

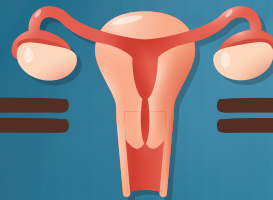


Gynecology & Obstetrics
For undergraduates

هدية
مجانية

Notes on the Board of Dr. Nadine's Lectures

5th Edition
2023



Notes of Dr. Nadine Alaa Sherif
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*This work is dedicated to the soul of my father,
my beloved mother, my unique brother, and ...
All the future doctors, whom I truly believe in
their creativity, intentions and potentials .*

Nadine Alaa Sherif



 **Website**



 **YouTube channel**



 **Telegram channel**



 **Facebook Page**

List of Abbreviations

AFI : Amniotic Fluid Index
 AIS : Androgen insensitivity syndrome
 ASCUS : Atypical squamous cells of undetermined significance
 AUB : Abnormal Uterine Bleeding
 BAD : Bis-acromial diameter
 BCT : Benign cystic teratoma
 BL : Broad Ligament
 BLM : Broad ligament myoma
 BMD: Bimastoid diameter
 BPD : Biparietal diameter
 BTD : Bitrochanteric diameter / Bitemporal diameter
 BVs : Blood vessels
 CIA : Common Iliac Artery
 CILNs : Common Iliac Lymph nodes
 DMA : Direct Mento Anterior
 DL : Diagnostic laparoscopy
 DO : Detrusor overactivity
 DOA : Direct Occipito Anterior
 DOP : Direct Occipito Posterior
 DZT : Dizygotic Twin
 EH : Endometrial Hyperplasia
 EILNs : External Iliac Lymph nodes
 EMA-CO : Etoposide , Methotrexate, Actinomycin – D , Cyclophosphamide , Oncovin
 FCA : Fetal congenital anomalies
 FFP : Fresh Frozen Plasma
 FG : Fundal Grip
 FL: Fundal Level
 FU : Follow Up
 GI : Granuloma Inguinale
 HIFU:High Intensity Focused Ultrasound
 HPL : Human Placental Lactogen
 HSIL : High grade squamous intraepithelial lesion
 HSM : Hepatosplenomegaly
 IAP: Intra abdominal pressure
 II LNs : Internal iliac lymph nodes
 II vessels : Internal Iliac vessels
 IIA : Internal iliac artery
 IIV : Internal iliac vein
 IPHge : Intra Peritoneal Hemorrhage

IUI : Intrauterine insemination
 IUP : Intraurethral pressure
 IVP: Intravesical pressure
 LEEP : Loop Electrosurgical Excision Procedure
 LGV: Lymphogranuloma Venereum
 LLETZ : Large loop excision of the transformation zone
 LMA : Left Mento Anterior
 LMWH : Low Molecular Weight Heparin
 LNG-IUD : Levonorgestrel - Intrauterine Device
 LOA : Left Occipito Anterior
 LPD : Luteal phase defect
 LSA : Left scapula -anterior
 LSIL : Low grade squamous intraepithelial lesion
 MA : Mento-anterior / Monoamniotic
 MC : Monochorionic
 MCL : Midclavicular line
 MCT : Malignant cystic teratoma
 MDIF : Mullerian duct inhibiting factor
 MH : Metropathia haemorrhagica
 MP : Mento-posterior
 MRKH : Mayer Rokitansky Küster Hauser syndrome
 MSAFP : Maternal serum Alpha Fetoprotein
 MSH : Melanocyte stimulating hormone
 MST: Malignant solid teratoma
 MTX : Methotrexate
 MV: Mento-vertical
 MZT : Monozygotic Twin
 NT : Nuchal Translucency
 NTD : Neural Tube Defect
 O/E : On Examination
 OF: Occipito-frontal
 OGTT : Oral Glucose Tolerance test
 OHSS: Ovarian hyperstimulation syndrome
 PAPP-A : Pregnancy Associated Plasma Protein A
 PAS : Placenta Accreta Spectrum
 PCT : Post coital test
 PE : Preeclampsia
 PEB : Premenstrual Endometrial Biopsy
 PG: Primigravida / Pelvic Grip
 POI : Premature ovarian insufficiency
 POP: Pelvic Organ Prolapse

PPC : Post Partum Care
 PROM : Premature Rupture of membranes
 PUL : Pregnancy of Unknown Location
 ROD : Right Oblique Diameter
 ROM : Rupture of membranes
 RSA : Right scapula – anterior
 SIDS : Sudden infant death syndrome
 SMB: Submento-bregmatic
 SMM : Submucous myoma
 SMV: Submento-vertical
 SOB: Suboccipito-bregmatic
 SOF : Suboccipito-frontal
 SP: Symphysis Pubis
 TD : Tubal Disconnection
 TDF : Testicular differentiation factor
 TENS : Transcutaneous Electrical Nerve Stimulation
 TOA : Tubo-ovarian abscess
 TOC : Tuboovarian cyst
 TOT : Transobturator tape
 TTTT : Twin To Twin Transfusion syndrome
 TVT : Tension-free vaginal tape
 UAE: Uterine artery embolisation
 UG : Umbilical Grip
 VaIN : Vaginal intraepithelial neoplasia
 VIN : Vulvar intraepithelial neoplasia
 VVF : Vesicovaginal fistula

