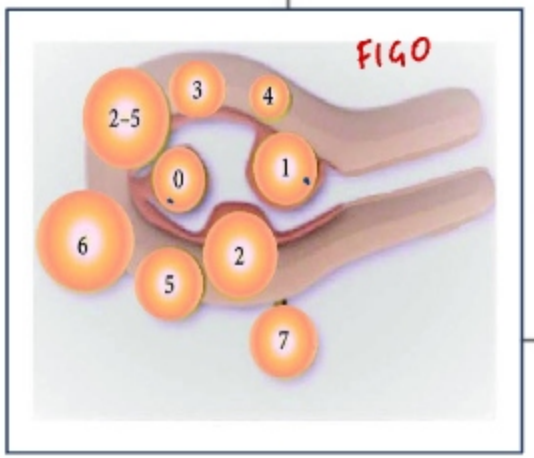
loc - MRI

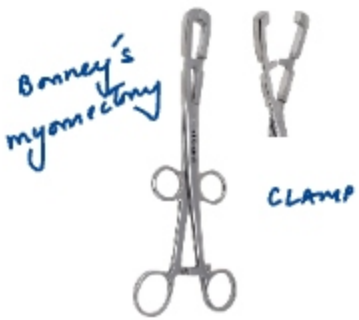
tender + symmetric (<12wks) size - HALBAN SIGN

MC fibroid: Intramural
MC to cause infertility/ RPL/ AUB: Submucosal
MC to cause torsion: Subserosal
Pseudocapsule
MC degeneration: Hyaline
Pregnant (T2) + Acute pain + WBC high / Fever
Aseptic thrombosis
Diagnosis: Red degenerⁿ of fibroid
No hysterectomy / TOP/ myomectomy
Management: NSAIDs.
- tranexamic acid if AUB
- SYMPTOMATIC:
  - Family complete: Hysterectomy
  - Not complete / infertility: Myomectomy
    - 0, 1 → Hysteroscopy
    - Laparoscopic

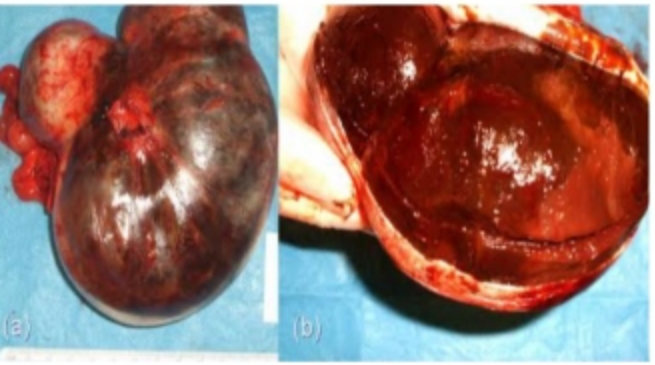
D/D → ↑ WBCT / fever
↳ Acute torsion

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)

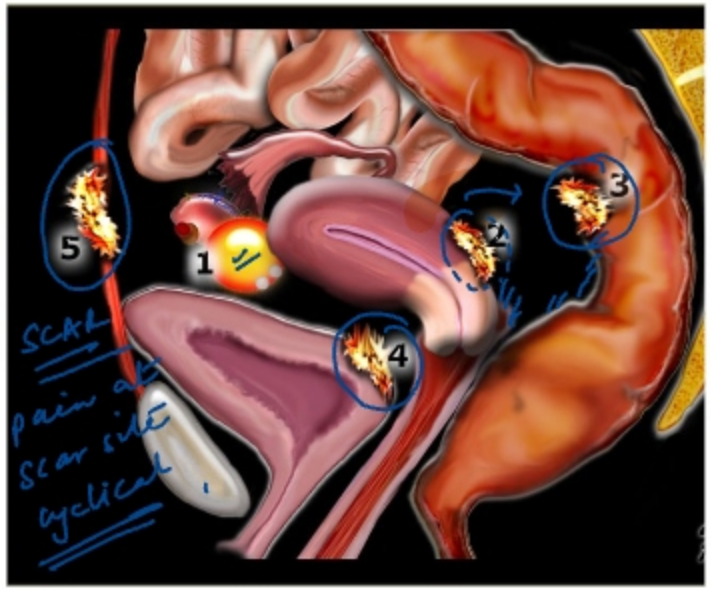




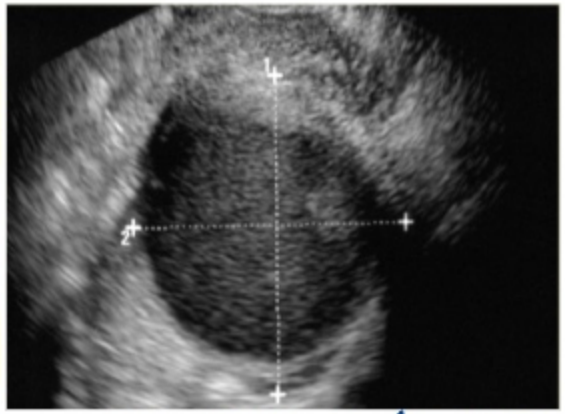
Endometriosis



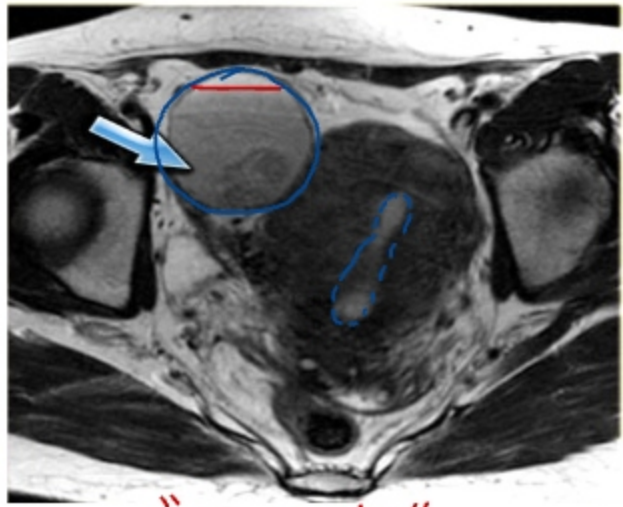
CHOCOLATE CYST = Endometrioma



SCAR pain at scar site cyclical

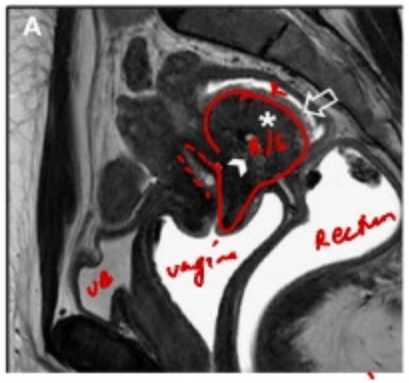


ground glass / echoes ±

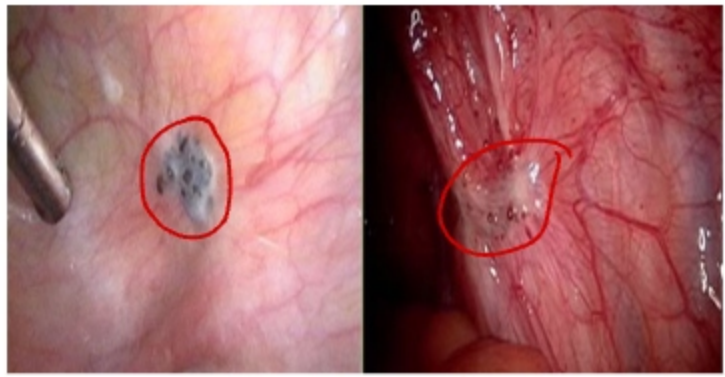


"T2 shading"

Chronic pelvic pain / dysmenorrhea/ dyspareunia
"Fixed retroverted" "Nodularity in POD"
MC site: OVARY > POD > Broad lig > Uterosacral lig
Radiological IOC: MRI
Overall IOC: Laparoscopy
Sampson theory: Retrograde menstruation



Mushroom cap sign



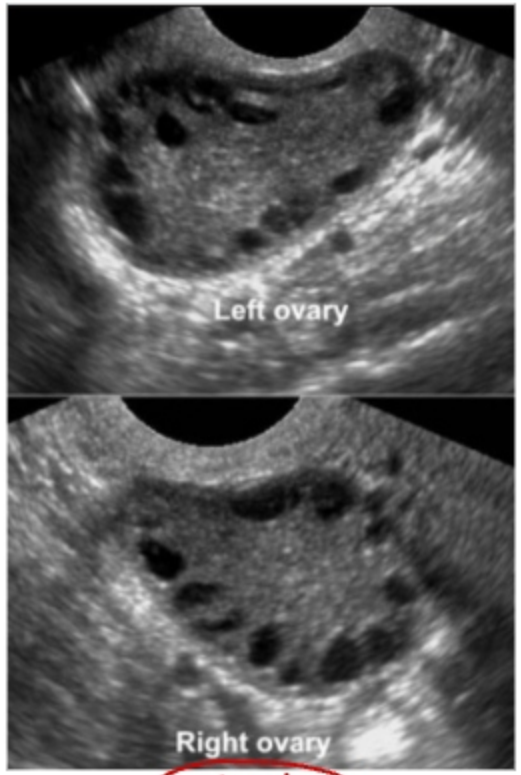
Gun powder / Powder burn

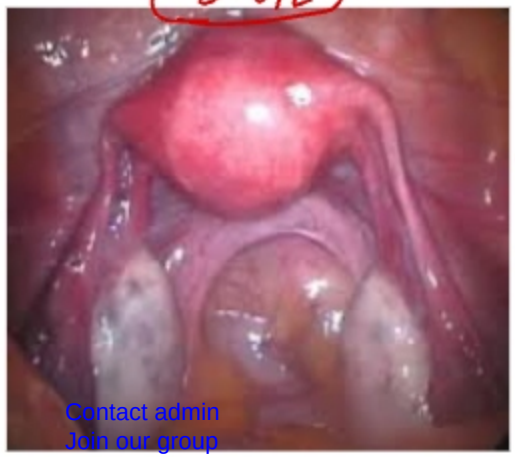
E-dependent
- Fibroid
- E-Hyperplasia
- Endometriosis

} medical Mx

Rx: OCP/ NSAIDs
Progesterone - Implant / Mirena
GnRH continuous/ antagonists
- Danazol (androgen)
- Leuprolide / Goserelin
- Relix
- Letrozole (aromatase ⊖: A → E)

PCOD/ Stein-Leventhal syndrome





Rotterdam Criteria for Diagnosis of PCOD (2 of 3):

1. Oligomenorrhea / hirsutism
   Ferriman-Gallwey score: ≥8
2. Biochemical: Total testosterone raised
3. Polycystic Ovaries:
   - ➢ >12 follicles (2-9mm diameter) in each ovary
   - ➢ Ovarian volume > 10cc

Not in criteria: insulin R, necklace pattern, obesity

ANOVULATION ↑ androgen

Approach to raised testosterone:

70-200 — Hirsutism — PCOD

>200 — virilic (hair + male voice + clitoromegaly)
- ovarian tumor: arrhenoblastoma
- adrenal tumor: DHEA / DHEAS ↑

Rx: 1st line: lifestyle changes

DOC for irregular cycles/ hirsuitism: cOCPs ± Metformin

Drospirenone: anti-androgen, anti-MC (4th gen)

DOC for infertility: Letrozole > Clomiphene > Inj

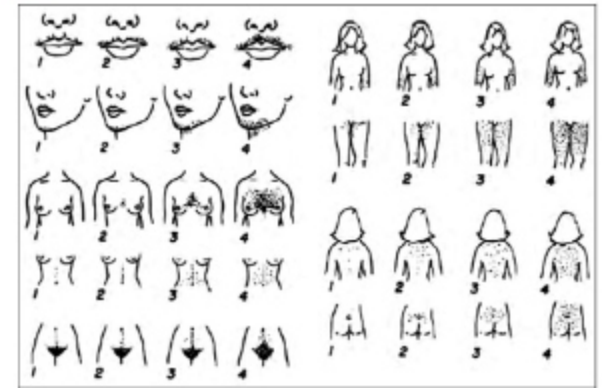
Letrozole: A → E; GnRH ↑↑

Clomiphene: SERM, E⊖ hypoth; GnRH ↑↑

Inj: HMG = CFSH + LH

anti-androgens (CLAST)
- Cyproterone
- Spironolactone
- Flutamide
- Finasteride

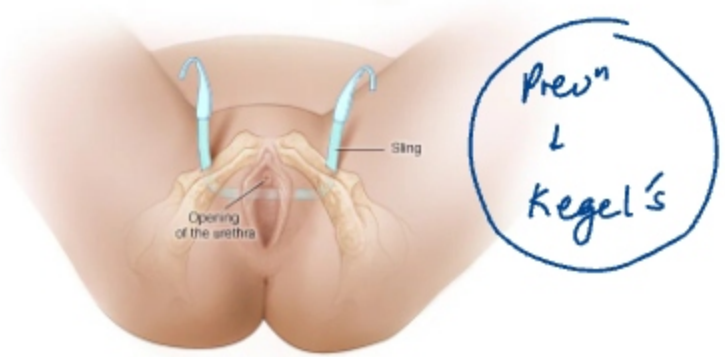
- **LEVELS:** ↑↑ Fat, ↑↑ androg
- Estrone ↑↑
- Estradiol N — anovulation
- Progesterone ↓
- LH ↑
- FSH N
  LH:FSH ↑ (N 1:1)
- Testosterone ↑ (70 - 200 ng)
- SHBG ↓ — insulin ↑
- PRL: N
- LDL: ↑ (androgens ∴)
- AMH: ↑ (follicles ↑)
- Ca ovary? NO
- Ca endometrium? YES — anovulation, unopp E
- Osteoporosis? NO
- CV risk? YES



Uro-gynecology

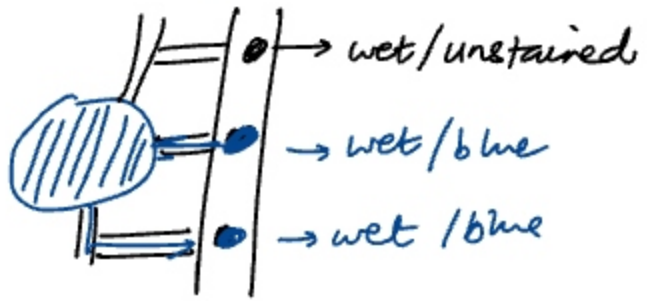
Continuous dribbling + normal bladder: vesicovaginal / ectopic ureter
Continuous dribbling only: VVF
Vaginal urine only during micturition: urethro-vaginal
Dribbling on increasing intra-abdominal pressure: SUI
Cause: pelvic floor weak / ↑mobility urethral - cough/sneeze/valsalva
Rx of SUI: TVT / TOT
Gold standard: Burch colposuspension → iliopectineal / cooper's lig

IOC for VVF- 3 swab test
Gold standard- Cystoscopy
VVF repair: LATZKO REPAIR
Post-VVF repair: Sexual abstinence: 3mon
Pregnancy avoid: 1yr



Prevn
↓
Kegel's

Causes < Obstructed labour
Hysterectomy



Ca cervix screening and Pap smear

Site of ca cervix: transformation zone (columnar → squamous) -dynamic

Screening:

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

WHO: 2030-90:70:90

90 → vaccinated by 15yrs; 70 → 35-45yr Pap; 90 → % ↓ ca cx

R/F: - early onset - HPV - HIV+ - multiple parity - Multiparity - smoking

HPV: Low-risk 6, 11 **High-risk** 16, 18, 31, 33, 45, 52, 58

Gardasil-9 **Cervavac** (India) - 6, 11, 16, 18

HPV linked cancers (6):

- cervix
- penile
- oral cavity
- vulva
- anal canal
- larynx

No PV examination prior to pap QR

Ayre's spatula → 1 full rot^n

endocervical brush → 1/4-1/2 rot^n

Liquid based cytology

cervex brush / broom → 5 full rot^n → ↑yield

- Eosin Y
- Orange G6
- Hematoxylin
- Light green SF

} Pap stain

- Fixative: 95% ethanol

E6: p53 ⊖
E7: RB ⊖
L1: vaccine

WHO SAGE PROTOCOL:

- **9-14yrs:** 1 or 2 doses
- **14-21yrs:** "
- **>21yrs:** 2 doses 6 mon apart
- **HIV:** 2 or (3 doses) (0, 2, 6 mon)

WHO Screening (Used by countries with limited resources)

Start: 30 years **Stop: 50 years**

VIA / VILI

VIA → 5% acetic acid → abN → white

VILI → Lugol's I → unstained orange

See & Treat Approach:

HPV DNA testing → If positive → Rx: LLETZ

VIA test → If positive → Rx: LLETZ

See, Triage & Treat Approach (Better):

HPV DNA → If positive → VIA → If positive → Rx: LLETZ

Abnormal Pap smear approach

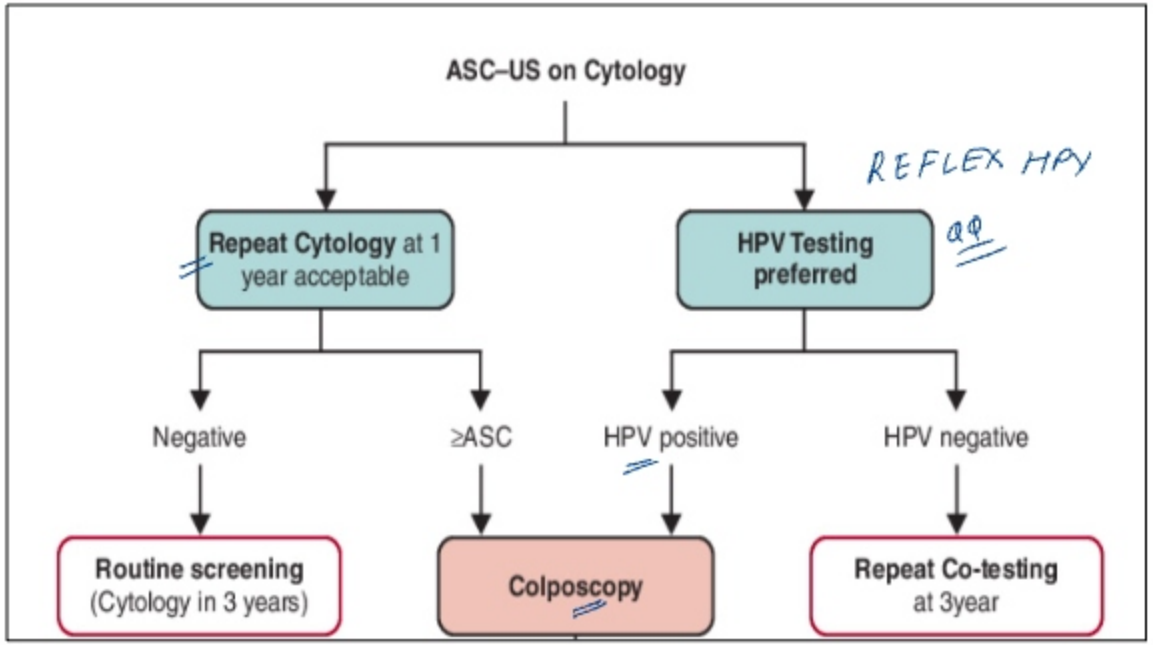
- **ASC-US** Reflex HPV
- **AGC** → EA + ECC + colposcopy Bx
- **LSIL** → Colposcopy + Bx
- **HSIL**

Colposcopy results:

CIN-1
1°. r/o Ca Cx
↓
F/U x 1yr
↓ same
F/U x 1yr
↓ same
Cryotherapy

CIN-2/3
15-30% r/o Ca Cx
↓
LEEP / LLETZ
OPD

Micro-invasive Discrepancy
↓
CONISATION



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

IB1 → trachylectomy

Rp → RT / Sx

IA / IB1 / IB2 / IIA1

Rp : CT - RT

mcc of death: uremia "3b" - "pee"

CP

inguinal LN

VP

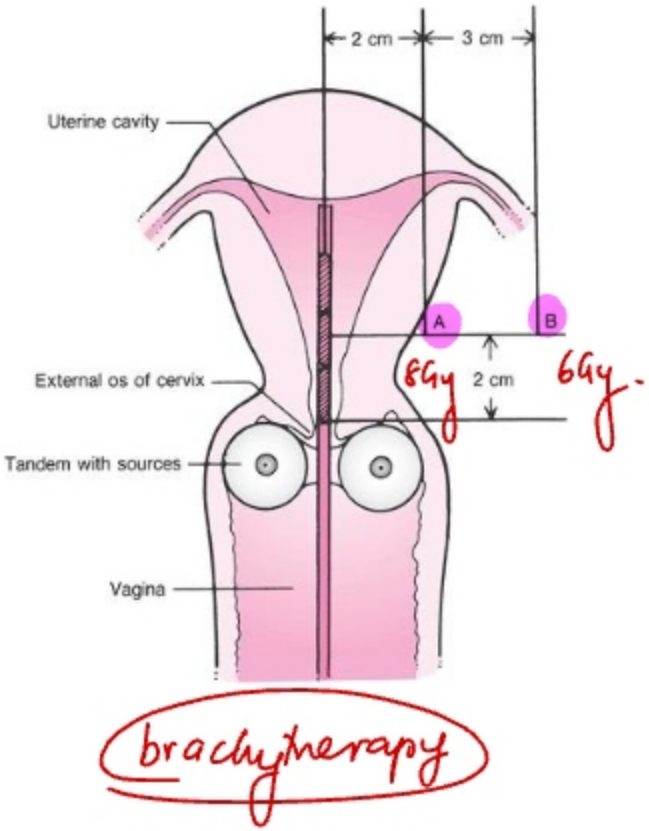
CP

Types of Hysterectomy and RT

Simple / Extrafascial | Mod Radical / Wertheim | Radical / Meigs

Take out covering fascia of uterus	Parametrium removed up to level of ureter	Parametrium removed lateral to the ureter also
Uterine vessels ligated close to uterus	At the level of ureter Max r/o injury QQ	At the origin from internal iliac vessels
Uterosacrals ligated close to uterus	Midway to rectum	Near rectum
Vaginal cuff not removed	1-2cm of vagina removed	>2cm vagina removed

benign



brachytherapy

CA Endometrium

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

Type 1 (MC)	Type 2
55–65 years	65–75 years Aggressive
Unopposed estrogen, obesity, HTN, DM	Atrophy, thin physique
Endometrioid	Serous, clear cell, mixed Müllerian tumor
PTEN, ARID1A, PIK3CA, KRAS, MSI	TP53, PIK3CA

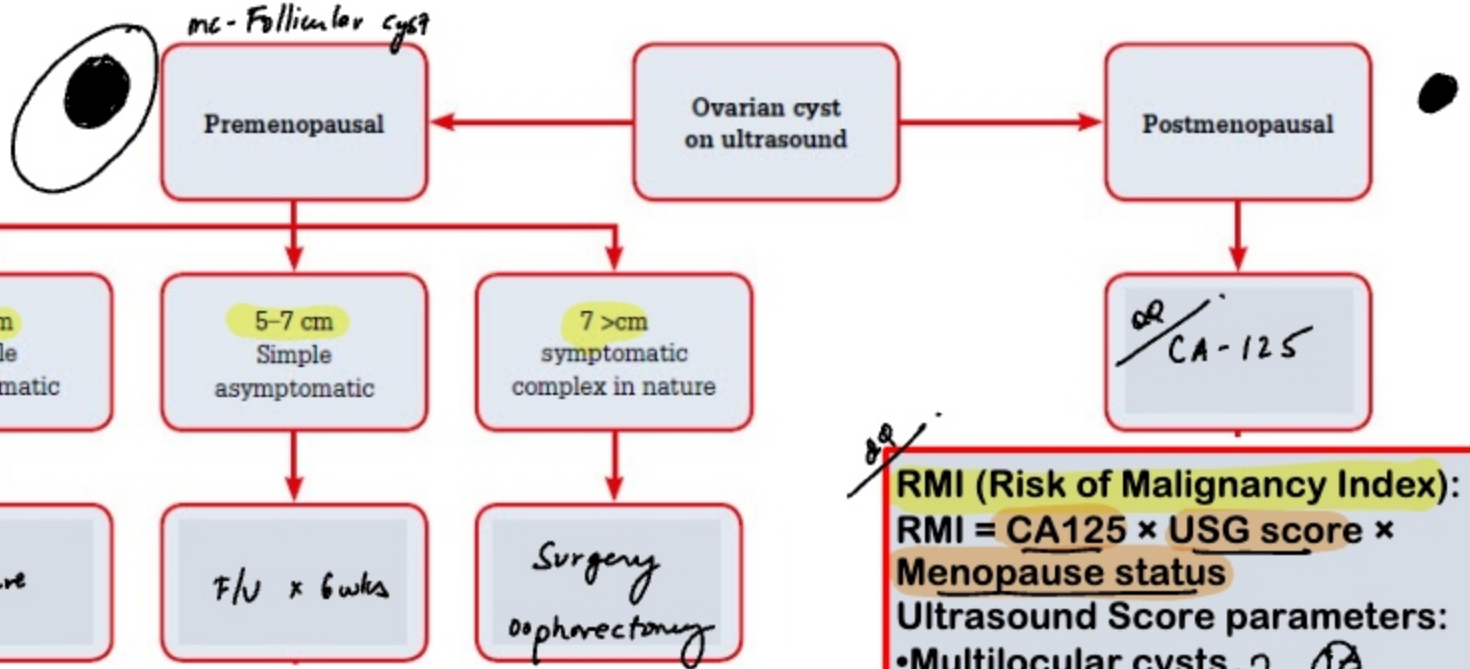
Cowden : B E T

Lynch = HNPCC

Rx: TAH + BSO +
Except: adjuvant RT
Endometrioid adenocarcinoma
Grade 1 or 2 Stage 1A Size <2cm

2023 updated staging
- POLE-mutated tumors →
- p53-abnormal tumors →

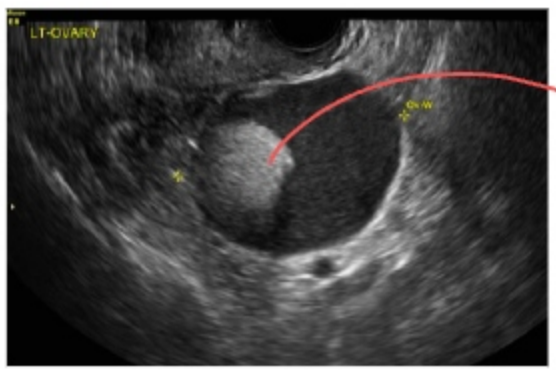
Approach to adnexal mass



OR

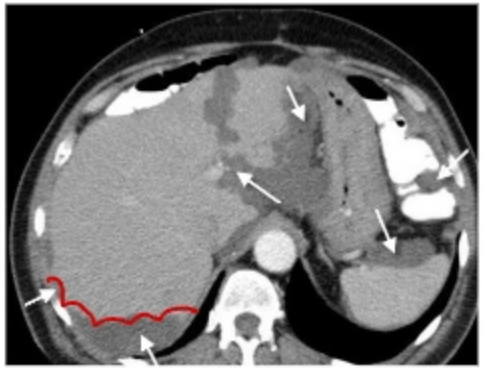
RMI (Risk of Malignancy Index):
RMI = CA125 × USG score × Menopause status
Ultrasound Score parameters:
- **Multilocular cysts**
- **Solid areas**
- **Bilateral lesions**
- **Ascites**
- **Metastases**

Acute pain+ Reticular appearance: Hemorrhagic cyst — h/o warfarin → F/U x 6-8 wks
Dot & dash/tip of iceberg appearance: Dermoid cyst / teratoma
T1 hyperintense cyst: FAT – Dermoid cyst; BLOOD – Hgic cyst / endometrioma



CA Ovary Pathology-WHO classification

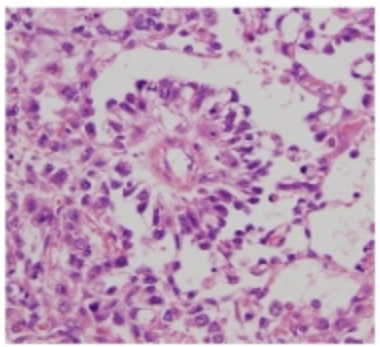
Epithelial
- **Serous tumor-** mc - CA-125
- **Mucinous tumor-** CA 19-9, Pseudomyxoma peritonii
- **Brenner tumor-** transitional / walthard cell rest / coffee bean N
- **Endometrioid tumor**
- **Clear cell carcinoma** - Hobnail cells



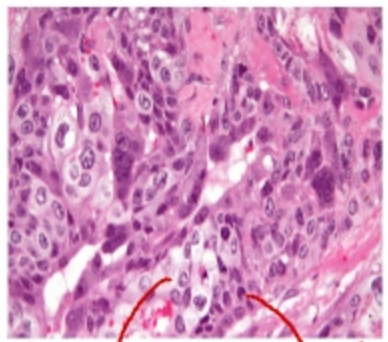
"scalloping"
pseudomyxoma peritonii
mucinous ovary
appendix

Germ cell tumors - young ♀ (HAL)
- **Teratoma** (mc)
- **Dysgerminoma** = seminoma

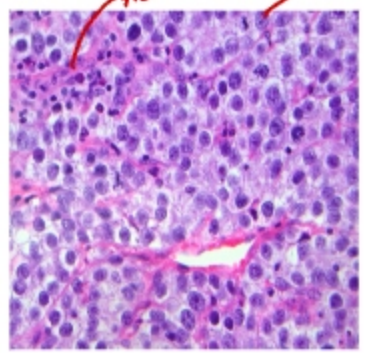
LDH, PLAP, HCG, OCT3/4, NANOG
- **Yolk sac tumor** (α FP) Endodermal sinus tumor
- **Choriocarcinoma** (HCG)
- **Embryonal cancer** - CD30



Schiller Duval bodies



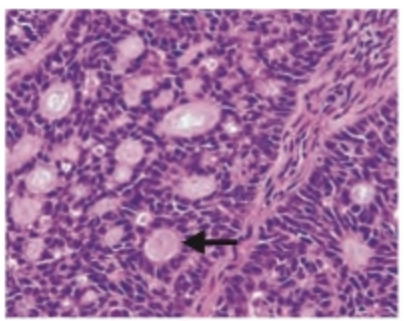
syncytioT ccn cytoT



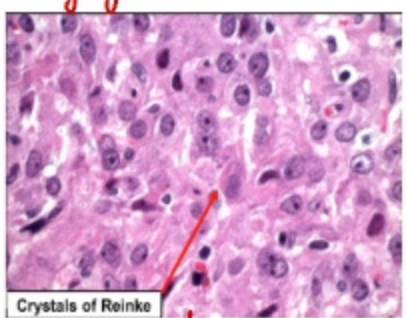
fibrous septa small round blue cells
Dysgerminoma

Sex cord stromal tumors
- **Granulosa cell tumor** (Estradiol) → precocious pub, PM bleed

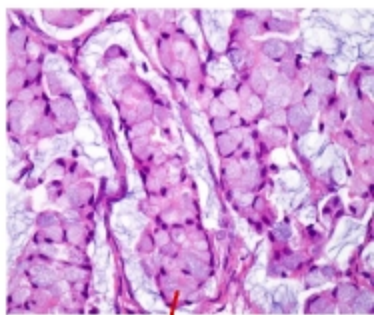
Call-Exner bodies, FOXFL2, Inhibin B, Calretinin
- **Androblastoma / Arrhenoblastoma** (virilizing)
- **Sertoli cell/ Leydig cell/ Hilus cell**
- **Stromal tumors: Fibroma/ Thecoma** MEIG Sx — solid ovarian, Pl. effusion, Ascites



Call Exner



Pure Leydig



SIGNET RING

Krukenberg tumor - Mets ← (diffuse) stomach E-Cadherin ⊖

CA Ovary

I A	Tumor limited to one ovary (capsule intact) or fallopian tube
I B	Tumor limited to both ovaries (capsules intact) or fallopian tubes
I C	Tumor limited to one or both ovaries or fallopian tubes, with any of the following: Stage IC1: Surgical spill Stage IC2: Capsule ruptured before surgery, or tumor on ovarian or FT surface Stage IC3: Malignant cells in the ascites or peritoneal washings
II A	Extension and/or implants on the uterus and/or ovaries and/or fallopian tubes.
II B	Extension to other pelvic intraperitoneal tissues
III A	Positive (cytologically or histologically proven) retroperitoneal lymph nodes only
III B	Macroscopic peritoneal metastasis beyond the pelvis up to 2 cm in greatest dimension, with or without metastasis to the retroperitoneal lymph nodes
III C	• Macroscopic peritoneal metastasis beyond the pelvis more than 2 cm in greatest dimension • Tumor to the capsule of liver and spleen without parenchymal involvement
Iv A	Pleural effusion with positive cytology
Iv B	Parenchymal metastases and metastases to extra-abdominal organs (including inguinal lymph nodes)

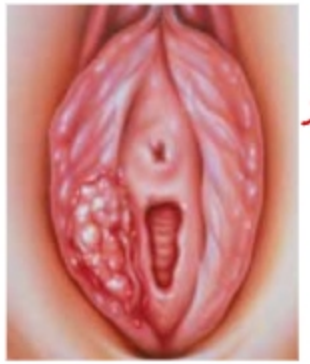
1. Peritoneal wash.
2. TAH + BSO.
3. Peritoneal biopsy.
4. Infracolic omentectomy.
5. Pelvic/para-aortic LN

Sx Staging / debulking
↓
BEP - adjuvant CT

aa/ peritoneal "caking" deposits
↓
NA CT → debulking

Recurrence within 6 months of chemotherapy : Pt resistant DOC : Paclitaxel + bevacizumab.
Recurrence occurs after 6 months of chemotherapy : Pt sw DOC : Carboplatin + paclitaxel.
Progression during treatment : Pt refractory

Ca vulva

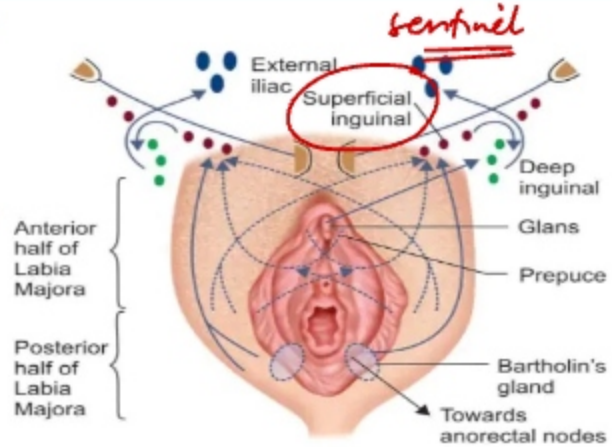


sq cc

R/F:
HPV Warts, Paget's, Atrophy, smoking, Lichen sclerosus
Not Condyloma Lata, HSV, Parity, Hamartoma

Keye's punch bx

stromal invasion ∝ LN → most imp prognostic



FIGO	Definition
IA	Lesions <2 cm, with stromal invasion <1.0 mm
IB	Lesions >2 cm size or with stromal invasion >1.0 mm
II	Extension to lower 1/3 urethra, vagina, anal involvement
IIIA	One or two node metastases, each 5 mm or less One lymph node metastasis 5 mm or greater
IIIB	Three or more lymph node metastases each less than 5 mm Two or more lymph node metastases 5 mm or greater
IIIC	Lymph node metastasis with extracapsular spread
IVA	• Extension to any of the following: upper 2/3 urethra or vagina, bladder mucosa, rectal mucosa or fixed to pelvic bone • Fixed or ulcerated regional lymph node metastasis
IVB	Distant metastasis (including pelvic lymph node metastasis)

→ WLE / Partial vulvectomy

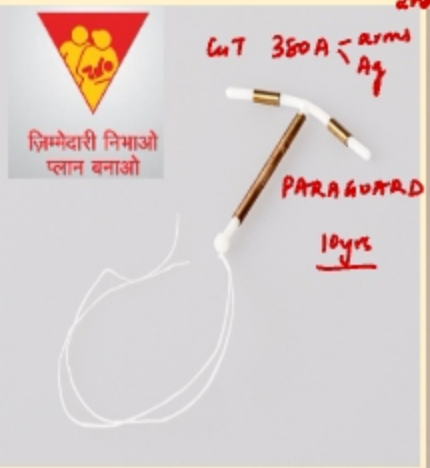
→ Radial vulvectomy + B/L LND except

IB – <2cm
>2cm from midline
U/L

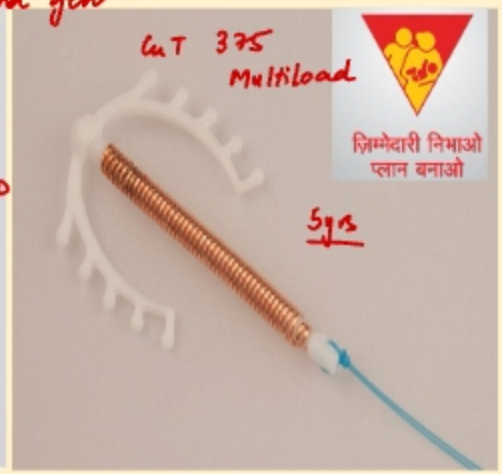
CT-RT

Contraceptives

2nd gen



CuT 380A < arms Ag



CuT 375 Multiload

Male

Female (polyurethane)

BARRIER

Prevent STDs
Best in with heart disease

LNG + EE + Fe fumarate
0.15mg 0.03mg

8yr - contrac
5yr - HMB

MIRENA (LNG-IUS)
Ideal - HMB
52mg
20 µg/d

Lippe's loop (1st gen)

4m : frameless / "Gyne-fix"

Main MOA: Inhibition of fertilization (Cu) > implantation
CI: Unexplained AUB, Active PID, Uterine mass, Wilsons
Post partum IUD: < post placental- 2in 10min ✓ del 2in 48hr ✓ delivery
Interval IUD : > 6wks ✓ delivery (2in 7d ✓ menses)

Missed pill concept:

1/2 pills missed
- take 1 extra pill

3 or more pills missed

1st/2nd wk
- take 1 extra pill
- EC if <72 hrs
- back up x 7d

3rd wk

+ discard non-hormonal pill + start new pack

⊖ GnRH

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

OCPs ↑r/o:
Liver adenoma, Ca cervix, Ca breast

↓r/o: CEO
Endometrial, Ovarian, Colon ca, PID

R/F: early menarche, late menopause, nulliparity

IUD scenarios

Case of Missed Threads

1.Step 1: USG

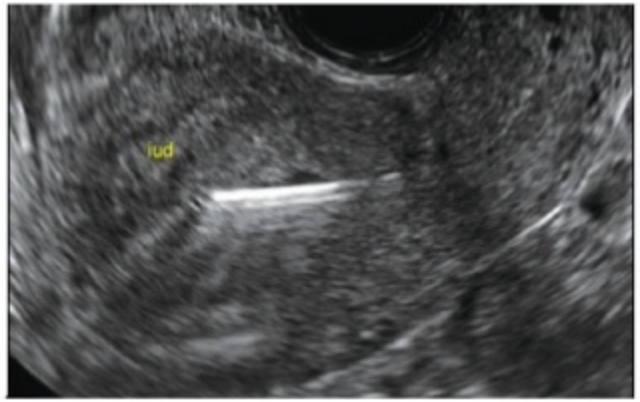
2.If IUCD not visible → Xray abdomen

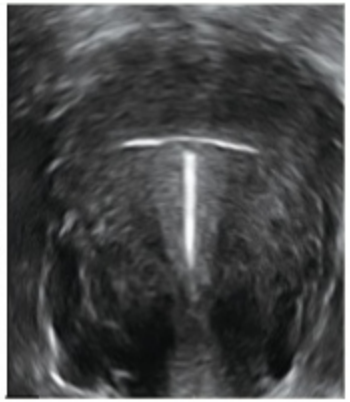
In UTERUS:

If patient wants to continue: Lostring

If patient wants removal: remove ↑ Shirodkar hook

If perforation is detected: Exp lap / laparoscopy - remove





CuT + UPT positive

1.If the patient does not wish to continue the pregnancy: MTP + CuT removal QQ

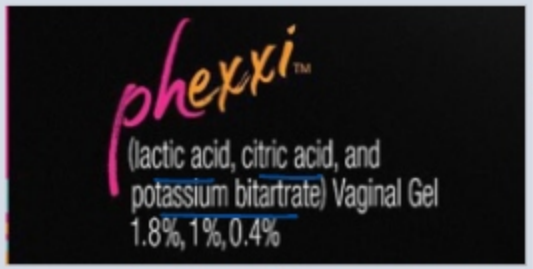
2.If the patient wishes to continue the pregnancy:

1. **If thread is visible:** Remove CuT QQ
2. **If thread is not visible:** CuT + pregnancy - PTL / infn (x teratogenic)
   Remove → Shirodkar's hook

Contraceptives

Ormiloxifene - SERM
non steroidal
↳ CDRI, Lucknow

MOA: Inhibits implantation
CI: PCOD



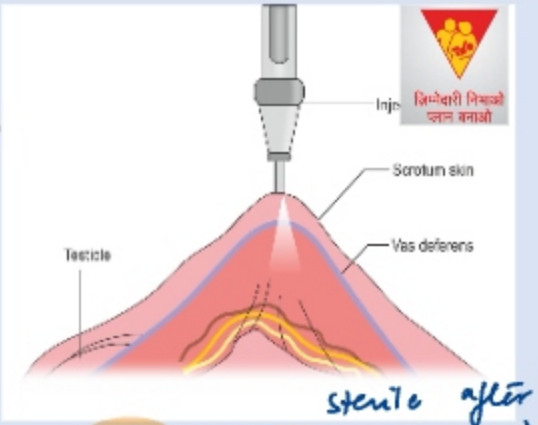
local pH ↓↓ - sperma xx entry

DMPA 150mg im
3mm
↓ Sickle cell A
↓ Sz

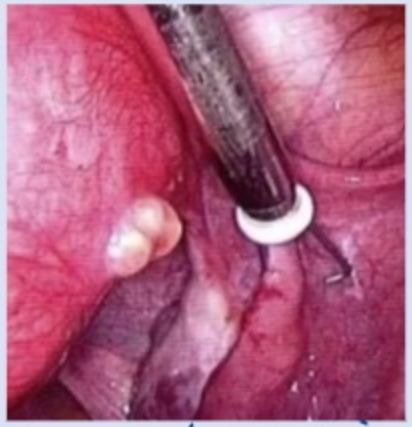
MOA: Inhibit ovulation, cervical mucous
Can be given upto 2 weeks early and 4weeks delay

QQ

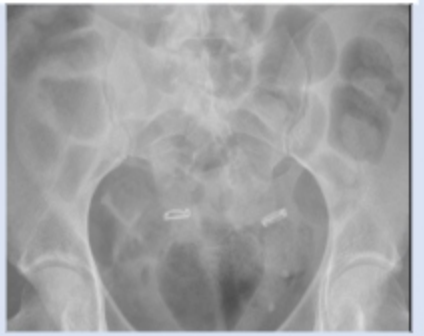
All prog - implants
injectibles
(-) ovulation
(+) mucous



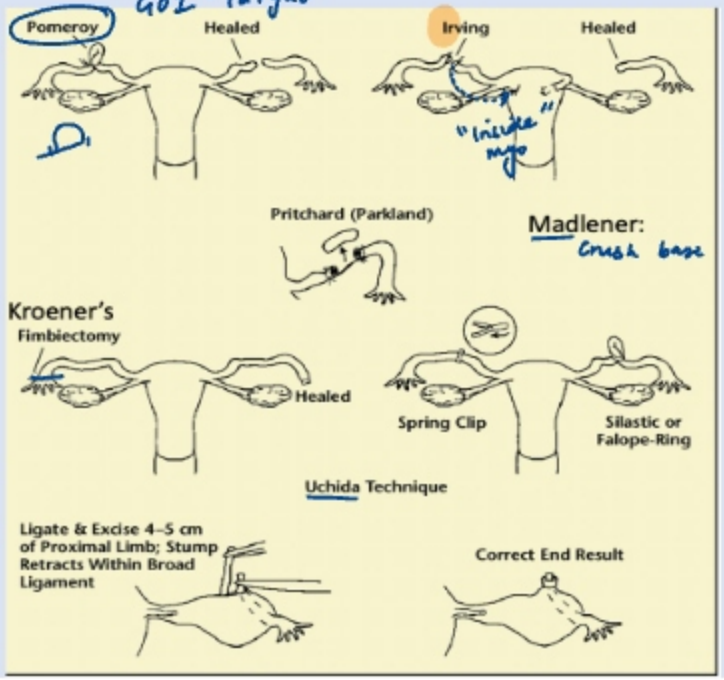
NSV → 3mm / 20 gauge
sterile after



Laparoscopic
Mini-Lap



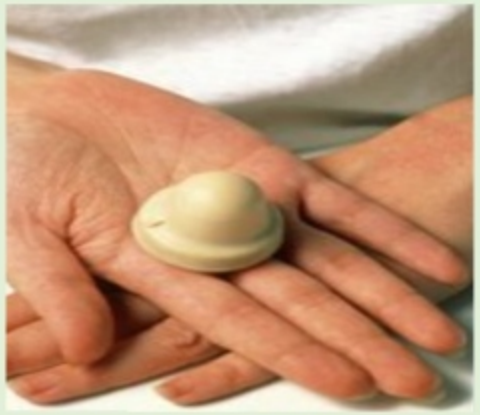
GOI - catgut



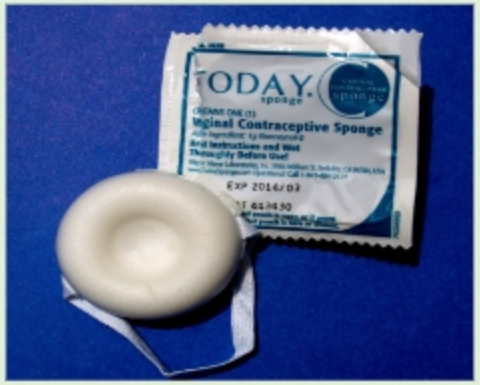
MCC of failure: Round lig
Interval: ≥ 6wks of del — Lap / mini Lap
Post-partum: Mini-Lap only
↳ >24hrs - 2in 1wk
MTP: Concurrent

Consent of spouse: NO
22-49yrs, At least one living child

Contraceptives



Diaphragm



Sponge

(+) spermicidal gel: nonoxynol-9
(−) motility

2nd gen

Norelgestromin + Ethinyl Estradiol

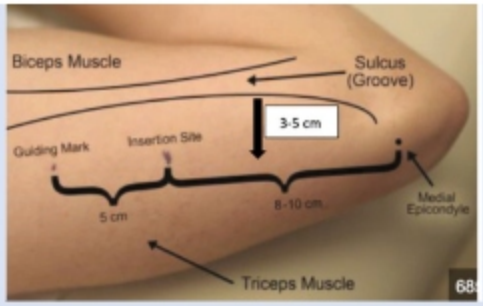
2nd

Etonogestrel + Ethinyl Estradiol

QR

68 mg

3yrs



Single rod- Etonogestrel
MOA: Inhibit ovulation, cervical mucous

NORPLANT

5yr

6 Silicone capsules
LNG

POP

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

CI → Ca breast.

ESSURE

- Hysteroscopically

- 3mm → HSG

Miscellaneous

Emergency contraceptives:

≤ lactation

LNG 1.5mg

MC

≤72hrs

SPRM

Most effective hormone

1

S/e: Hepatotoxic

≤5d

CuT - most effective - 5d of unprotected.

OCP-Yuzpee regimen:

EE 100ug + LNG 0.5mg — twice 12hr apart

Mifepristone 100mg stat

Centrochroman 30mg twice 12hr apart

NOT - MIRENA

E/ MISOPROSTOL

Contact admin
Join our group

Contraceptive of choice:

Woman on anticoagulation for DVT/ ca breast: CI - OCP/POP; IUD - CuT best

Molar pregnancy: CI - IUD; best - OCPs

Ca cervix: POP

Post-partum: POP > IUD

3weeks → ⊗ bf

3months → ✓ bf

OCPs — E: affect breast milk
- ≤6 wks - MEC 4
- 6wks - 6mon - MEC 3
- ≥6mon - MEC 2

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

Life-table analysis - better
- cumulative

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

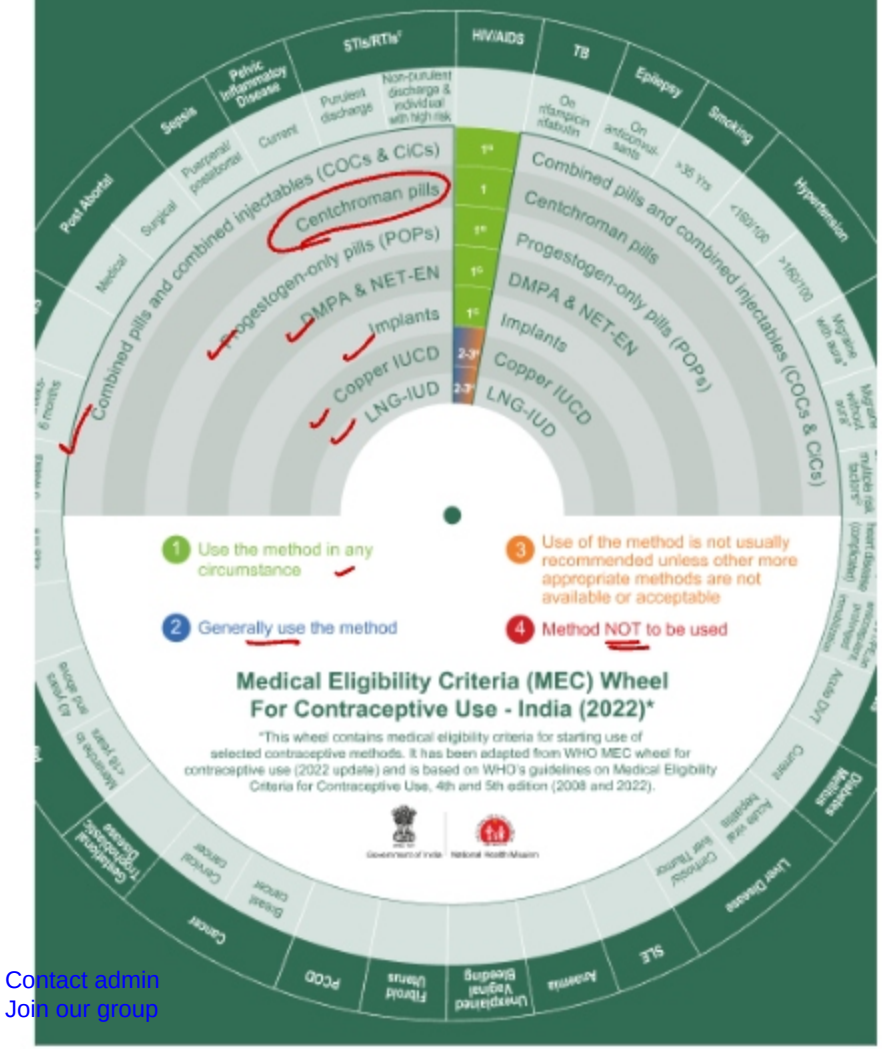
Tirumala beads

Bellagio criteria: LAM
- exclusively bf - day/night / ⊗ top feed

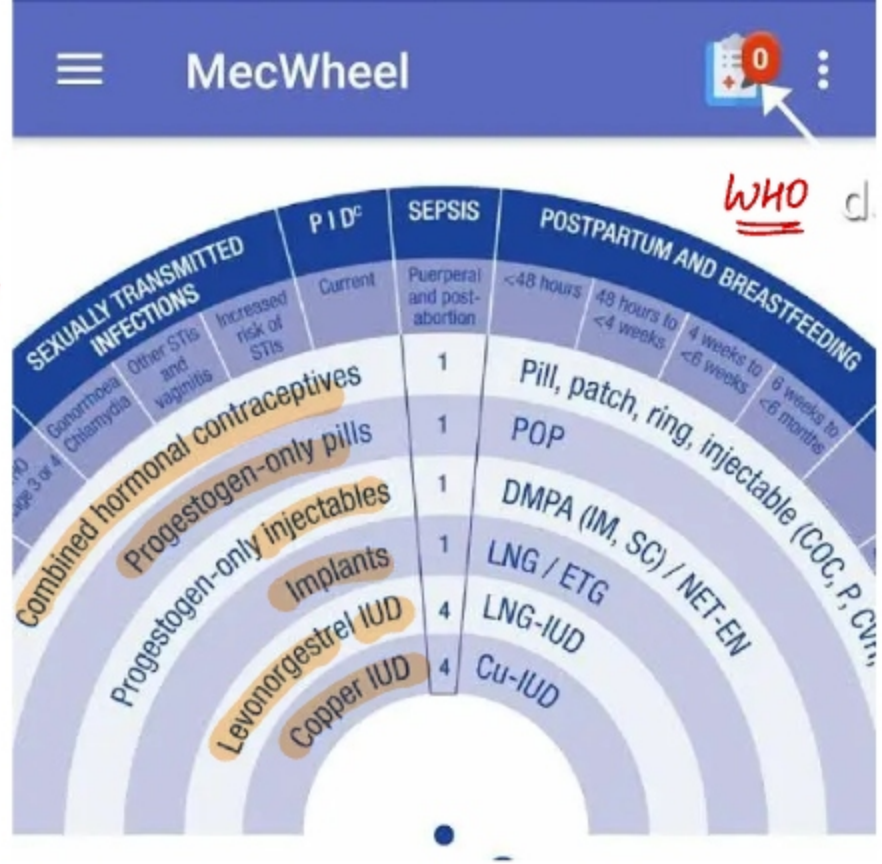
World Health Organization
India

Medical Eligibility Criteria for Contraceptive Use

(India-adapted WHO MEC Wheel)



GOI ↓ Green



WHO

OCPs
POP
Prj impling
IUD

Basic obstetrics

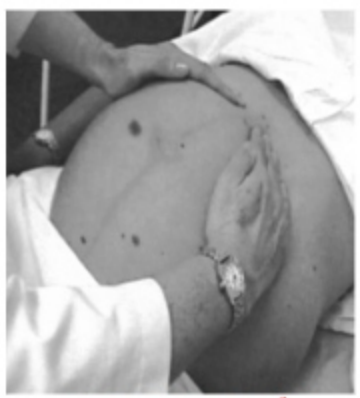
Presumptive: Felt by patient- Amenorrhea, nausea, fatigue, breast changes, Quickening → 18 – 20 wks M P
Probable: Seen by doctor – UPT +
Positive : Definitive-USG, Doppler
Ballotment: 18-20 wks
Lightening: 36 wks

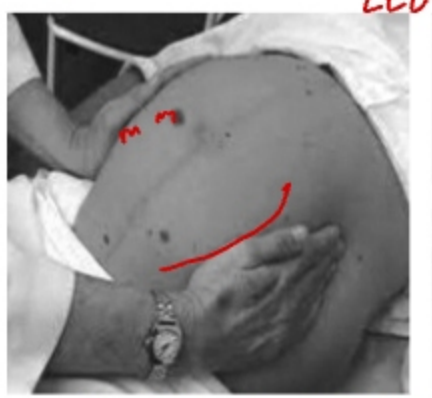
Naegeles formula: LMP + 9m + 7d – EDD
Best for GA in irregular/ OCP: USG – CRL ↓ 1st T
Oocyte retrieval: +266d
D3 ET: +263d
D5 ET: +261d

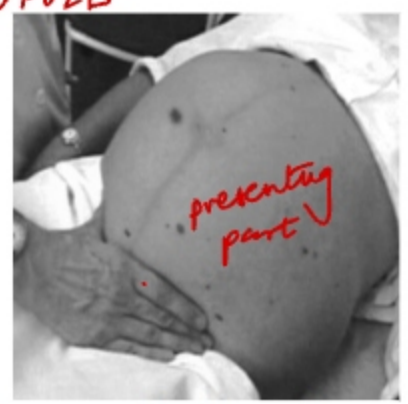
G2 P1
G-No. of conceptions
P-No. of past pregnancies >28wks
TPAL: Live issue
↓ ≥37wks 20-37 ≤20wks

Probable Signs	Description (≈ 6-8 wks)
Goodell's sign	Soft cervix
Jacquemier's Chadwick's sign	Bluish hue of ant vaginal wall
Osiander's sign	Increased pulsation felt through the lateral fornices
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

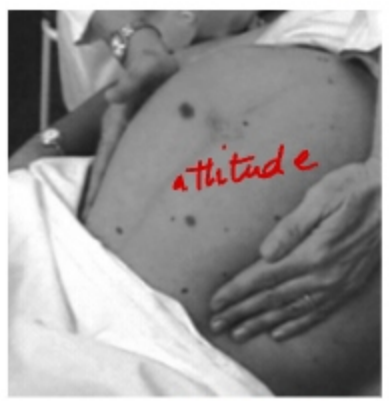
LEOPOLD


Fundal grip


Lateral / umbilical



Pawlick grip = 1st pelvic grip



PELVIC grip = 2nd pelvic grip

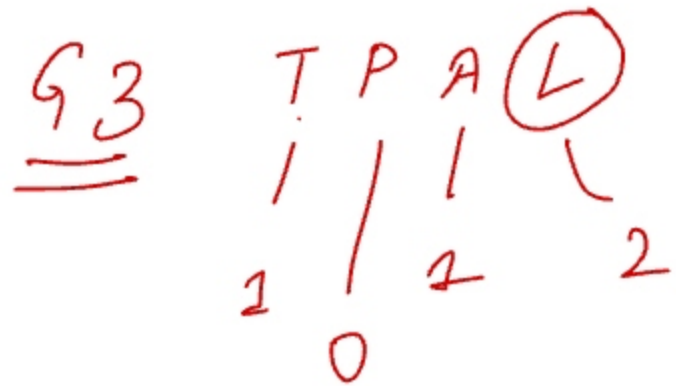
A 28-year-old pregnant woman presents for her antenatal check-up at 34 weeks gestation with a twin pregnancy. Her obstetric history includes an abortion at 12 weeks of gestation and a term delivery of healthy twins three years ago. Which of the following correctly represents her current obstetric score?