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GYNECOLOGY

Normal

* 28 days → menstrual cycle
* 4-5 days → menstrual flow

starts at age of puberty maintaining pattern but pulsatile
→ hcr hormones secreted in

1st half → FSH + estrogen
2nd half → LH + progesterone

Occurs at the level of :-

Physiology of menstrual cycle

Hypothalamus : GnRH

release hormones
+ inhibiting factor of pituitary

poly peptide
pulsatile manner
in secretions
→ labile (unstable)
rapidly degraded → zero in blood level
to be stable should attach to GHRs (pulsatile)

* we found GnRH to measured in hypo-pituitary portal circulation which can't done

Pituitary : FSH / LH

gonadotropes
we measure it to know GnRH state.

* test → oxytocin + ADH

* day 2-5 FSH > LH

* day 14 both

* day 14 LH > FSH

* in day 2 LH > FSH → PCOS

Normal LH + FSH > < 20

Ovary:

had follicles
بويضات
كل بيضة

E₂ / P
estrogen progesterone

formed in ovary under affect of LH/FSH which come by ovarian vessels → uptake of cholesterol by theca of dominant follicle in presence of E₂ → convert it to andro

at age of puberty we had 400k of follicles.
we can measure the count by AMH.
ovary had 2 kind of follicles → secrete follicles + hormones
every month 1000 follicles mature but 1 become dominant and the rest atresia

* FSH after menopause because no follicles so no estrogen so no feedback

Follicular PRG

very good quality
size 2 cm
high hormone contents.

Cholesterol

Theca cells

Androstendione

Granulosa cells

Aromatase enzyme

ovulation oocyte release

Corpus luteum

Corpus albicans

Endometrium : Glands

* lining of uterus → regeneration

* progesterone → filling endo by secretion → inhibition of fertilization egg

* if No fert. egg → shedding of endo because of Longest → period.

Cervix:

secrete Mucus

* progesterone → thick mucus

* after pregnancy No nutrient → kill bacteria

Vagina:

Cells

Watery Excessive

7-10 cm

+ve spinbarkeit (stretchability) (more watery)

+ve Fern (Arborization) (more minerals)

-ve spinbarkeit

-ve Fern

Viscid ++WBCs

0 / 30 / 70

0 / 30 / 70

(Maturation index)

* physiology causes →
menopause + precocious pregnancy + lactation
at per. cessation period → < 8 years old

Def:

Et:

- Outflow (cryptomenorrhea)
- Uterus
- Ovaries
- Ant pituitary
- Hypothalamus

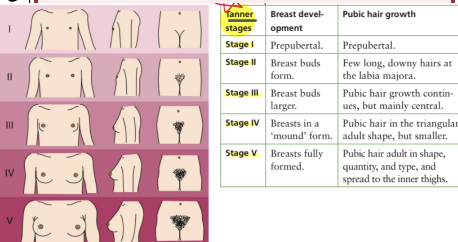
Cl pict for each

Investigations

Ttt for each

Y = No Ut

2nd sexual characteristics *



Stages	Breast development	Pubic hair growth
Stage I	Prepubertal.	Prepubertal.
Stage II	Breast buds form.	Few long, downy hairs at the labia majora.
Stage III	Breast buds larger.	Pubic hair growth continues, but mainly central.
Stage IV	Breasts in a 'mound' form.	Pubic hair in the triangular adult shape, but smaller.
Stage V	Breasts fully formed.	Pubic hair adult in shape, quantity, and type, and spread to the inner thighs.

Polycystic Ovary Syndrome (PCOS) is a complex reproductive health condition characterized by a combination of the following features:

- Irregular menstrual cycles (O):**
 - Excess androgen production
 - Excess androgen levels in the blood
 - Excess androgen levels in the hair
 - Excess androgen levels in the skin
 - Excess androgen levels in the hair
 - Excess androgen levels in the skin
- Excess androgen production (A):**
 - Excess androgen levels in the blood
 - Excess androgen levels in the hair
 - Excess androgen levels in the skin
 - Excess androgen levels in the hair
 - Excess androgen levels in the skin
- Excess androgen levels in the hair (B):**
 - Excess androgen levels in the blood
 - Excess androgen levels in the hair
 - Excess androgen levels in the skin
 - Excess androgen levels in the hair
 - Excess androgen levels in the skin
- Excess androgen levels in the skin (C):**
 - Excess androgen levels in the blood
 - Excess androgen levels in the hair
 - Excess androgen levels in the skin
 - Excess androgen levels in the hair
 - Excess androgen levels in the skin

Embryo origin →
1 ovary → genital ridge
fallopian tube + ut + cx + upper vag → Mullerian tubes
lower vag → urogenital sinus
vag → transfection + canalization but failed → septum → hidden period

at the sides 15 years old with 2nd signs or 1st absence of 2nd signs

reach 16 years old No menstruates ever
or reach 14 years old absent of 2nd sexual signs

1- Kallmann syndrome (+ anosmia)
absent olfactory bulb + cells send GnRH
treat GnRH
can be pregnant by induction of ovulation

Absent 2^{ry} sexual characters (absence of E₂)