a) G3P2A1L2

b) G5P2A1L2

c) G3P1A1L2

d) G3P1A1L1



Antenatal care

ANC VISITS
Min WHO: 8
Min GOI: 4
Ideal GOI/WHO: 13

opt-anc

1st visit: ABO, Rh, Hb (at least 4 times) — every contact
FBS/ RBS/ HbA1c - overt DM (GDM: 24-28wks screening)
HIV, VDRL, HBsAg (± Hep C)
Urine R/M (ASB-R/o ≥ 10^5 CFU/ml Preterm labour / Pyelo N)
TSH
Rubella (IgG +ve → Immune)

1st visit
Vaccines: Td (2 doses; last 3 yrs-booster), Tdap at 27-36wks /Flu
CI LIVE: BCG, Varicella, MMR, HPV except Yellow fever

Calcium: 1000mg/d — 14wks POG — 6mon PP
IFA tablet: — 14wks POG — 6mon PP
(gap 1mon) ↕ 2hr gap
60mg fe + 500ug folate (AMB) (180d) (180d)
FOLATE: 500ug 3mon prior to concepn — 6mon PP
AED/ h/o NTD (4% risk)/ sickle cell anemia/Diabetics:
5mg folate - 3mon prior to canc' — 3mon PP

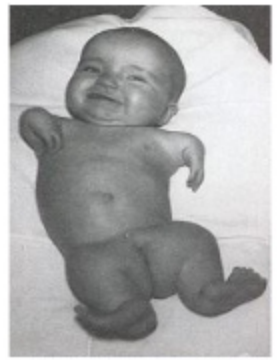
Teratogens DOC — Cat-X

- ACE / ARB - Renal agenesis
- Li - Ebstein anomaly
- Misoprostol - Mobius Sx - 6/7th
- Isotretinoin embryopathy (in 3mon) Acitretin (3yrs
- Alcohol MR / smooth philtrum
- Warfarin Conradi / disclah - epiphyses stippled
- Methotrexate clover leaf skull
- Methimazole choanal atresia / aplasia cutis
- Indomethacin (≥ 32wks POG xx) - DA - closure (PAH
- Tetracycline bone / teeth
- Thalidomide PHOCOMELIA
- Sulfonamides (3rd T xx) displace alb-bil → Kernicterus
- Tamoxifen-3mon - ambiguous genitalia
- SSRI - Paroxetine xx - resp depression / P.hyter

Category (BMI)	Total Weight Gain
Underweight (<18.5)	12.5–18 kg
Normal weight (BMI 18.5–24.9)	11-12.5 kg
Overweight (BMI 25–29.9)	7–11kg
Obese (BMI ≥30)	5–9 kg

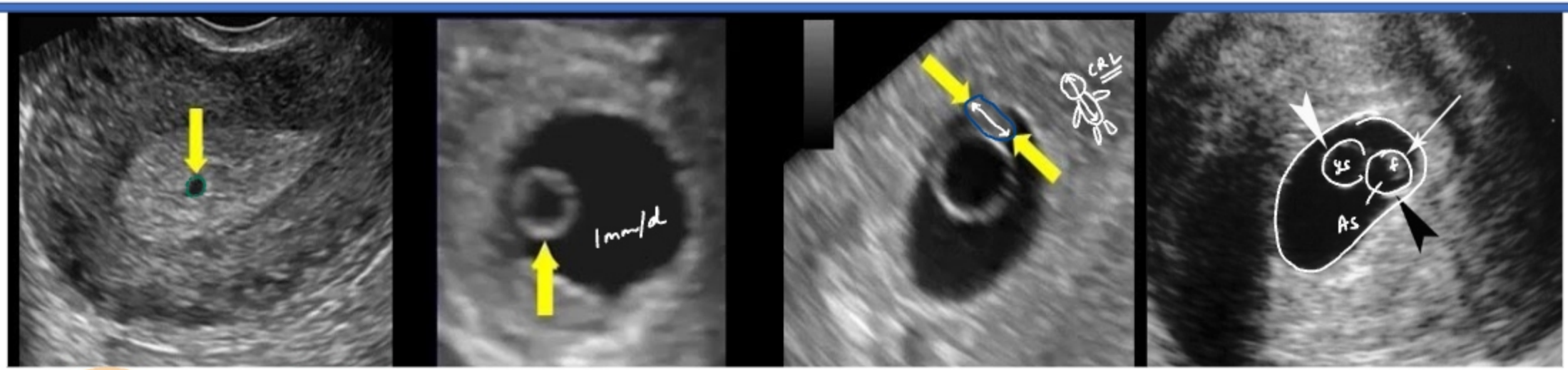
Calorie Requirement increases

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



Graves
1st T - PTU (c/e - hepatotoxic agranulocyt)
2nd / 3rd T - methimazole

Early pregnancy USG



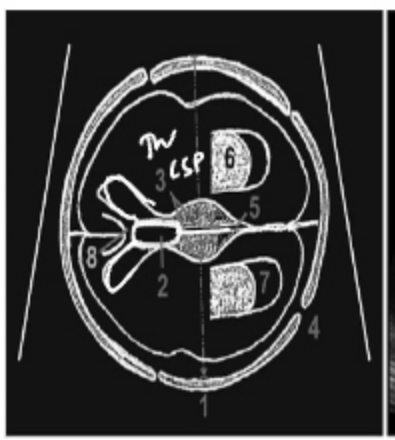
G-sac — TVS: 4.5-5 wks
confirm
Intra-decidual sign
Double decidual sign
Capsularis
Parietalis

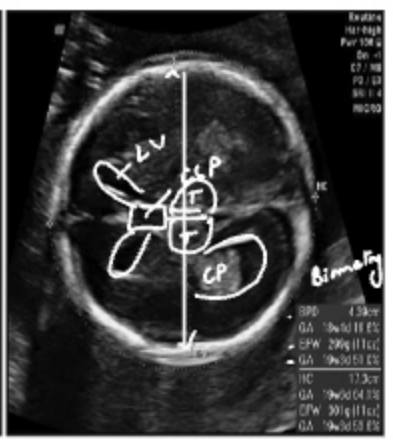
→ Yolk sac
confirms pregnancy.
5.5-6 wks

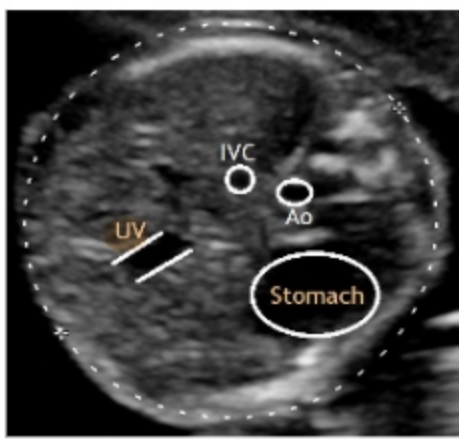
→ Embyo/fetal pole
- Fetal heart:
Confirm viability
6.5-7 wks

→ Double bleb sign
Yolk sac
Amniotic sac

Single parameter best for GA overall/ T1: CRL
T2: BPD
T3: FL
Fetal growth: AC
NT/NB scan: 11-14 wks
Anomaly/TIFFA scan: 18-22 wks (Level 2)
Fetal ECHO: High-risk — 22-24 wks







Aneuploidy screening

~95% sw

Nuchal translucency 11-14wks — <3mm (N) NT

Nuchal fold thickness (2nd T) — <6mm (N) — strongest marker in T2

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

Triple marker: 2nd T — HCG (↑) + AFP (↓) + Estriol QQ (↓)

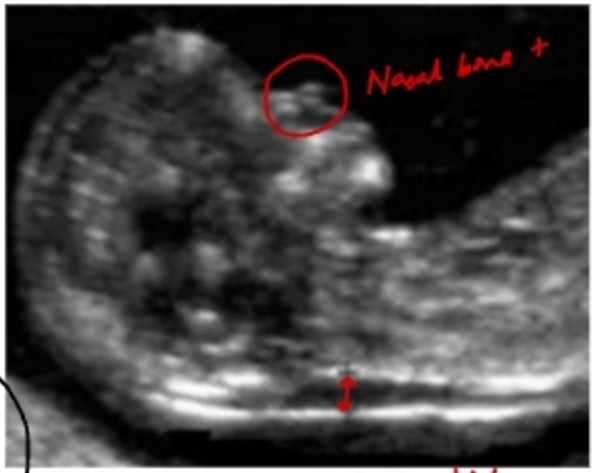
Quadruple marker: 2nd T — Inhibin-A (↑)

Down's
H - H
I - I

NIPT (Cell-free fetal DNA): ≥10 wks POG — High risk, Expensive

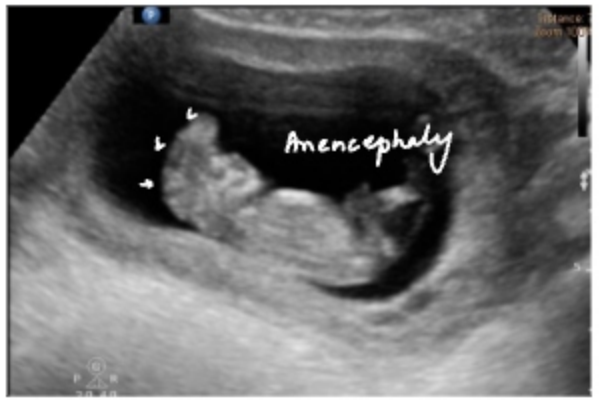
99% sw

→ Next: Confirmatory



↑NT — aneuploidy / ♡ disease

Chorionic Villous Sampling	Amniocentesis (mc)	Cordocentesis (Rh iso)
10-13 wks.	15-20 wks.	18-20 wks.
Trophoblasts	Amniocytes, fetal dermal fibroblasts	Fetal blood cells
R/o fetal loss: 1%	R/o fetal loss: 0.5 %	R/o fetal loss: 3%



earliest ≒ T1

Raised AFP: NTD / abdominal wall defects → VSG QQ

PHYSIOLOGICAL CHANGES IN PREGNANCY

↑

Blood/plasma/RBC volume ← Estradiol / Aldosterone
Retic count
WBC count
All clotting factors ↑↑
Fibrinogen
ESR
SHBG/TBG, Total protein
Total T3/T4: ↑ Free T3/T4: N
TSH: 1st T ↓ → N
On treatment for hypothyroidism
Dose: ↑
Transferrin, TIBC
LDL, HDL

CO ↑↑ - max : PP > 2nd stage of labour > 34 wks
HR, SV

IC
TV
MV
2-3 DPG (↑ O_2 delivery)

RBF, GFR

↓

Hematocrit] dilutional
Hb
Platelet
F 11/13 ↓1 ↓3
Albumin (edema ↑)
Protein C/S
Iron, ferritin
Serum Na, K, Ca, Mg

PVR
BP (DBP > SBP fall)

FRC
RV

Sr Urea
Uric acid/Creatinine

Vaginal pH ↑E ↑glycogen → ↑LA

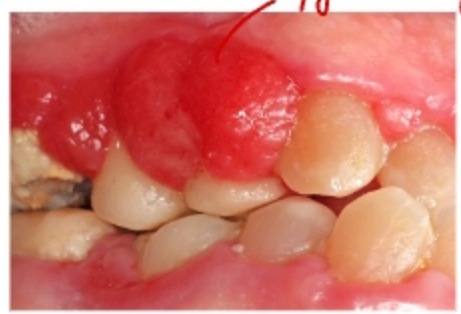
Constant

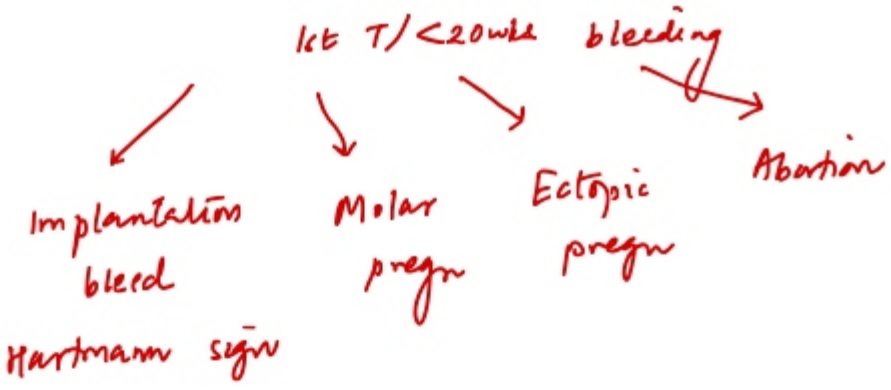
BT, CT
MCHC

EF
=

IRV
RR
Vital capacity
TLC
COMPLIANCE

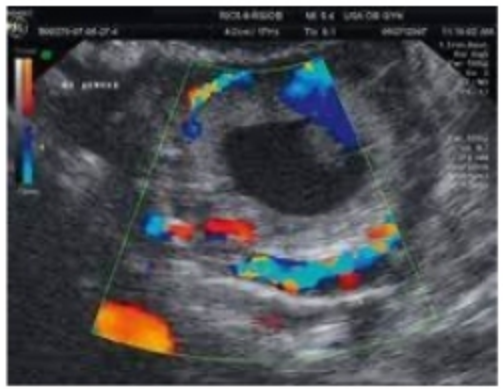
pyoderma gravidarum





Ectopic pregnancy

MC site: FT (ampulla) >> ovary
Duration max: interstitium / cornua
R/F: Past h/o ectopic, **Tubal Sx>IUD**, PID
IOC: USG



adnexal cyst
UPT +
Bagel sign / Donut sign / Ring of fire

Ectopic preg

CL cyst
- regresses by 10-12 wks

Bleeding + PAIN + cervical motion tenderness

Mx –Ruptured: Salpingectomy < Exp lap / Laparoscopic
- Unruptured: Medical Vs surgical
-Stable
-Motivated
-HCG : < 5000
-FCA : absent
-Sac: < 3.5cm
-No CI to Mtx -Hepatotoxic / P.fibrosis

OR

Day 1: MTX im 50mg/m²
Day 4, 7 : B-HCG
Repeat if <15% decline
Monitor weekly till zero

OR

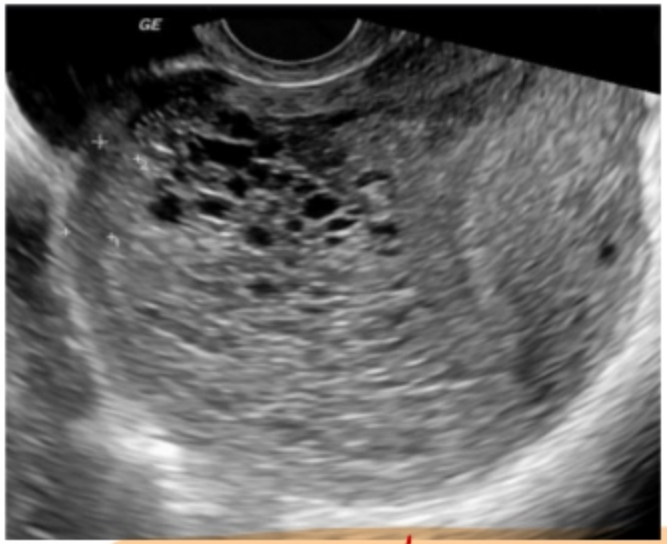
PUL: UPT + Empty Uterus
Next: Serial B-HCG x 48hrs
DOUBLING TIME : 48hrs

B-HCG
- double → (N) IUP
- plateaus → Ectopic
- declines → Complete abortion

Discriminatory zone: B-HCG should an IUP be seen
TVS - 2000 TAS - 6500

CRITERIA:
Cervical- Rubin / palman
Ovarian- Spielberg
Abdominal- Studdiform

Molar pregnancy — Hydropic degener of villi



Snowstorm / cluster of grapes

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

↑↑↑ B-HCG

↑↑

fetal parts +

focal degener

p57 +

C/F — PIH <20wks

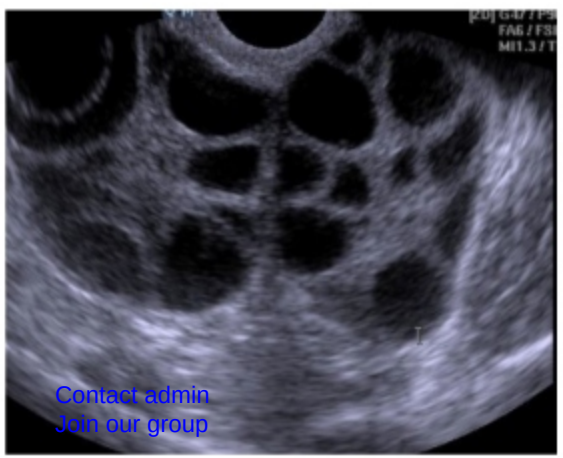
Hyperemesis gravidarum → ≥5% wt loss / ketonuria

Hyperthyroidism

Mx → Suction & evacuation

↓

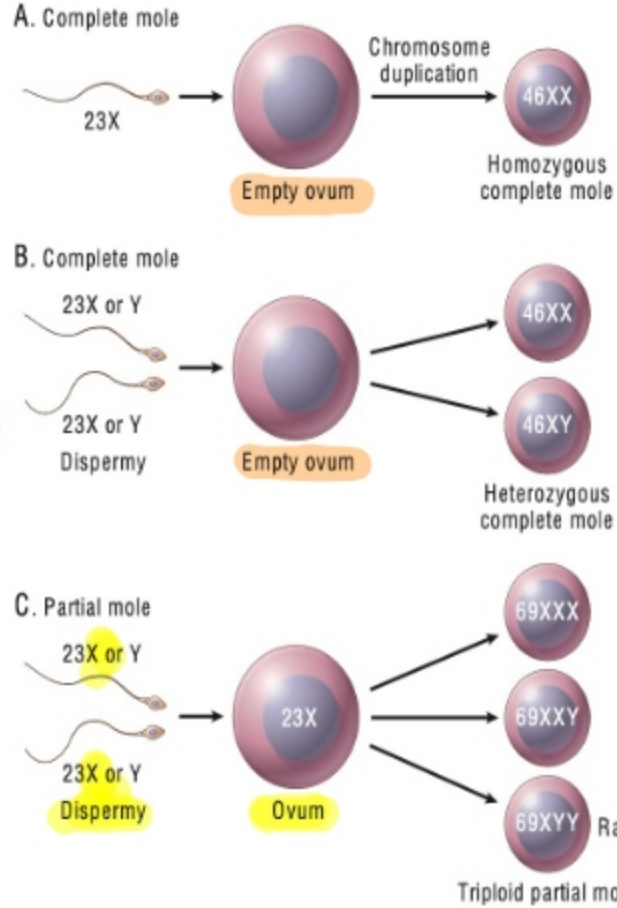
· B-HCG F/U



Theca-Lutein cysts

OHSS → Inj HMG > Clomiphene > Letrozole

acute pain dyspnea

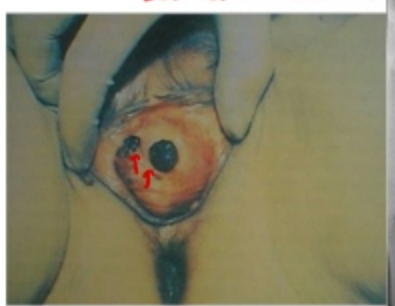


GTN

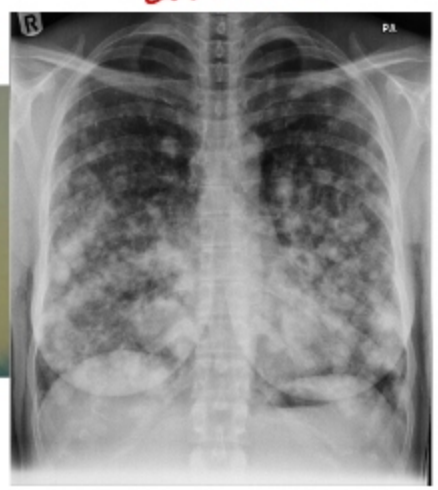
GTN: Invasive mole> CCA> PSTT>ETT
HPL: PSTT
CRITERIA:
-Persistent bleed
-Uterine subinvolution
-Shock
-Persistent TL cyst
-Mets MC: LUNG > vagina
-BHCG plateau -1,7,14,21
-BHCG rise-1,7,14
-BHCG detectable >6months
-H/P

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
B-HCG	<1000	10^3-10^4	10^4-10^5	>10^5
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

Subureteral nodules



Cannonball



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
Stage IV	All other metastatic sites → EMACO

WHO score: ≤6 → Mtx; ≥7 - EMACO

Etoposide, Methotrexate, Actinomycin, Cyclophosphamide, Oncovin

ABORTIONS → ≤20wks / ≤500g

Os open Bleeding + Pain + Uterus smaller USG: RPOC	Os open Bleeding + Pain + Uterus equal USG: Fetus, no FCA	Os closed Bleeding stopped Uterus smaller USG: Empty ET	Os closed Spotting, Pain + Uterus equal USG: Fetus, FCA +	Os closed Spotting, Pain +/- Uterus smaller USG: No FCA
incomplete abortion	inevitable abortion	Complete abortion	Threatened abortion bed rest Progesterone	Missed abortion

Early pregnancy failure: Gsac > 25mm with no fetal pole CRL >7mm with no FHR
Missed abortion Blighted ovum

MTP

<20weeks	T/E/H/S ONE DR
20-24 weeks	T/E/H TWO DR
>24 weeks	T/E Medical board: OBG / PEDIATRICS / RADIOLOGIST

Therapeutic-life of mother endangered
Eugenic –fetal anomaly
Humanitarian-rape/incest/minor/mentally ill/ divorce
Social – Contraception failure

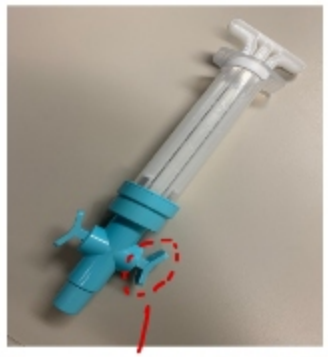
Age for consent: ≥ 18yr
Consent of husband? NO

Rape + UPT +ve (≤18yr)
1st: Call police – MLC
→ MTP – Guardian

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

Methods of MTP-First trimester

- **Medical MTP:** ≤ 9wks
  Mifepristone (RU-486) 200mg → 48hr → Misoprostol (PGE1) 800mg
- **Suction evacuation** - 12wks
- **Manual vacuum aspiration**
  60 ml 660mm Hg 6-12wks
  → LL resources / PHC



Menstrual regn syringe

Methods of MTP-Second trimester

- **Medical MTP:** Misoprostol 400mg 3 hrly (max-5)
- **Dilatation and evacuation** ovum Forceps
- **Extra-amniotic ethacridine**
- **Intra-amniotic saline**
- **Oxytocin**

Important instruments for MTP

Sim's Speculum

Cusco's self-retaining speculum

Av wall retractor

ant lip of cx Vulsellum

Hegar's serial dilⁿ (PO4 - 1)

Karman's (= PO4)

ovum forceps

blunt end curette

no. 8 ↓ easily in a non-pregnant cervical incompetence

Signs of complete evacuation :

- **No more products**
- **Bubbles seen in suction tube**
- **Grating sensation**
- **Gripping sensation**

Recurrent pregnancy loss – ≥3 consecutive pregnancy loss – Evaln: ≥ 2 consecutive

MCC in 1st trimester: chromosomal
Most viable trisomy : 21
Most lethal trisomy : 16
MCC in 2nd trimester: Structural
Mullerian — cervical incomp

Tests in RPL:
TVS
TSH, OGTT
Karyotyping
APLA
Not TORCH
Kassowitz law: syphilis
outcome improves i successive pregnancy

Single most imp cause: APLA

Clinical Criteria	Laboratory Criteria
• Vascular Thrombosis - DVT / PE / stroke • Pregnancy Morbidity: (3) × (1) a) Premature birth at ≤ 34 wks. due to preeclampsia/ UPI b) Placental insufficiency at <34wks c) ≥3 consecutive abortions at <10wks d) Death of normal fetus at >10 weeks	• Anti-Cardiolipin IgG/M — VDRL non sp • Anti-B2 glycoprotein • Lupus Anticoagulant (LAC) ↳ in vitro ↳ aPTT ↑ / Russel viper venom test ↑ 2 x 12 wks apart Plasma Mixing → aPTT ↑: APLA ↳ Hemophilia - aPTT N

1 Clinical + 1 Lab Criteria
Rx: LMWH + aspirin

Anticoagulation in pregnancy for mechanical valves / MS — warfarin + Labour → LSCS

- <12 wks — LMWH
- 12 – 36 wks — warfarin
  - ∵ teratogenic
  - ∵ Hgic disease of newborn
- ≥36 wks — LMWH switch

12 wks + Acute DVT → Rx - LMWH

Preterm labour

· GBS → 34-36 wks rectovaginal swab

Cervical incompetence: "Painless" dilⁿ of Cx in 2nd T

IOC: USG - CL ≤ 24mm

MANAGEMENT: 12 x 2 = 24 (Rescue cerclage)

12-14 wks → 36 wks

>2 PTL

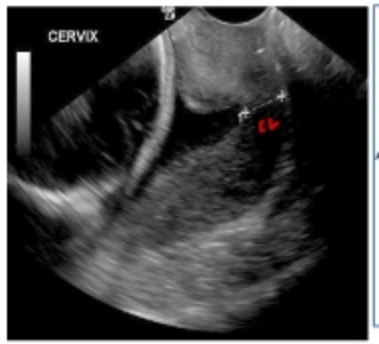
1 or 2 PTL & CL ≤ 24mm → if not met: Progesterone

Trans-vaginal Cerclage: (MC) Shirodkar / McDonald

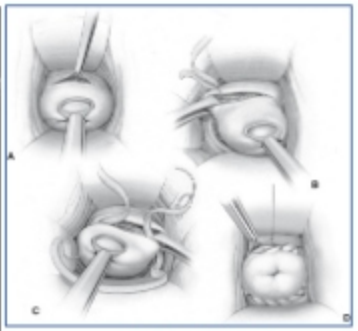
Trans-abdominal Cerclage: Laparoscopic / Benson-Dugee

Cerclage in non-pregnant: Laparoscopic / Lash-Lash

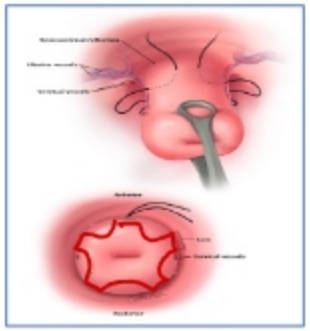
Absolute CI to cerclage: ruptured membranes / signs



V / Y tunnelling (+)



Shirodkar



McDonald

PRETERM LABOUR:

Extreme: 24-28 **Very:** 28-32 **Moderate:** 32-34 **Late:** 34-37

CONTRACTIONS (4 or more in 20min/ 8 or more in 60min) +

Cervical dilatation ≥2 cm/ Cervical effacement ≥80%

OR Fetal Fibronectin +ve - predictor ← 22-37 wks

Management of PTL and PPROM:

<34wks: Steroids + GBS prophylaxis + TOCOLYTIC

<32wks: Add $MgSO_4$ (neuroprotective)

Tocolytics: Nifedipine, Indomethacin, Ritodrine, Atosiban

1st line (CCB) ≤32 wks

Ritodrine: ♡ D; B agonist → hyperglycemia, pulmonary edema

Atosiban: SAFEST oxytocin (-)

Induce: Chorioamnionitis, fetal distress (PPROM, fever)

Amniotic fluid: Ferning, Nitrazene blue test-alkaline, Nile blue sulfatase - orange cells (lung maturity), blue cells

STEROIDS (OG)

DOC- Betamethasone 12mg x 2 doses 24 hr apart IM

GOI- Dexamethasone 6mg x 4 doses 12hr apart IM

Reduce RDS, NEC, IVH, neonatal mortality

Neonatal jaundice- No change

PIH

Uterine artery → Arcuate artery → Radial artery → Basilar artery → Spiral artery

Pathophysiology: Failure of invasion of spiral artery by extra-villious cytotrophoblasts

TxA2, sFlt-1, TNF-A, Thromboxane A2 (↑) PGI_2 / VEGF (↓)

R/F: Primi, Twins, DM, Molar pregnancy

Prediction of Eary onset preclampsia: ≤34 wks POG → uterine A notching >24wks persistent → smoking, calcium, Aspirin

Condition	Criteria
Chronic hypertension	BP ≥140/90 mm Hg on 2 occasions 4 hours apart / Persisting for >12weeks postpartum (<20wks)
Gestational hypertension	BP ≥140/90 mm Hg on 2 occasions 4 hours apart - >20 wks / resolve by <12wks
Preeclampsia	Hypertension PLUS PROTEINURIA (Congo red urine test) ≥300 mg/24 h or Urine protein: creatinine ratio ≥ 0.3, or Dipstick 1+ persistent
Severe Preeclampsia HELLP/ Impending eclampsia ↓ · $MgSO_4$ Ist · iv Labetalol · Immed TOP	• BP ≥ 160/110 mmHg • S.creatinine ≥ 1.1 mg/dl (end organ) • Hemolytic anemia → LDH >600 / Bil >1.2mg/dl / schistocytes (Tennerse criteria) • Platelet count < 1 lakh • Liver enzymes raised ≥ 2 times its N value • Pulmonary edema • Visual symptoms/Headache (cerebral edema) • Epigastric pain (Subcapsular bleed)
Eclampsia → Ist: Lt lat decubitus, ABC → $MgSO_4$	Convulsions

TOP:
Mild preclampsia- 37 wks
Severe preclampsia- 34 wks
Eclampsia/ HELLP- Immediate TOP

Antihypertensives in pregnancy:
Labetalol- DOC (20mg iv bolus)
Max IV dose: 300mg oral - 2400mg max.
Methyldopa
Nifedipine-Nitroprusside- Nitroglycerine
Hydralazine
Betablockers, ARB/ACE, Diuretics,
Diazoxide CI BAD

Eclampsia: DOC: $MgSO_4$
MOA: NMDA ⊖ (neuroprotective) - minor ↓ Ca^{2+} ⊖ cerebral blood flow (x renal)
↑↑ doses - tocolytic (prevent abruptio)
REGIMEN LOADING (n Vol)
PRITCHARD
14g < 10g im (50% w/v) - 5g im each buttock
4g iv (20% w/v) 12ml NS + 8ml $MgSO_4$
1g 2ml

MAINTAINENCE: 5g (50%) every 4hrly im-24hrs after last convusion/ delivery whichever is later

Therapeutic level- 4-7 meq/L
Monitoring- · DTR - lsb s/o toxicity - sluggish → Next: Ca gluconate 10%
· RR (N ≥ 12)
· Urine output (N > 100ml/4hrs or > 30ml/hr)
(excrn renal)

GDM

24-28 wks – screen

Guidelines	Fasting mg/dl (mmol/L)	Glucose Challenge	1-hour mg/dL (mmol/L)	2-hour mg/dL(mmol/L)
IADPSG (AIIMS)	≥ 92	75 g OGTT	≥ 180 (9×2)	≥ 153 (1+5+3 = 9; 5-3 = 2)
DIPSI (GOI)		75 g OGTT		≥ 140

Congenital anomalies – overt DM

CVS: MC: VSD **Most specific:** TGA

-Most common reversible cardiac finding – HOCM

-Most specific overall – Caudal regression Sx / sacral agenesis

Macrosomia – GDM / overt DM – Bcell – ↑↑insulin → >4.5kg → LSCS elective (shoulder dystocia)

Liquor: Poly H

Pendersar hypothesis

Neonatal: Hypoglycemia / ↓Ca / ↓Mg / ↓K+ / polycythemia / jaundice / RDS / NEC / Lazy Lt colon

Priscilla White Classification: A = GDM → A1 → diet controlled; A2 → insulin

non type A = overt

Timing of delivery: well controlled → 39 wks; uncontrolled → 37 wks

Sirenomelia

Goals of Rx: GDM: MNT → ✗ → insulin

FBS: <95 ✓

1 hour PP: 140mg/dl

2 hour PP: 120mg/dl

HbA1C: <6

Insulin Management for Labour

- Given evening dose, withhold morning dose of insulin
- Monitor sugar hourly
- Glucose > 100 mg/dl, infuse regular insulin + NS
- Glucose <70 mg/dl-5% dextrose

Liver diseases in pregnancy

HELLP

- Hemolytic anemia
- Elevated OT/PT
- Low plt

AFLP

- Acute liver failure - T3
- LCHAD ↓ fetus
  - OT/PT ↑↑
  - Hypoglycemia
  - ↑NH3
- Rx - Immediate TOP

ICP

- BILE ACIDS ↑
- Pruritus ↑↑
- Rx → UDCA
  - TOP x 37 wks

Viral Hepatitis

- Hep E
- ↑↑ maternal mortality (20%)

Anemia and Heart disorders in pregnancy

Anemia: <11g/dl
MC: Dilutional > IDA
Deworming: 400mg albendazole (T2)
Management of anemia:
>7g/dl:
<34wks: IFA - BD (start inreap of POG)
>34wks/noncompliant: parenteral Fe
<7g/dl:
<34wks: parenteral Fe
>34wks or <5g/dl or Heart failure: BT

Parenteral iron: Fe sucrose / Fe carboxy maltose

Ganzoni formula: 2.4 X Pre-pregnancy weight X Hb deficit + 500mg

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

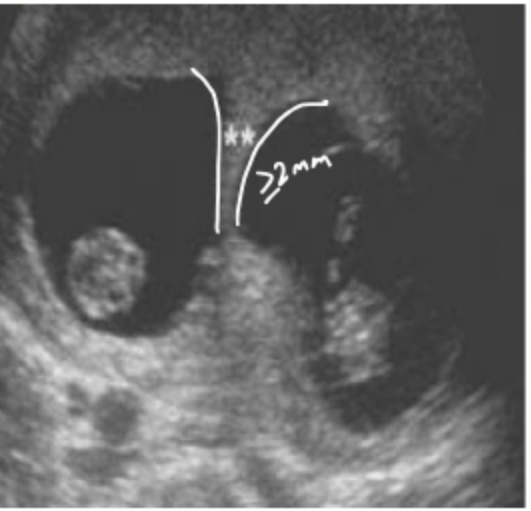
Not physiological: Pansystolic/diastolic murmur
2nd-4th ics high-pitch pansystolic: Mammary souffle
S3: physiological (ejecn systolic) S4 - always pathological
MC heart disease: MS
MC time for heart failure: Postpartum > 2nd stage of labour > 34wks

Delivery mode: NVD + instrumental (forceps)
CI: Methylergometrine
Peripartum CMP: systolic dysfn (DCM) + T3 — 5mon PP + idiopathic
Twin, Preclampsia, Obese (PRL) ↳ - Bromocriptine

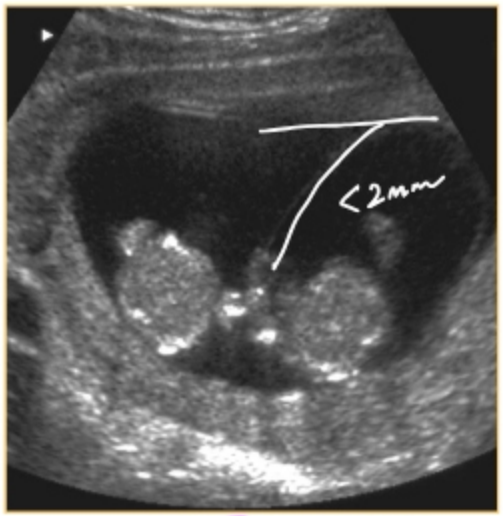
↳ avoid preg x 1yr

WHO IV: pregnancy not recommended (≤ MTP)
Pulmonary arterial hypertension
Severe ventricular dysfunction (EF<35%)
Severe mitral stenosis
Severe aortic stenosis
Marfans with Severe aortic dilatation
Vascular Ehlers-Danlos
Severe coarctation
Fontan with any complication
Peripartum CMP with residual defect
Eisenmenger syndrome

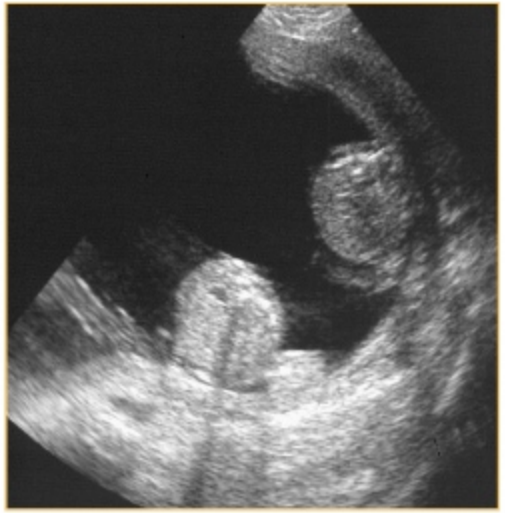
Twin pregnancy



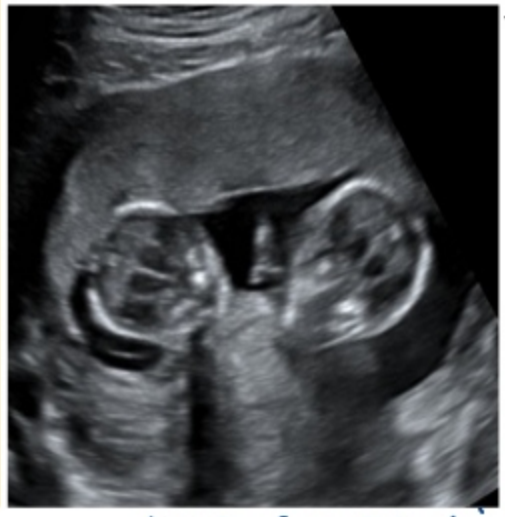
DCDA { Dizygotic
0-4d monozygotic
Twin peak / Lambda



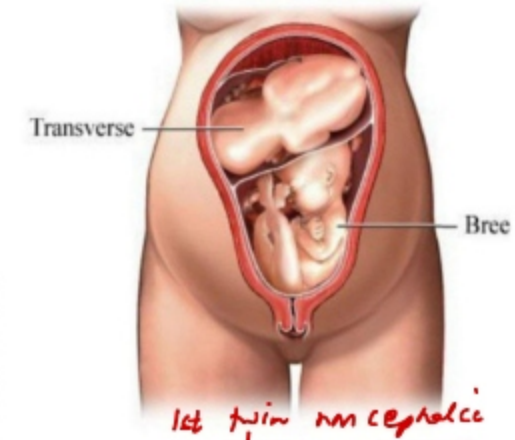
MCDA - 4-8d
T sign



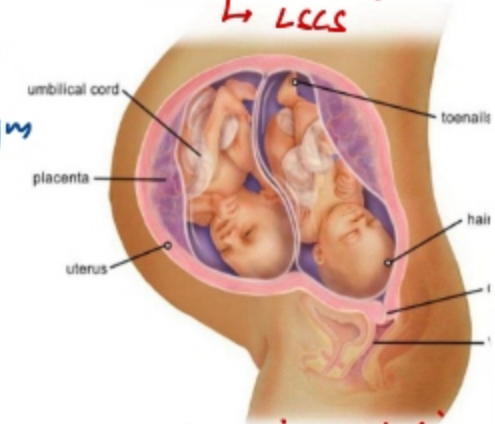
MAMC - 8-12d
Lcord entanglement



>12d - Conjoined twins
Para > Thoracopagus



1st twin non cephalic
↳ LSCS



1st twin cephalic
↳ NVD

Most important prognostic factor: Chorionicity → A-V unbalanced anastamoses

TTTS - Twin to twin transfusion Sx

TAPS Twin anemia-polycythemia

TRAP twin reversed arterial perfusion

QUINTERO STAGING

Stage 1: Oligohydramnios-Polyhydramnios

Stage 2-: Absent UB in donor

Stage 3: Doppler abnormalities

Stage 4: Fetal hydrops

Rx: Laser ablⁿ

Timing of delivery:

DCDA- 38wks

MCDA- 36wks

MAMC/ Conjoined/Triplets- 34wks (LSCS only)

Second twin in transverse lie, no previous LSCS:

IPV ✗ (↓GA)

Rh iso-immunisation

Rh negative woman with Rh positive husband

Perform ICT titer[2]

ICT titer negative

Repeat titer every 4 wk

Give anti-D (300 µg IM) prophylaxis at 28 to 32

Repeat anti-D (300 µg IM) within 72 h of birth if baby is Rh positive

Deliver at 39 weeks
Rapid cord clamping

ICT titer <1:16 dilution

Repeat titer every 2 wk

Deliver at normal time
No anti-D prophylaxis needed

Deliver at 37 weeks

ICT titer: 1:16 dilution or more

Monitor every 2 wk:
Fetal USG (20 wk onwards): MCA-PSV and features of hydrops

MCA-PSV: 1.5 MOM or more

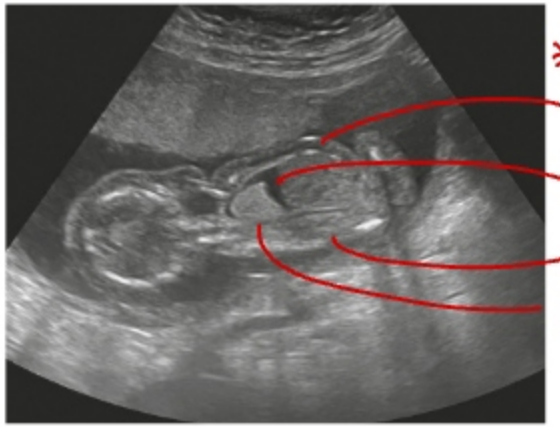
Perform cordocentesis: perform IUT if fetal Hb<10 gm/dL

Repeat IUT after 2 wk and every 3 wk thereafter[3]

Deliver at 34 weeks

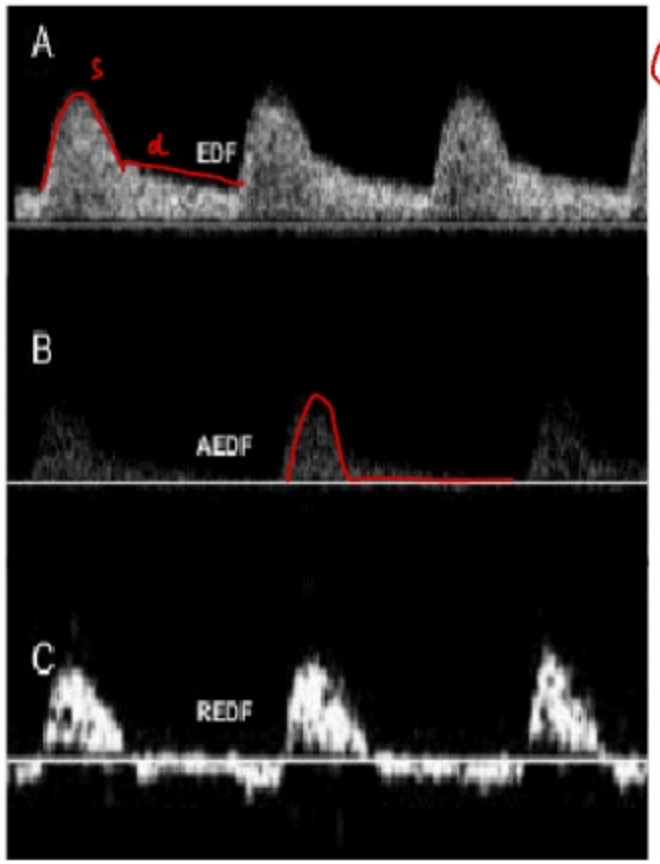
Features of hydrops present

Anti-D: RhoGam – IgG – anti-D
<12 weeks: 50 ug
>12weeks: 300ug (30ml fetal blood)
0.1ml-Alloimmunization
Half-life: 21d
Avoid methylergometrine



IUGR and abnormal amniotic fluid

IUGR: EFW <10th centile + AbN Doppler
Umbilical artery doppler



(N) – S/D ratio (↑) (abN)
(PI)
Pulsatility index
↓
absent EDF
/ ≥34wks → TOP
\ <34wks → steroids + maintain Doppler + plan delivery
↓
Reversal EDF
/ ≥32wks → LTOP
\ <32wks → Lsteroids + MgSO4 + plan D

Ductus venosus reversal: ('a wave') – acute – acidemia fetal
Cerebro-placental ratio <5th centile: most sn

RCA PI ↓
umb A PI ↑

AMNIOTIC FLUID
Maximum amniotic fluid: 34wks
Major contributor: Urine
Golden- Rh isoimmu
Tobacco- IUD
Green- Meconium / post-term
AFI: (N) 5-25
SDP: (N) 2-8

Uteroplacental insufficiency: (↓)
Renal agenesis: (↓)
Barter syndrome in fetus: (↑)
PUV: (↓)
Esophageal atresia: (↑)
Cleft lip/palate: (↑)
NTD: (↑)
Omphalocele: (↑)
Fetal anemia: (↑)
GDM: (↑)
Twins: (↑)
Trisomy: (↑)
Anencephaly: (↑)

OLIGO
Potter sequence: Pulm hypoplasia
Cord compression
Amniotic band Sx/ Streeter Sx

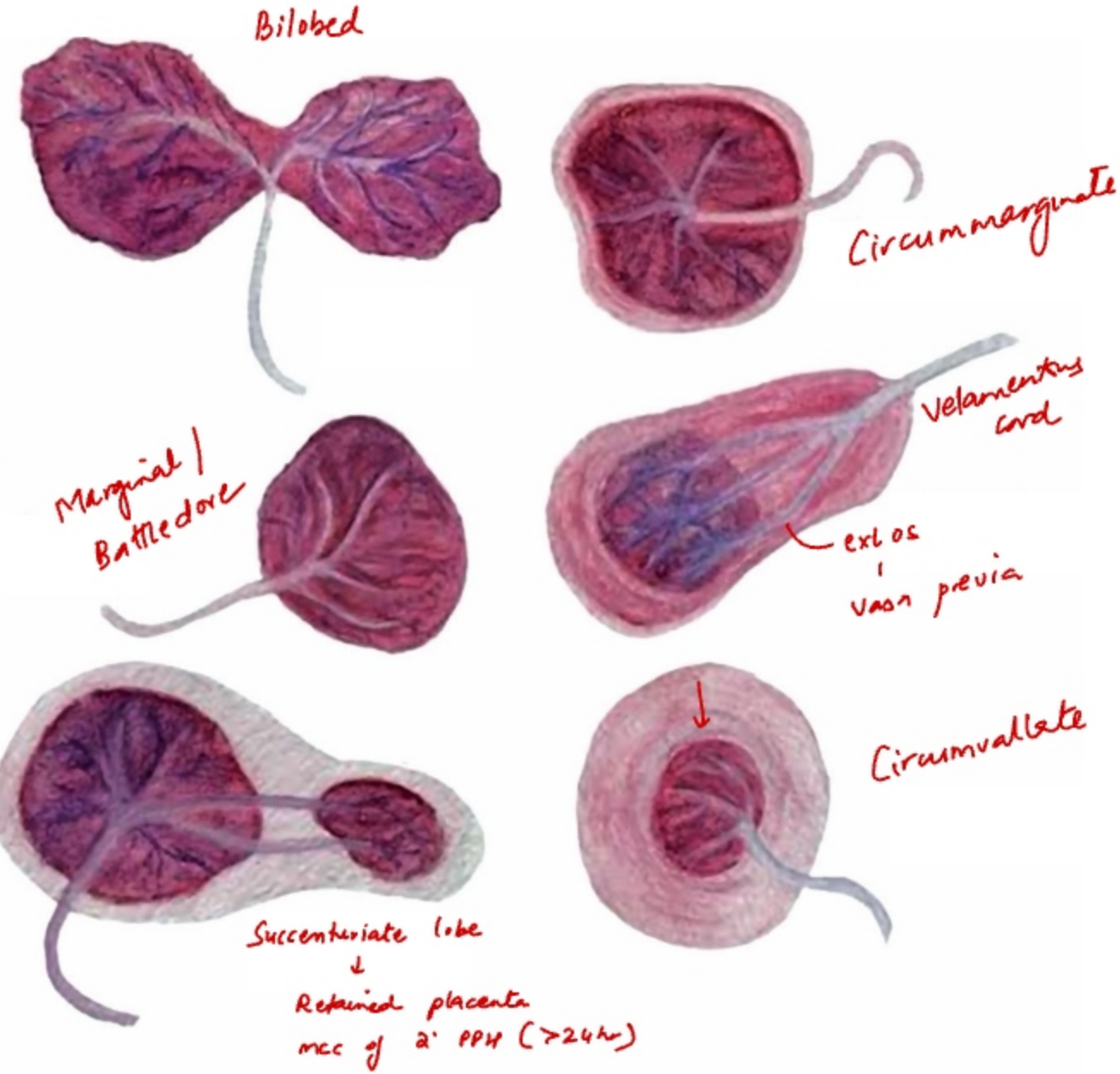
POLY:
Preterm labour and PROM
Postpartum Hemorrhage (PPH)
Cord prolapse
Malpresentations


'Disruption'

PLACENTA / CORD ABNORMALITIES

Normal: Weight: 500 g, Diameter 20 cm
Placentomegaly: >4cm — CHORIONIC ANGIOMA
Decidua basalis: maternal
Chorion frondosum: fetal
Discoidal
Deciduate
Hemochorional
Umbilical cord: 30-70cm
Coiling index: Coils/ total length (N-0.2)
SINGLE umbilical artery: ↑ underlying congenital anomalies

Cord prolapse "Bag of worms"
Max risk in: transverse lie
Next:
-Prepare for urgent LSCS (Definitive)
-Tredelenburg position ↑
-Fill UB (Vago's)
-Relieve pressure off cord: Lift presenting part
-Don't touch cord
Cord presentation: membranes intact → LSCS Next



Antepartum hemorrhage

> PERIOD OF VIABILITY

PLACENTA PREVIA

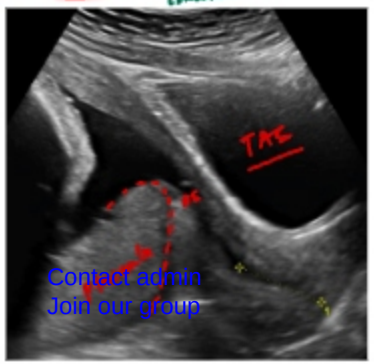
- R/F: LSCS/ Multiparity/ smoking
- Warning bleed
- Painless, bright red bleed with soft uterus "wakes in a pool"
- FHS-normal
- Fundal height=POG
- Malpresentations common: transverse lie
- Apt test negative
- Stallworthy sign-posterior

descent → FHR ↓

PV CI — TVS / TAS — IOC

<37wks mother stable fetal → McAfee-Johnson conservative

≥37wks/unstable → LSCS



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

VASA PREVIA

Immediate LSCS

ABRUPTIO PLACENTA

- Trauma/PIH QA
- Painful, dark red bleed with tense tender uterus
- Fetal distress +
- Fundal height >POG
- DIC (Thromboplastin) (Concealed)
- Page classification
- Concealed/ Revealed/ Mixed

Premature placental separ

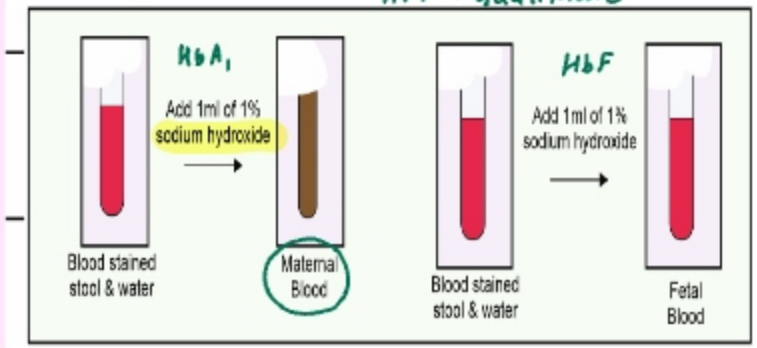
- NEVER - TOCOLYSIS

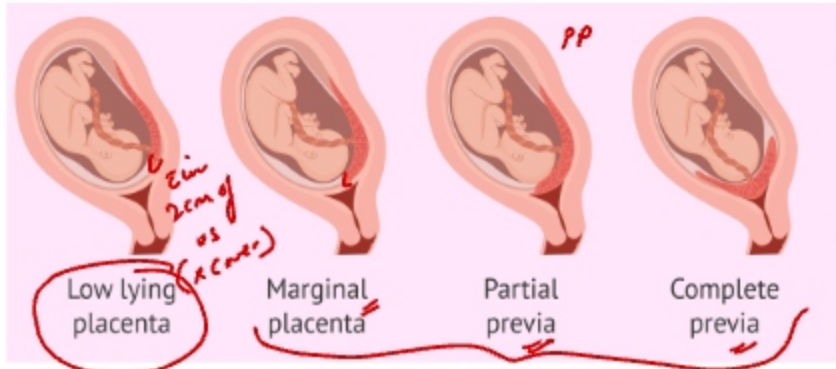
<34wks → Steroids

≥34wks / Unstable / DIC → IOL

KB test - Quantitative (acid)

APT - Qualitative



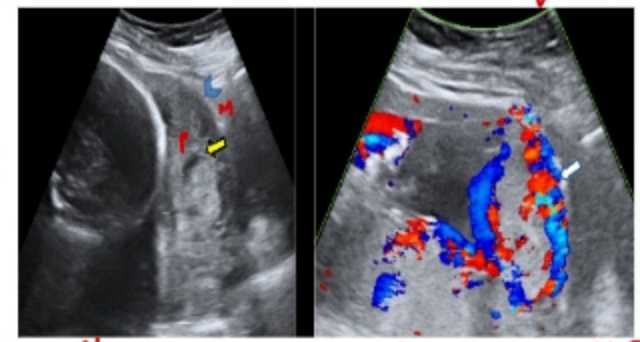


PLACENTA ACCRETA SPECTRUM

Nitabuch mem / Fibrinoid layer xx

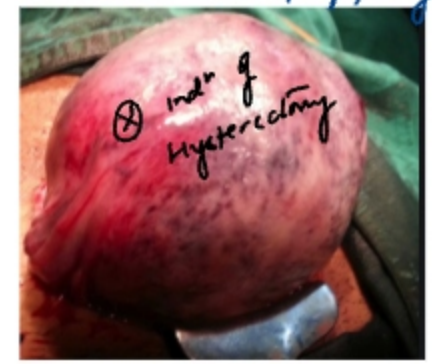
R/F: H/o LSCS, PP

- Accreta: adhered
- Increta: invade
- Percreta: perforated / penetrate
- IOC: USG → MRI (problem solving)
- TOC: Caesarean hysterectomy / UB injury BT



Clear zone retroplacental xx — PLACENTAL LAKES ++

- Convulsive uterus / apoplexy - concealed



Abruptio + IUFD

A pregnant woman at 30 weeks presents with painful bleeding PV, reduced fetal movement, increased uterine tone, and absent FHR. BP is 166/98 mmHg, and the cervix is 6cm dilated, 70% effaced with intact membranes. What is the next best step?

non-interference

IOL

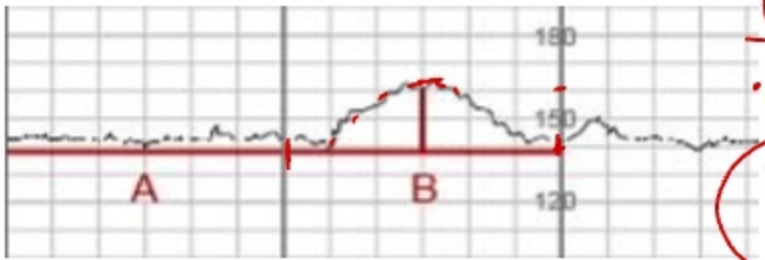
- Emergency LSCS XX
- Start Antihypertensives and emergency LSCS XX
- Start Antihypertensives and ARM
- Tocolysis XX

Antepartum fetal monitoring

Manning = BPP

Decreased fetal count: Cardiff count to 10
↳ (N) in 2hrs
↳ abN ≥ 12hrs

Next: NST x 20min
↓ Non-reactive
NST x 20min
↳ Non reactive → BPP



(N) NST

- FHR: 110 - 160 bpm

fetal tachy
↳ maternal fever

- Accelerations ≥ 2] in
  > 15 bpm >15 s] 20 min
- beat to beat variability
  5 - 25 bpm
- Decelerations - NO

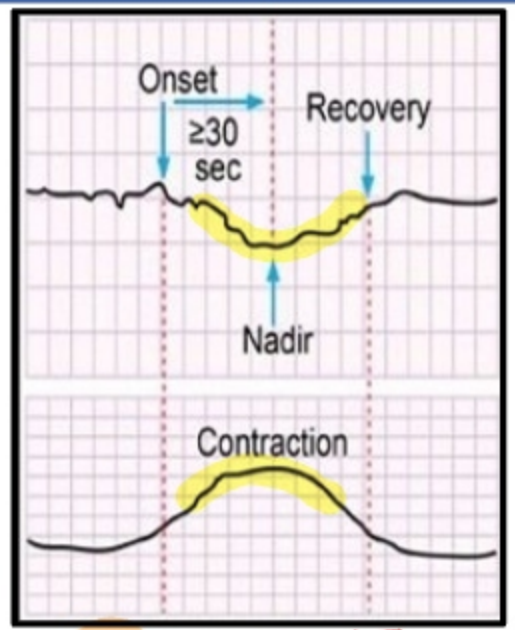
Biophysical Parameter	Normal (2)	Abnormal (0)
Qualitative AFI	AFI between 10 and 20	AFI less than 10 or more than 20
Reactive FHR	Two episodes of FHR acceleration of ≥ 15 beats/minute and of ate least 15 sec	Less than two episodes
Fetal tone	At least 1 episode of active extension with return to flexion of fetal limb (s) or trunk	Either slow or absent fetal movement
Fetal breathing	At least 1 episode of fetal breathing in 30min	Absent
Gross body movement	At least 3 discrete body/limb movement in 30 minutes	2 or fewer episodes of body /limb movements in 30 minutes

- BPP score correlates ∝ fetal hypoxia/acidemia
  - 8/10 → Reassure
  - 6 → EQUIVOCAL
    - ≥ 36wks → TOP
    - < 36wks - Monitor closely
  - 0/4 → TOP Immediate