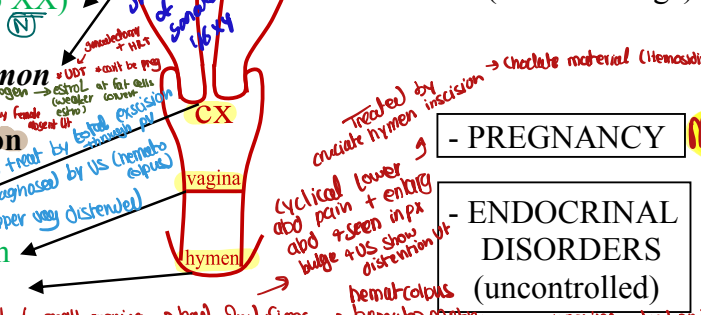
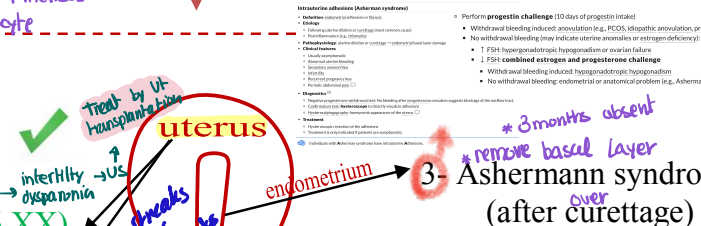
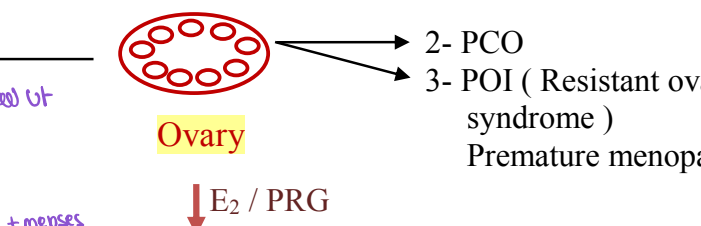
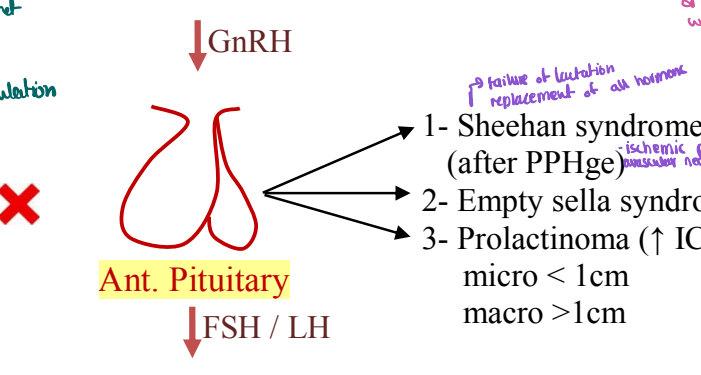
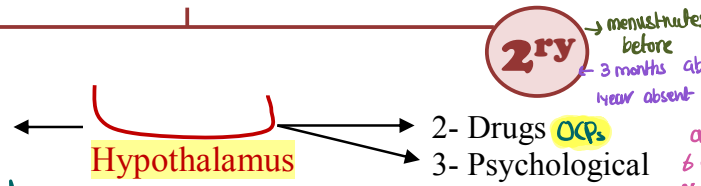
1- Turner syndrome (45 XO) female has ut
Commonest
No 2nd
ovary without oocyte
HRT to get 2nd signs + menses
No pregnancy or No oocyte

Presence of 2^{ry} sexual characters (presence of E₂)
No pain but had 2nd signs → intertidity dyspareunia

1- Mullerian agenesis (46 XX) (MRKH) 2nd common
2- AIS (46 XY) 3rd common
Androgen insensitivity syndrome
Y → TDF + mH → need androgen receptors
extremely female absent ut

Outflow tract obstruction (= cryptomenorrhea)
1- Cx atresia
2- Transverse vag septum
3- Imperforate hymen
absent of smelly opening → had 2nd signs → hemato metra endometriosis

Amenorrhea ⇒ Absence of menstruation



* from hypo to ut if had problem No menses formation but if the problem in cx → hidden menses

Approach to a case of amenorrhea :

1) History (Et) :
drugs , 1^{ry} , 2^{ry} , PPH , D&C , ...

2) Examination (cl.picture):
2^{ry} sexual ch / local...

3) Inv (diagnosis) :
For 1^{ry} amenorrhea
In presence of 2^{ry} sex. ch. → **US Structural**
In absence of 2^{ry} sex. ch. → **Hormonal profile FSH/LH**
low in hypo / pit
high in ovary

Others
(karyotyping / laparoscopy / hysteroscopy / ...)