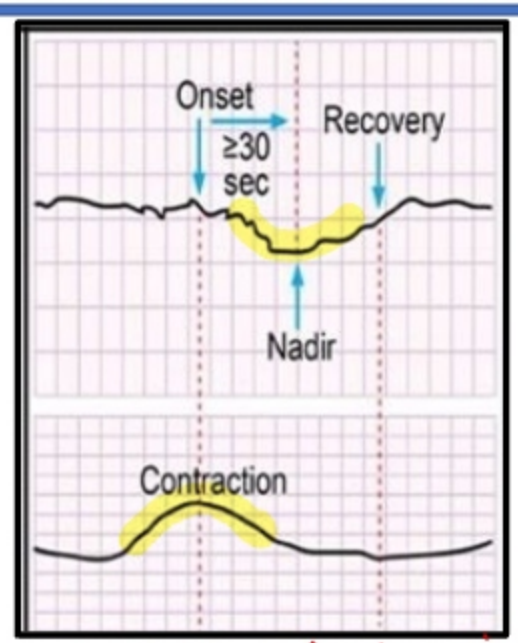
Modified BPP: NST + AFI

Intrapartum fetal monitoring

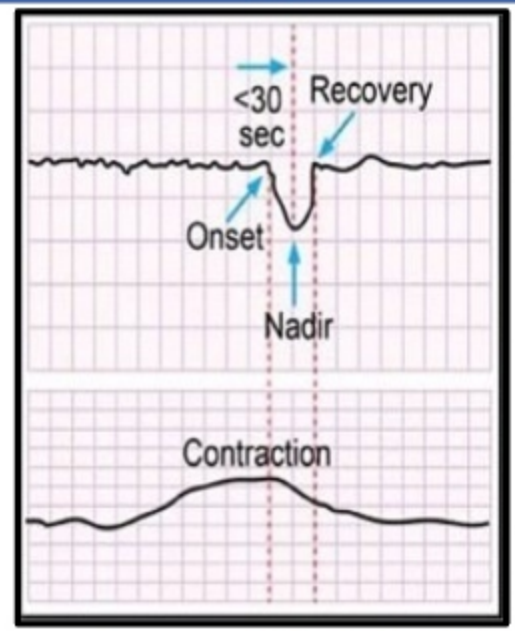
CTG



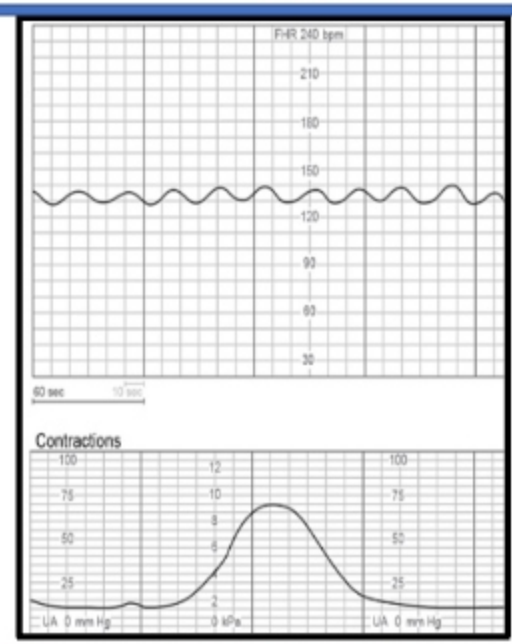
Early decelerations
↳ fetal head compression
↓
Reassure



Late decelerations
↳ Uteroplacental insufficiency
↓
Intra-uterine resuscitn
- ✗ → TOP
- oxytocin IL
- iv fluids
- O_2
- Lt lat decubitus



variable deceler
↓
. cord compression



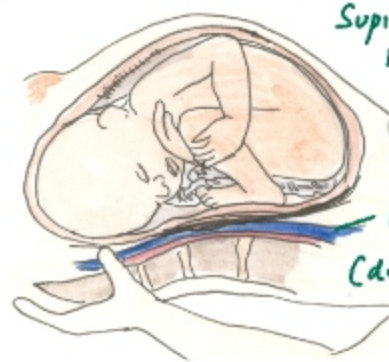
SINUSOIDAL
↓
fetal anemia
- Rh iso
- vasa previa
- parvovirus

QQ

Category 3 CTG :

1. **Sinusoidal heart rate pattern**
2. **Absent variability with any of the following :**

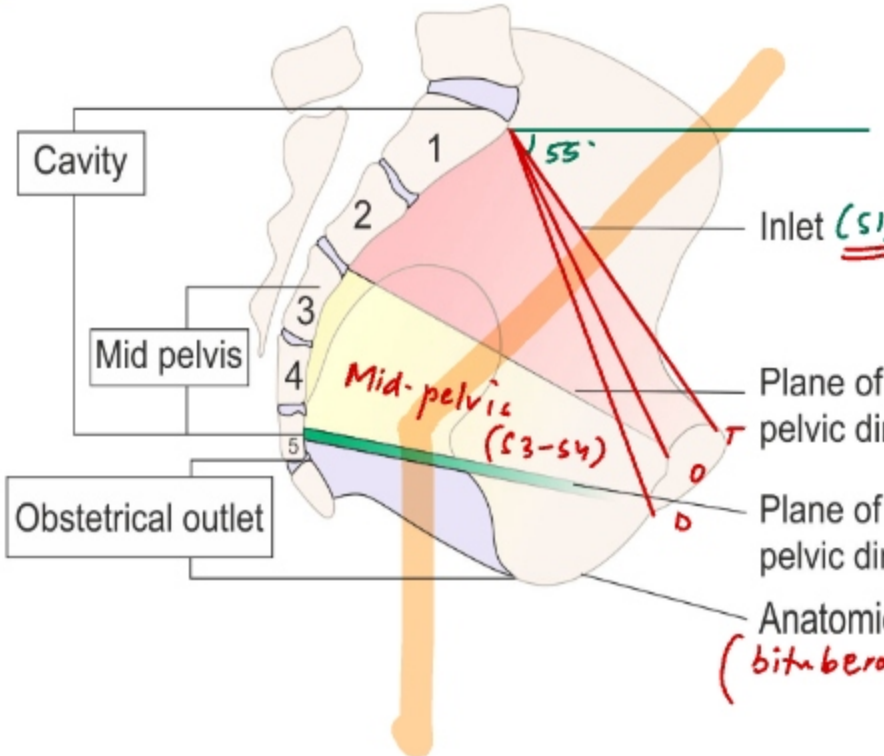
- **Persistent bradycardia**
- **Persistent late deceleration**
- **Persistent variable deceleration**



Supine hypotension Sx

IVC (dextro-rotn)

Maternal pelvis



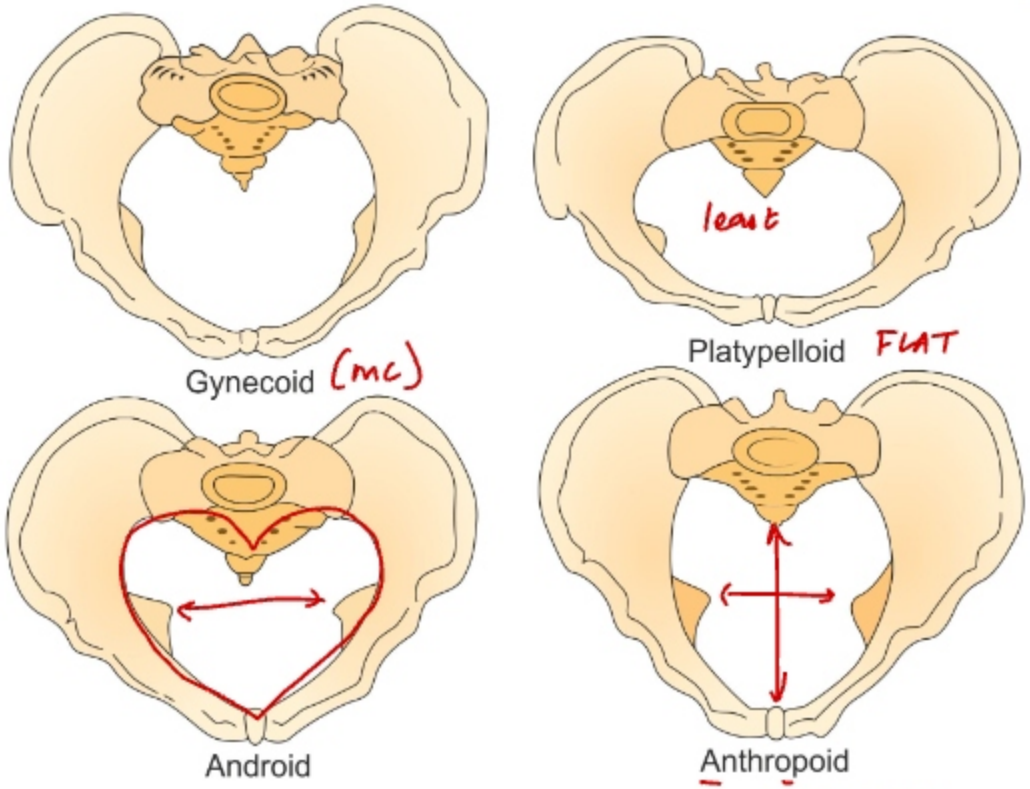
Inlet (S1)

T - 11cm
O - 10 cm
D - 12cm (clinical)

Plane of greatest pelvic dimensions (S2-S3) - 12cm (trans)

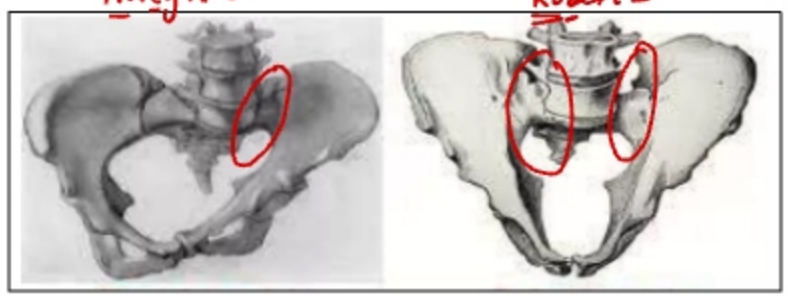
Plane of least pelvic dimensions (S4-S5) - ischial spine
↳ 10cm

Anatomical outlet
(bituberous diameter)
Ltra



Contracted pelvis:
Obstetric conjugate- < 10cm
Interischial diameter- < 8cm
Bituberous diameter- < 8cm

Naegle's — Robert's



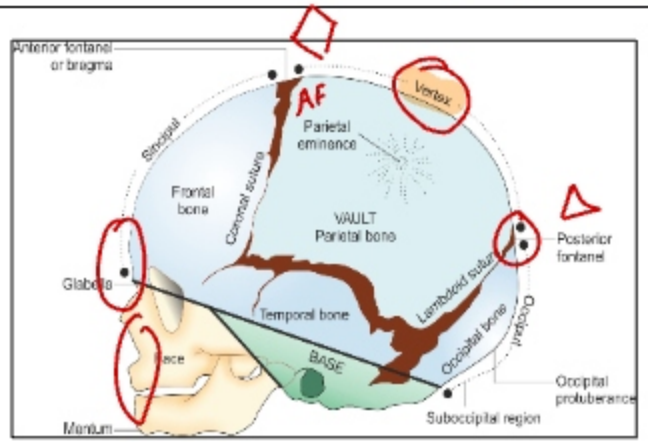
Infra-umbilical flattening and FHS in flank: OP
Management: wait & watch

MC: Gynecad
Least common: Platypelloid
AP > transverse: Anthropoid
Face to pubis: Anthropoid
Persistent OP: Anthropoid (Direct OP)
DTA: Android ← ROP / LOP
↳ Moulding ++ → LSCS

Fetal skull diameters

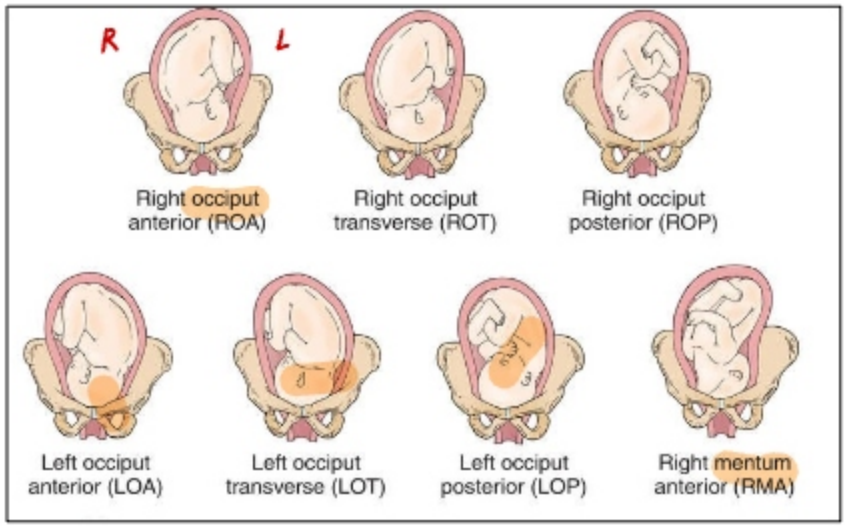
Lie: Orientation of the long axis of the fetus relative to the long axis of the uterus (Longitudinal/ Transverse/ Oblique)
Presentation: Part of the fetus that will be delivered first (Cephalic/ Breech/ Shoulder)
Presenting part: Part of the presentation felt by the examining finger through the cervical opening. (Vertex/Face/Brow)
Attitude: Relation of different parts of the fetus to one another
Denominator: Bony point of reference on the presenting part (Occiput/ Sacrum/ Mentum)

Diameter	Attitude of the head	Presentation
Suboccipitobregmatic 9.5 cm SOB	Complete flexion	Vertex
Suboccipitofrontal 10 cm	Incomplete flexion	Vertex
Occipitofrontal 11.5cm	Marked deflexion	Vertex
Mentovertical 14 cm	Partial extension	Brow LSCS
Submentobregmatic 9.5 cm SMB	Complete extension	Face MC in Anencephaly



Face VS Breech on PV:

ME — ME
O
O — O — Ischial tuberosity



Most common OA position: LOA
Most common OP position: ROP

MC engaging transverse diameter: BPD 9.5cm

MODIFIED BISHOP SCORE

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	

≥6 – IOL favourable

Induction of labour:
Dinoprostone: PGE_2 (cerviprime gel)
Misoprostol / Mifepristone/ Oxytocin
Laminaria tents/ Foley's with extra-amniotic saline/
Stripping of membranes/ ARM → Local PG ↑↑
No medical IOL if h/o LSCS

(DINOPROST: $PGF2\alpha$ LPPM)

>36wks, singleton with breech/transverse (not in knee or footling), adequate liquor, membranes intact, normal FHR, no placenta previa (OPD based): ECV → (x) Twk ECV
Zatuchni-Andros score : LSLS / Breech vaginal delivery

INDICATIONS OF LSCS:
Contracted pelvis/ Deep transverse arrest
Placenta previa
Previous Classical Caesarean/ VVF repair
Active HSV / viral warts
Ca cervix - classical CS
Cord prolapse
Vasa previa
Malpresentations: BROW / Face & mentoposterior / Footling / Knee / Stargazing / transverse lie

Stages of Labour

Stage 1: till full cervical dil"

Latent phase –Active phase

Original (Friedmann): 3cm

Modified WHO Partogram: 4cm

WHO definition: 5cm (LCG)

Definition of Labour (ACOG): 6cm

Stage 2 - baby out

Stage 3 - placenta out

Stage 4 - 2hr

Rest / sed"

Prolonged latent phase: N >20hr, M >14hr

Protraction of dilatation: augment <1.2cm/hr, <1.5cm/hr

Active Phase Arrest - 4hrs - No change in dilat despite adequate contract"

CPD → LSCS

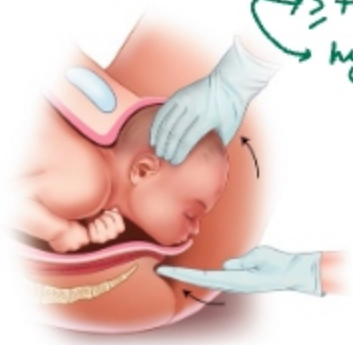
Adequate contractions: ≥3 in 10 min, 45s each / 250 Montevideo units

Second stage Arrest: 3hr, 2hr (+1 - epidural)

Prolonged 3rd stage: 30min (AMTSL → 15min)

≥ +2 → Instrumental

higher → LSCS



Second stage of labour:
- -Ritgen manouever ✓✓
- -Warm compress perineum ✓✓
- -Fundal pressure / Routine episiotomy/ Lithotomy ✗✗

- Carbetocin (100 ug IM/IV)
- Misoprostol (400ug PO) - remote / PHC
- Methylergometrine 0.2mg
- Oxytocin and ergometrine fixed-dose combination (5 IU/500 µg, IM)

AMTSL: prevents PPH – atony
- -Check for another fetus
- 10IU oxytocin within 1min of shoulder IM / IV infusion
- -Controlled cord traction (presence of SBA) Mod. Brandt-Andrews
- -Delayed cord clamping (1-3min) except Rh-iso / Birth asphyxia / HIV* / COVID*
- -Intermittent assessment of uterine tone/ Uterine massage

Engagement BPD passes the pelvic inlet
Descent
Flexion
Internal rotation // → ischial spine
Crowning — (↯ cardinal)
Extension
Restitution → head rotn by 45° - aligned ≥ shoulder
External rotation
Expulsion of rest of the body

ISCHIAL SPINE / least pelvic :

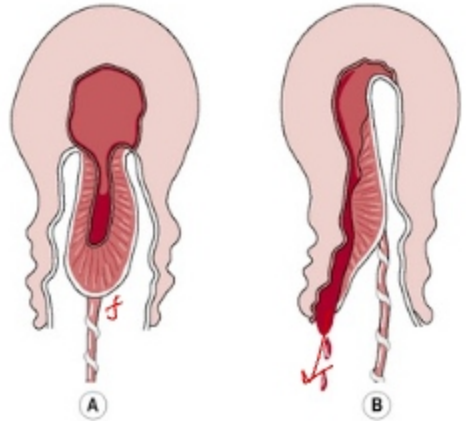
- Origin of Levator ani
- Carrus curve
- Pudendal nerve block
- Deep Transverse Arrest
- Internal Rotation
- Station

Intra-uterine fetal demise: Non-interference QP
↓ psychological / DIC
IOL

Puerperal pyrexia: >100.4 F after 24hrs — 1st 24hr : fever/chills
Septic Pelvic Thrombophlebitis :
Antibiotics (ampi + genta) + LMWH