4) ttt (medical or surgical) :
depending on etiology

* if < 14 → measure
> 14 → examine 2nd signs
> 16 → start invest what ever had 2nd signs or not

Puberty (11-12yrs)

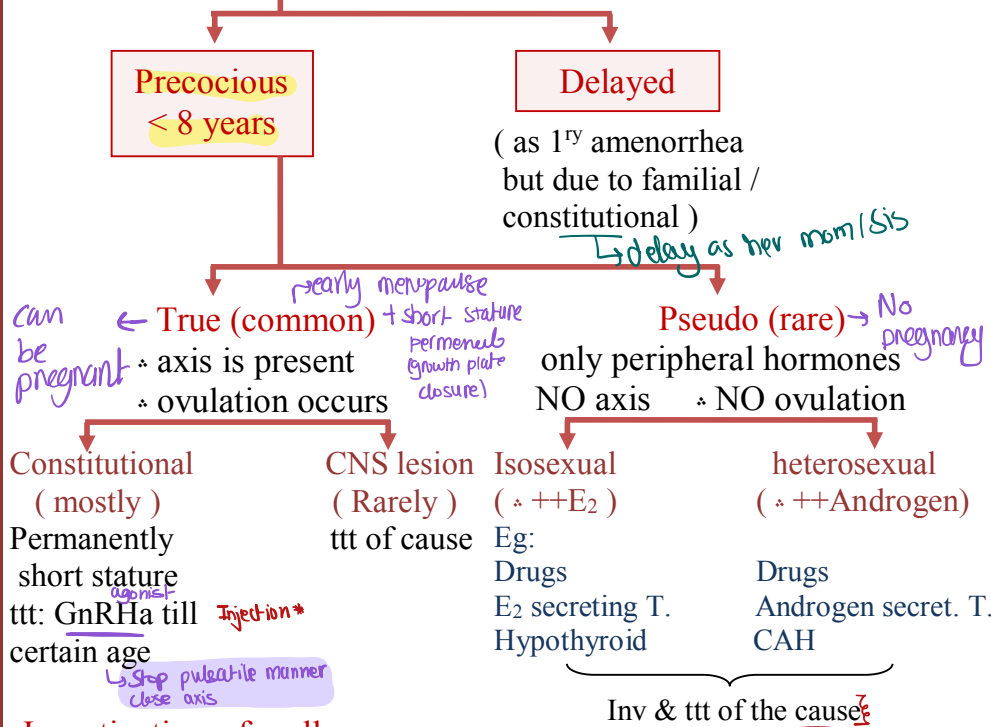
(Non reproductive → reproductive)

Due to maturation of pulsatility of hypothalamus

Normal sequence of pubertal changes: 2nd Sexual characteristics *

- 1) Growth spurt
- 2) Thelarche (Tanner staging I → IV) Breast buds
- 3) Pubarche (Adrenarche) pubic hair
- 4) Menarche
- 5) Axillarche axillary hair

Abnormal puberty



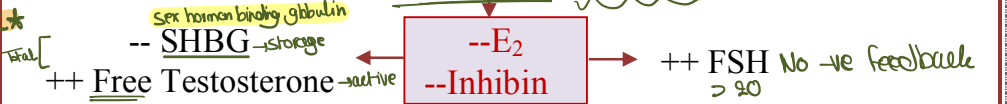
Investigations for all :

- 1) History to detect cause (drug intake)
- 2) US : to detect any tumors
- 3) Hormonal profile : for levels of E₂, FSH, androgen
- 4) Specific for suspected lesion eg : CT Brain

Menopause (51-52yrs)

(Reproductive → non reproductive)

Due to depletion of follicles oocytes



Clinical manifestations:

- 1) **Atrophy of urogenital system :**
 - * Vulva : gaping
 - * Vagina : dryness, dyspareunia (ttt : give local E₂ cream) / infection
 - * Cx
 - * Uterus : ET < 5mm
 - * Breast
 - * Urethra / bladder : infection / SUI
 - * Ligaments : POP prolapsed
- 2) **Androgenic manifestations :**
 - voice / temporal recession of hair / change in libido
- 3) **HOT FLUSHES (most irritant)** → ttt : HRT
- 4) **Mood changes:** insomnia
- 5) **Skin :** loss of collagen
- 6) **Remote complications:** LATE
 - * CVS manifestations → ++LDL / --HDL
 - * Osteoporosis → ++osteoclasts / --osteoblasts

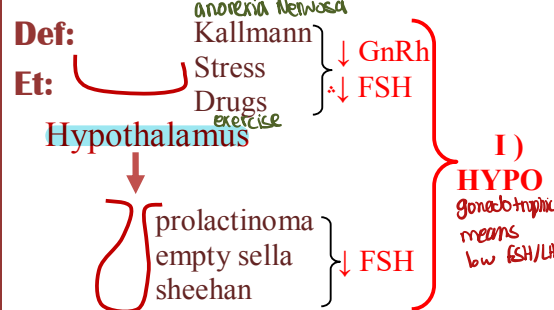
Management: Synthetic estrogen → work same Natural in case of osteo + progesterone → oppose endometrium hyperplasia that formed by E₂ to prevent convert it to CA

- 1) Reassurance
- 2) Change life style : exercise / stop smoking / dietary habits
- 3) Prophylactic : Ca⁺⁺ / Vit D
- 4) Annual screening program:
 - TVS / Pap smear / Mammography / Lipid profile / DEXA
- 5) ttt of complications :

- * Osteoporosis
 - Biphosphonate (once weekly)
 - SERM BUT ++ hot flushes
 - Phytoestrogen BUT weak
 - HRT BUT Ca breast / Ca endometrium / ++CVS
 - * CI : H/O Breast ca / AUB / DVT / Active liver disease
 - Forms : continuous E/P, Cyclic E/P, E only in TAH
- * CVS complications : prevention / cardiology referral

Anovulation ≠ amenorrhea

{ = hypogonadism }



Cl. picture of Normal ovulation:

S: Regular cycles / spasmodic dysmenorrhea / PMS (pre menstrual syndrome) *irritability, depression*

Midcycle: Pain (Mittelschmerz) *at time of ovulation*

Spotting + Discharge

Inv:

1) BBT chart → measure temp every morning of period days
normally 36.5 - 37.4
Pb increase temp (basal) → 4th of ovulation

2) Folliculometry: at midcycle

3) PRG: at D₂₁ > 5ng/ml (5-10 = LPD)

4) LH Kits urinary: at midcycle

5) PEB: not done

Ttt: of cause if present

induction of ovulation

* Clomiphene Citrate (CC) in eugonadotrophic (PCOS) 90%
FSH/LH stimulation of labor

* HMG / HCG in hypogonadotrophic

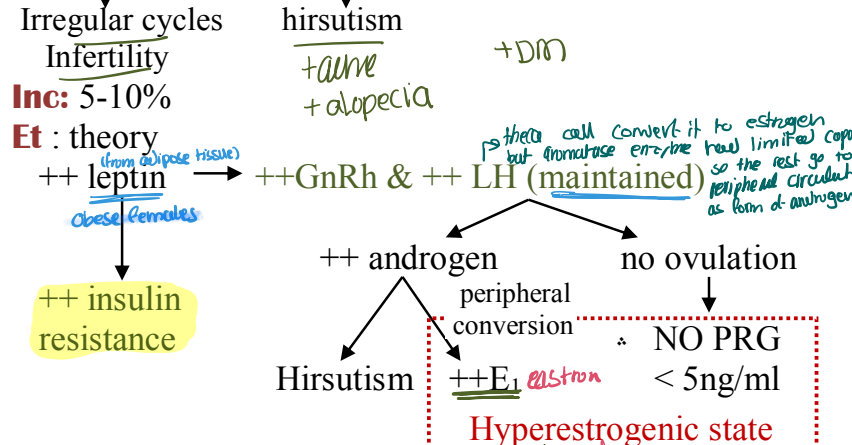
* Ovum donation ?? (No oocyte) in hypergonadotrophic

PCO (Polycystic Ovarian)

PCO

Necklace appearance of follicles
→ No dominant follicle
→ chronic anovulation

* Stein & Leventhal 1935 (obesity / Hirsutism / Infertility)
* Rotterdam criteria 2012 at least 2 out of 3
(anovulation / hyperandrogen / US necklace appearance)



Inv:

I) Labs:

→ ⓧ E₂ limited capacity
→ ++ androgen
→ ++ E₁ p-ve feedback from E₂
→ ++ LH / ⓧ FSH
→ -- PRG < 5ng/ml
→ ++ insulin resistance

No +ve feedback from PRG

No LH surge
No ovulation

II) US: Adam's criteria Necklace appearance

III) Lap: (not needed for diagnosis) oyster-shell appearance

Ttt:

1) Weight reduction / metformin

2) Symptomatic ttt:

* COPs to regulate cycles at same time everyday for 21 days

* Spironolactone / cimetidine / OCPs for hirsutism

* CC for anovulation (++ OHSS in HMG/HCG)

* LOD (peritubal adhesions : not used)

Hirsutism

Def: ++ hair growth in androgen dependent areas *chest, back, inner thigh*

Et:

→ Constitutional (commonest)

→ Ovarian as PCO

→ Adrenal é ++ DHEAS

→ Iatrogenic medication

Normal hormones level but follicles response is very high

Diagnosis:

1) Labs:

* DHEAS metabolite of adrenal androgen

* Total & free testosterone

2) US: for pelvis (ovaries & adrenal)

Ttt:

* Spironolactone (-- 5α reductase) *testosterone formation*

* OCPs (++ SHBG é -- free androgen)

* Cimetidine (antiandrogen)

+ hair removal

Ttt of cause if present

Hyperprolactinemia

Def: ++ PRL > 29ng/ml

Et:

* Physiological (commonest) *lactation + pregnancy*

* Medication side effect (eg: antipsychotic)

* Prolactinoma → micro < 1cm
→ macro > 1cm

Diagnosis:

* Lab: PRL level

* CT Brain

Ttt: of cause

* Micro: Bromocriptine (dopamine agonist)

Or Cabergoline

* Macro: surgical removal

Infertility

Failure of pregnancy after 1 year of unprotected sexual intercourse

1ry → Never got pregnant before → 1 year of regular sexual intercourse
2ry → pregnant then not → 2 years (year of lactation)

- * Ovary stay in ampulla 24 hours
- * Sperm waiting for 72 hours

Etiology :

- * Male 40%
- * Sexual 5% → irregularity away from ovulation time
- * Unexplained 15%
- * Female 40%

→ Ovarian
→ Tubal
→ Uterine
→ Cx / vaginal

Cl picture (history):

Male : + smoking, surgery / drugs / infection, mumps, congenital of sperm mobility

Female :

- Ov : ovulation symptoms (regulatory of cycle)
- Tube : operation / PID, patent tubes, fever, pain, discharge
- Ut : (amount) of menses
- Cx, vagina : discharge

Sexual : frequency / vaginismus / impotence ...