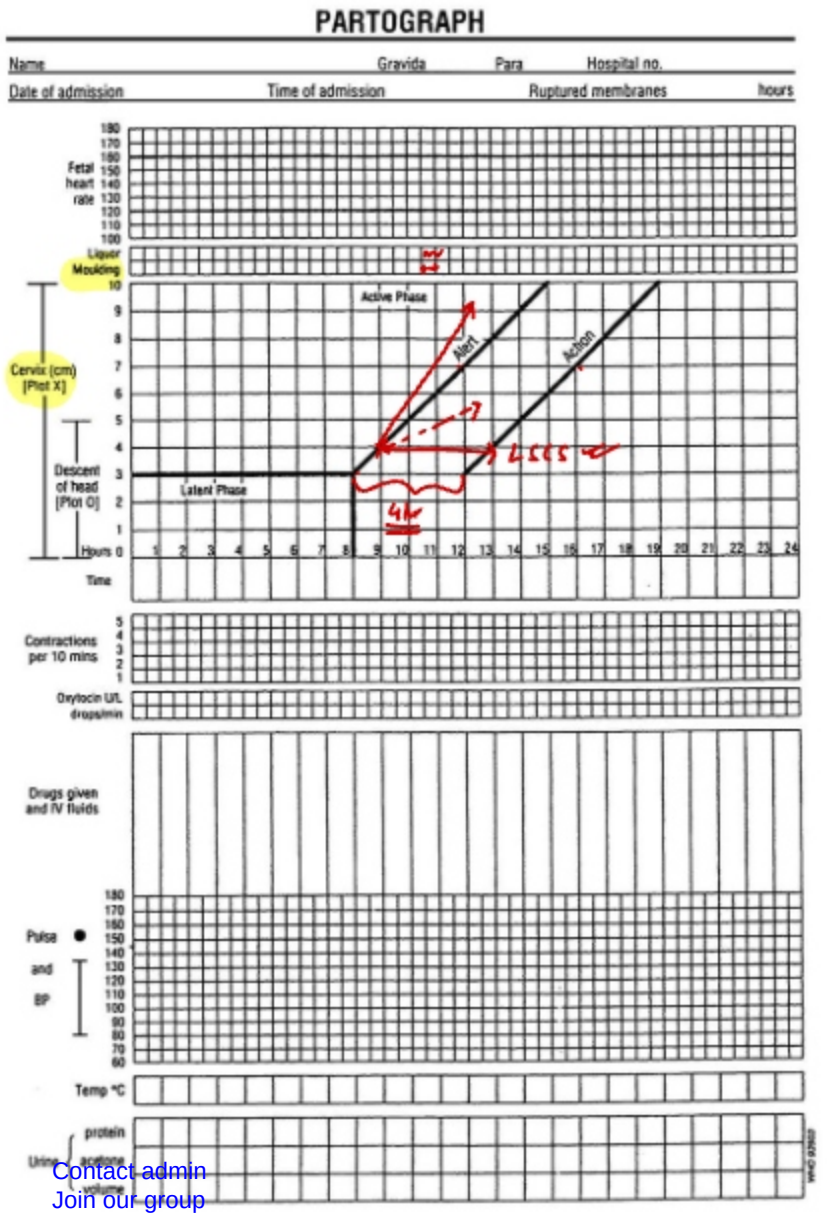
Placental separation: Schultze: fetal 1st / bleed ↓
↳ gush of blood / cord lengthening SHINY
Duncan: maternal 1st / bleed ↑
DIRTY

Constriction / Schroeder's Ring	Retraction / Bandl's Ring
Excess oxytocin	Obstructed labor
At junction of upper and lower segment; does not change	At junction of upper and lower segment; moves upward
Felt on PV	Felt on Per abdomen



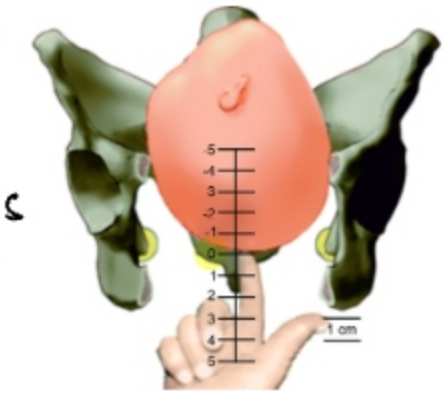
Time period	Uterine position
Immediately after delivery	Uterus is at the lower border of the umbilicus (≈20 weeks size)
Day 1	1 finger breadth below the umbilicus
Day 2	2 finger breadths below the umbilicus
At the end of 2 weeks	No longer palpable abdominally (becomes a pelvic organ)
At the end of 6–8 weeks	Pre-pregnant sized uterus

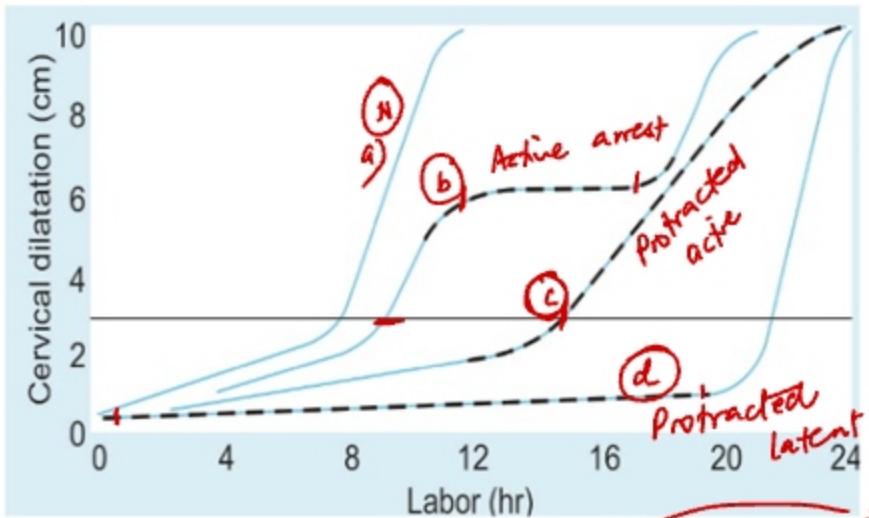
Partogram and Labour care guide



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

DTA → LSCS





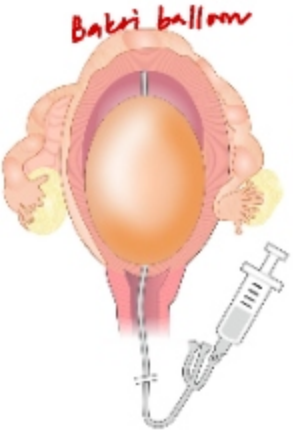
I- intact
C- clear
B- blood
M- meconium
A- absent

LCG — 5cm — alert / action — SHARED

Cervix [Plot X]									
	10								
	9	≥ 2h							
	8	≥ 2.5h							
	7	≥ 3h							
	6	≥ 5h							
	5	≥ 6h							

PPH

Definition: >500ml - NVD >1L - LSCS
MCC of primary PPH: <24hr → ATONY
MCC of secondary PPH: >24hr → Retained placenta



Postpartum haemorrhage

Immediate steps
1. Call for help. → IV cannula 18G ×2, Foley's, arrange blood
2. Resuscitation

Abdominal palpation

- Uterus atonic (Atonic PPH)
- Uterus hard and well contracted (Traumatic PPH)

CI: Hypertension, PAD, Rh immunization, Heart disease, After 1st twin

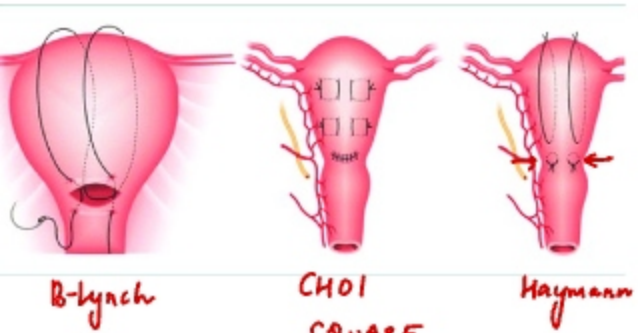
1. Uterine massage
2. Oxytocin infusion 40 units in 500ml NS (20-40 IU)
3. Inj. Methergine 0.2 mg I.V. every 2-4 hours (inv)
4. Blood transfusion

Exploration (cervicovaginal inspection)

Suspicion of uterine rupture

Haemostatic sutures on the tear sites (stitching of perineal, vaginal, and cervical tears)

Emergency laparotomy



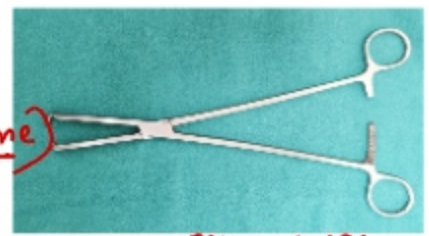
Uterus still atonic

CI: Asthma (OR)

CI: Previous LSCS

1. Give 250 µg of Carboprost I.M every 15 minute for 8 doses. (PGF2α, max - 2mg)
2. Give 800 µg misoprostol rectally (OR) (PGE1)

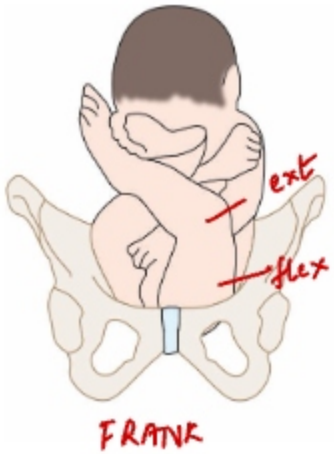
× PGE_2 (Dinoprostone)



Uterine tamponade → Hemostatic Sutures → SURGERY- Devascularisation → SURGERY-Hysterectomy

Uterine A → uterine-ovarian A → int iliac (ant ÷)

Breech delivery



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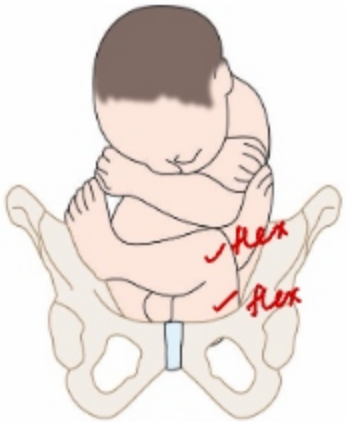


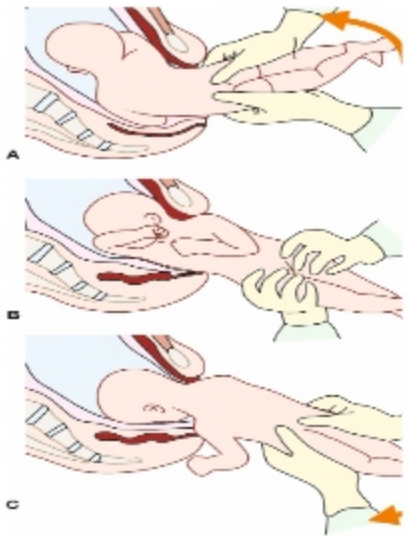
COMPLETE

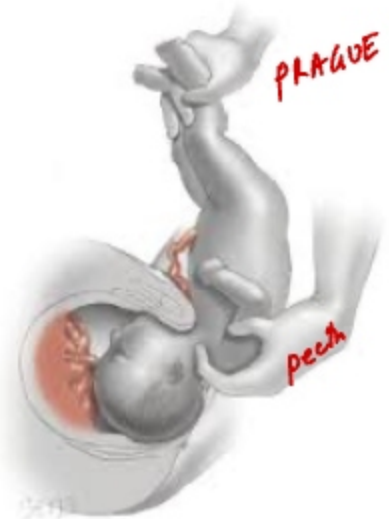
FOOTLING

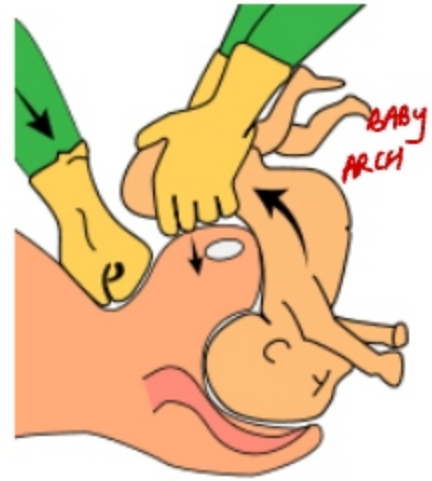
↓

LSCS

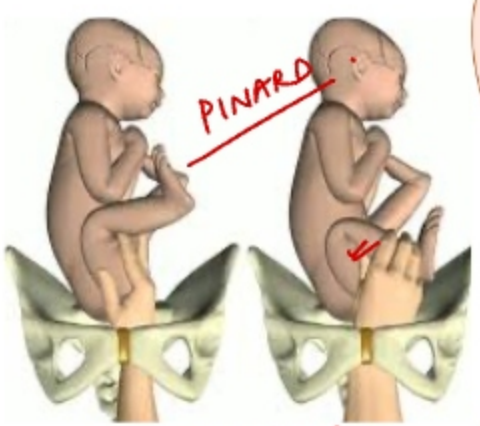
LOVSET'S



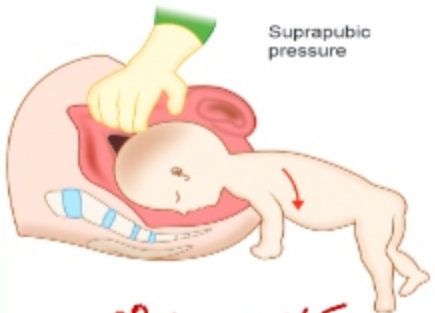




BRACHT

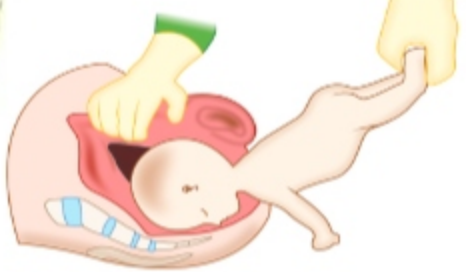


popliteal

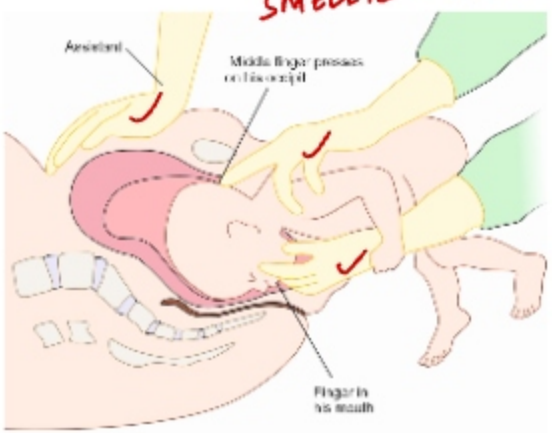


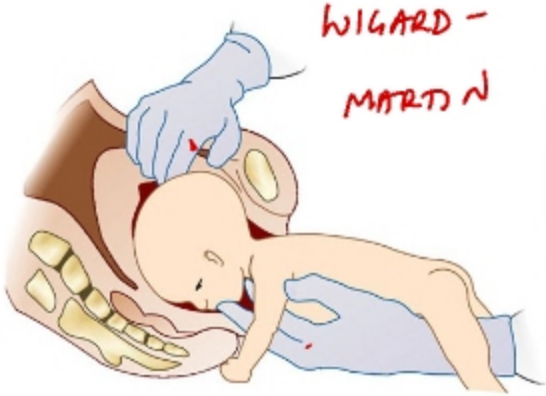
QR

BURNS-
MARSHALL



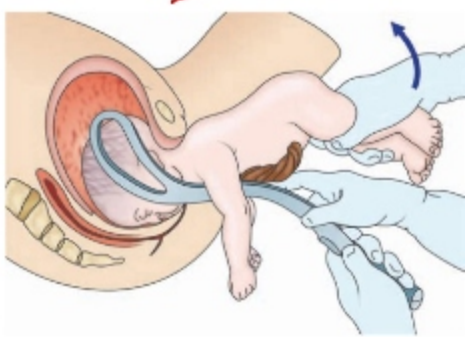
SMELLIE - MAURICE - VIET





WIGARD -
MARTIN

PIPER

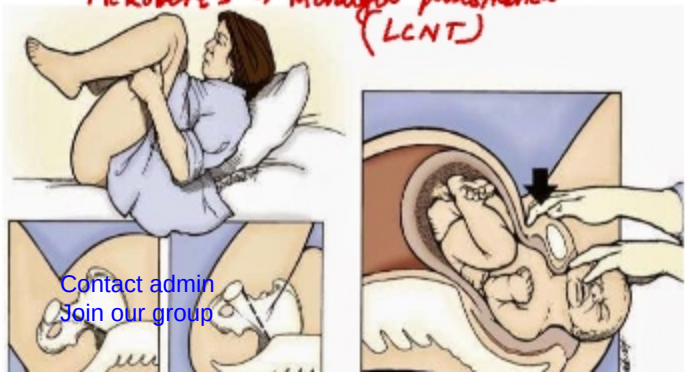


Other complications

SHOULDER DYSTOCIA

Shoulder >1min after head
Turtle sign

- Call for help
- Evaluate for episiotomy
- McRoberts position eg
- Suprapubic pressure
- Push anterior shoulder towards fetal chest — RUBIN'S
- Rotate posterior shoulder — WOOD'S LORKSCREW
- Roll the patient on to all fours — GASKIN
- Put baby back -> LSCS — ZAVANELLI



UTERINE INVERSION

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

Neurogenic ↓ Hemorrhage

↓

STOP oxytocin
Manual replacement: Johnson's technique

(xx remove placenta)

Amniotic fluid embolism

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

UTERINE RUPTURE

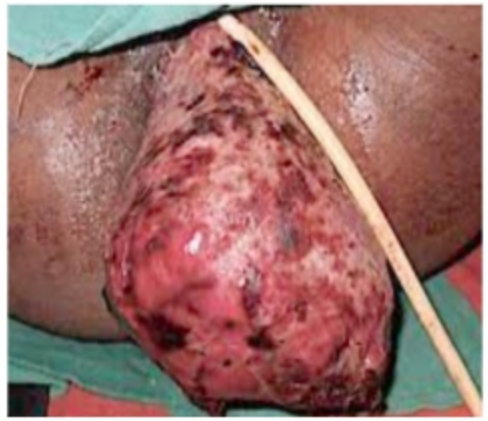
↓ hysterectomy

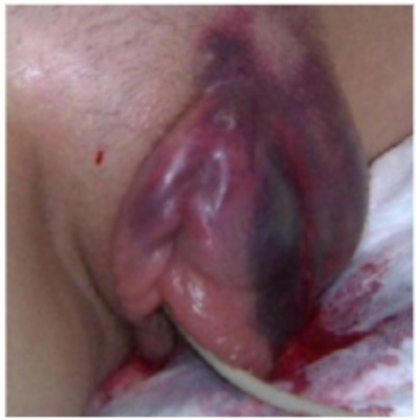
- Intense pain
- H/o C-sec / myomectomy/
- obstructed labour
- Fetal parts palpable superficially OR
- Loss of station eg

VS Scar dehiscence

↑ pain / maternal tachycardia / fetal bradycardia

Rx → LSCS



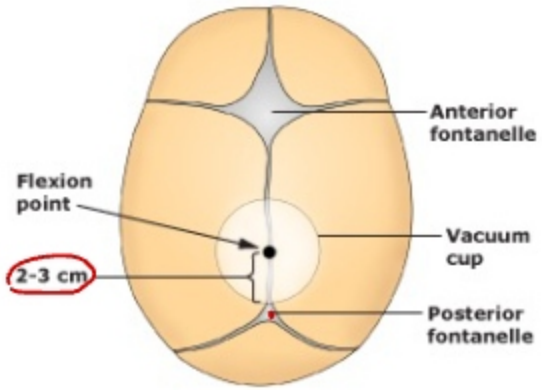


Vulval hematoma

Rx – compression

Instrumental delivery

Indications:
Pre-requisites: Full dilatation + Ruptured membranes + Station ≥ +2



VACUUM

Rotation – OP

WRIGLEY OUTLET

Prematurity,
Heart disease
Face, Breach

↓↓bearing down

PIPER'S
↓
breech

KIELLAND
↳ asynclitism

Episiotomy
Timing: crowning
Order: mucosa → muscle → skin (same: repair)
Type of perineal tear: 2°

Muscles cut: Bulbospongiosus, Levator ani, Superficial and deep transverse perinii
Not cut: Ischiocavernosus, obturator

LR
OT