* Vagina pH → acidic
* Semen pH → alkaline
↳ So should swim fastly (vagina length is 10 cm but compare to sperm size the distance will be like a million - fapal)
* Sperm: Need lower temp than body temp

Inv:

Male : semen analysis (± testicular biopsy in azospermic) 3 days of absent sexual intercourse, motility, count, normal forms

Female :

- Ov : ovulation tests, 21 PRL + folliculometry us
- Tubes : HSG, hysterosalpingiography, dye injected, see patent tube, may be zero sperms with ejaculatory fluid, obstruction disorders
- Uterus : US / HSG, No filling defect (fibroid, adenomyosis, adhesions) → post-men
- Unexplained : DHL (diagnostic laparoscopy / hysteroscopy)

* HSG → without anesthesia → may cause tube spasm → diff from proximal obst by laparoscopy (we inject methylene blue in tube if out this is spasm not obst)

* Teratospermia → abnormal formation
* azospermia → No ejaculation
* oligospermia → low sperms
* atherospermia → sperm mobility

Ttt :

Male : stop smoking / control DM / Vitamins /
IUI (Intra Uterine Insemination) → sperms put on uterine cavity at midcycle.

Female :

- Ov : induction of ov (clomid / HMG-HCG)
- Tubes : IVF (± tubal disconnection in hydrosalpinx) → toxic fluid with IVF
- Uterus : ttt of cause eg hysteroscopic myomectomy
- Unexplained : IVF-ICSI

in vitro fertilization IVF-ICSI

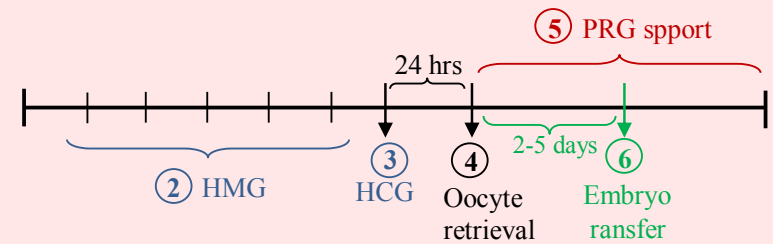
under microscope

Indications:

- Severe tuboperitoneal factor
- Severe male factor
- Unexplained infertility

Steps:

- 1) Pituitary downregulation by GnRha
- 2) Induction of ovulation by HMG



- 3) Final maturation by HCG
- 4) Oocyte retrieval under anesthesia by transvaginal US
- 5) Start luteal phase support by natural PRG
- 6) Do IVF-ICSI & observe embryo division, then transfer D 2, 3 or 5
- 7) Continue PRG support for 2 weeks or till end of 1st trimester (if pregnancy occurs)

Factors affecting success rate :

- Maternal age ↑
- Quality of oocytes ↓
- Quality of embryos
- Type of protocol used

* extremely rare to convert for sarcoma (malignant)

Fibroid (myoma, leiomyoma)

* shedding regularly at period (endometrium)
↳ irregular vaginal bleeding (endometrium pathology)

Menorrhagia

↳ heavy bleeding with regular period

- **Definition** : Benign tumour of smooth muscle fibers of the **myometrium**.
- **Incidence** : 25 % of ♀ in child bearing period !!! WOW
- **Etiology** : ++ E₂ eg (Genetic / Racial / Nulligravida / Anovulation / Early menarche & Late menopause, etc)
- **Pathology** :
 - Gross (site / size / shape / consistency / cut section / count)
 - Mic: < 10 mitotic figures / 10 HPF
 - Pathological changes
 - Atrophy
 - Necrosis
 - Infection
 - Degeneration
 - Malignant (very rare)

(Uterine Sarcoma):

- * Rapid growth
- * Rapid recurrence
- * Growth after menopause

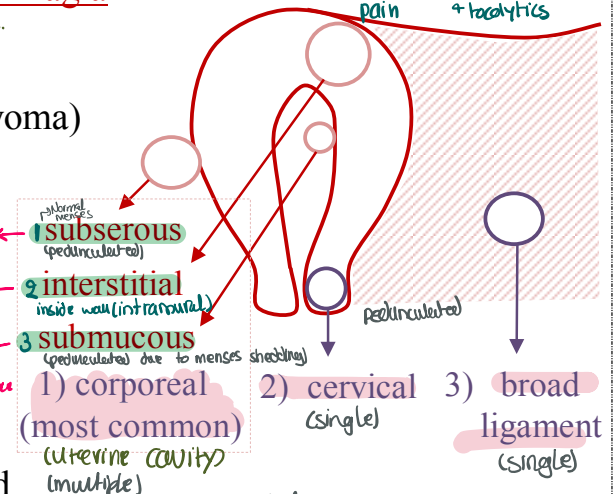
Atrophy
Necrosis
Infection

Degeneration
Malignant (very rare)

- * Hyaline (commonest)
- * Cystic
- * Fatty
- * Calcification (menopause)
- * Red (Necro-biosis) commonest in pregnancy: incomplete necrosis

- **Clinical picture** :
 - S: Asymptomatic / Menorrhagia, unless SM fibroid polyp metrorrhagia
 - S: Pain / Mass / Infertility... * Broad ligament fibroid compress ureter cause hydronephrosis.
 - S: General → anemia
 - S: Abdominal → * symmetrically enlarged ut (submucous myoma)
 - S: * asymmetrically enlarged ut (subserous / multiple fibroid)
 - S: PV & Bimanual → mass (in weeks → describe)
- **Diagnosis** :
 - US: TVS (TAS) : Gold standard
 - Hysteroscopy / Laparoscopy / HSG / MRI / CT / X-Ray...
- **Treatment** :
 - Conservative: NO symptoms * NO tt
 - EXCEPT : > 14wks / BLM / Infertility or RPL in SMM / Rapid recurrence / Growth after menopause
 - Medical (for bleeding / anemia):
 - Antifibrinolytic eg Tranexamic acid
 - Venotonics eg Daflon
 - Hormonal (to combat E₂): Gestagens / GnRh agonist / OCPs
 - Microinvasive techniques : UAE / lap. Myolysis / HIFU
 - Surgical (definitive tt):
 - Myomectomy (open / laparoscopic / hysteroscopic)
 - Hysterectomy (open / laparoscopic / vaginal ?)

New:
Vit D approved for
Fibroid treatment



* peduncles → pass blood → less blood → necrotic to tip → shedding → menorrhagia

NB: Fibroid during pregnancy, Never to be removed, due to high vascularity & ++ E₂ EXCEPT in certain conditions

Endometriosis

PAIN

Def: presence of end. glands & stroma outside ut. cavity
 * uterus is clean * child-bearing age *

Incidence: 10% of all ! 20% of ch. pelvic pain 30% of infertility

NB : Commonest cause of chronic pelvic pain is Idiopathic

Etiology: ++ E₂ / white races

+ theories

- Sampson Retrograde menstruation → endometrium + estrogen + vascularity
- Halban Lymphatic theory
- Meyer's coelomic metaplasia theory
- Immunologic & genetic theory

Pathology:

- site → pelvic ✓✓
- extrapelvic lungs, Brain
- size → small spots : burn match → Diagnosed by laproscope *
- large cysts : endometrioma (chocolate cyst)

inflammation
 ↓
 healed by fibrosis → frozen pelvis

* if was an ovary stroma → accumulate of blood at ovary presented by chocolate cyst

Clinical picture :

Type of patient:

Symptoms: PAIN / ± Infertility
 dysmenorrhea / dyspareunia (deep) / dyschezia / dysuria / ch. pelvic pain

Signs :

- General N
- Abdominal N
- Local: PV & Bimanual

Not relieve with blood flow

irritation of nerve ending + inflammation by PG + stretching of peritoneum

↓ ovarian reserved from fibrosis + atrogenic

hemostatin

Between rectum and vaginal

Dugless pouch

fixed RVF

endometrioma (adnexal mass)

nodules in DP tender

DD of nodules in DP : Endometriosis / TB / Krükenberg

Inv:

- US : for endometrioma (Ground glass appearance)
- CA125: prognostic & follow up not diagnostic tumor marker
- Laparoscopy : gold standard

Ttt:

Symptomatic for pain NSAIDs analgesia.

Hormonal to atrophy end. glands : continuous COPs / gestagens

Surgical:

- conservative → lap ov. cystectomy if endometrioma ≥ 4cm
- lap. ablation of end. foci
- definitive : TAH & BSO

amniorexia

ovary removal

No GNRH

Adenomyosis

Menorrhagia

Def: presence of end. glands inside myometrium
 * uterus is affected

Etiology + theories: more in Multipara + Hormonal imbalance + vigorous coitus (infiltration in myometrium during involution)

Pathology :

- localized: DD Fibroid (false capsule)
- diffuse No Borders

cut section : Granular trabecular pattern with no capsule

Clinical picture :

Type of patient:

Symptoms:

- bleeding (menorrhagia)
- pain (2^{ry} dysmenorrhea)

Signs:

- General : anemia
- Abdominal : ± enlarged uterus
- PV & Bimanual:
- Halban sign (symmetrically tender enlarged uterus)
- Free adnexae

DD: symmetrically enlarged ut

Inv: US (TVS / TAS if large Ut) gold Standard

Ttt:

Symptomatic:

- Analgesics / antifibrinolytics / venotonics
- Hormonal : (to ↓ ↓ menses)
- eg : OCPs / gestagens / mirena LNG-IUD

Definitive surgical ttt : TAH

PG from secretory endometrium

atrophy of endo → ↓ shedding

peroid came but less bleeding amount

No pain

→ how resorption of gestagens ↓ atrophy

AbNormal Uterine Bleeding

<5ml thickness of endo on US
(most common) Atrophic ^{vaginitis} After menopause - **AUB** - Before puberty mostly FB introduction
(most serious) EH / EC (postmenopausal bleeding) may be precocious puberty
>5ml thickness malignancy

Child bearing period

(Menorrhagia / Metrorrhagia / Contact bleeding)

*Normal menses every 21-35 days
for 7 days on average and blood flow is 70 mL

1 Exclude

abnormality in myometrium
(fibroid adenomyosis)

abnormality in endometrium
(intermenstrual bleeding)

upon touch

2 Exclude

Complications of pregnancy
(ie bleeding in early pregnancy)

(β-HCG) complications →
(Abortion, molar, ectopic)

Complications of contraception
(IUD / Hormonal)

4

Non-structural
(= Dysfunctional DUB)

COEIN

- Coagulation disorder (H/O & Inv)
- Ovarian disorder (Exclusion)
(sp after puberty & before menopause/ PCO / ...)
(*Metropathia Hgica) → Anovulatory cycles → irregular → estro-proliferative endometrium high vascularity → once shedding continuous excessive painless bleeding → comment to endo hyperplasia.
- Endometrial disorder (US)
- Iatrogenic drugs (eg anticoagulants) (H/O) → steroids
- Non specific (HTN / Liver troubles / Thyroid troubles) (H/O & Inv)

FIGO 2011

Structural abnormalities
PALM

- Polyp
- Adenomyosis
- Leiomyoma fibroid
- Malignancy
 - cx
 - endometrium
 - functioning ovarian tumor

(US)

Ttt: → CS defect + Aum

→ of cause if present

→ If ovarian disorder:

Dysfunctional menorrhagia No OCPs*

(mefenamic acid / antifibrinolytic / venotonics) → hemostatic drugs

Dysfunctional metrorrhagia (inbetween bleeding)

- COPs / gestagens PRG > 62
- Mirena IUD (old / multipara)
- D&C (severe bleeding)
- End. ablation (alternative to TAH, less morbidity)
- TAH

*prevent conversion to cancerous.
proliferative hyperplasia → endo hyperplasia → cancer

ttt of cause

- polymenorrhea → recurrent periods per year ~12 times.

- oligomenorrhea → less than 12 times per year.

- hypomenorrhea → amount < 40 mL
- hypermenorrhea (menorrhagia) → > 80 mL

Dysmenorrhea

Def: painful menstruation

Types:

- 1^{ry} spasmodic → first days due to PG (vasoconstrict less bleeding)
- 2^{ry} congestive → persist through period 2nd to pathology (increase with flow)
- Endometriosis (crescendo-decrescendo)

Cl picture:

- Type of pt
- S → type of pain
- Signs → associated symptoms
 - General
 - Abd
 - PV / PR / Bimanual

Inv:

to confirm or exclude organic lesions

Ttt:

- Spasmodic (NSAID / COPs)
- Congestive (ttt of cause) → unovulatory No PG

PMS

(Premenstrual Tension Syndrome)

Def: for ovulatory cycle

Theories: PRG → water retention, mastalgia, عصبية

Inv: Keep diary \$ monthly

Ttt: symptomatic / -- ovulation

*NB: Metropathia hemorrhagica: Abnormal excessive, often continuous bleeding due to persistence of proliferative phase of menstrual cycle = swiss cheese appearance (back to back arrangement of glands)

(in case of anovulatory bleeding)

PRG → secondary vasoconstrictor & bleeding

Contraception

*sperm...Need half hour to reach fallopian tube after sexual intercourse.

		Mainly used			In special situation		
Types	Mode of action	Hormonal			Physiological	Barrier	Sterilization
		Oral	IM	subdermal	Vag ring	Patches	
time: post menstrual or within menstrual looks white ← IUD on X-rays when was extrauterine removed by laparoscopy * Copper * Silver * Mirena (LNG – IUD)		(daily) non-stop (monthly) (3months) (3 years) (3wks) weekly for 3wks)			* safe period * coitus interruptus * lactation sp in first 6 months * - - Fertilization * - - Ovulation	* Physical 65%: ↳ Condom ♂ / ♀ ↳ Vag diaphragm ↳ Cx cap * Chemical 30%: spermicidal gel ↳ Nonoxynol-9	* Female ♀ Tubal ligation (lap / open / vag) * Male ♂ Bilat vasectomy
		thickens cervical mucus and thins the lining of the uterus. These prevent sperm from reaching the egg and a fertilized egg from implanting atrophy endometrium & Not fav for implantation					
		PRG 4 PRG ONLY contraceptives (lactation)					
		Easy / Cheap / Available					
		Effective					
		(commonly used in developing countries) * Regular cycles (with COCPs) (commonly used in developed countries)					
		* Break through bleeding / ↓ amount of menses * PMS like \$ * Hypercoagulable state with E containing COPs * Render hypertension , DM difficult to be controlled					
		* H/O of DVT (with estrogen content) * Breast lesion or family H/O * Impaired liver function * HTN / DM * Migraine * Lack of compliance (é pills) every 24 hours					
		* Infection * undiagnosed bleeding * anatomical ut defect * H/O of: PID/ Ectopic					

* **Emergency contraception:** OCPs : 4 tab $\xrightarrow{12hrs}$ 4 tab , LNG : 0.75 mg $\xrightarrow{12hrs}$ 0.75mg (up to 48hrs) / IUD : (up to 5 days)

* **Contraception during lactation:** All EXCEPT E content (as Estrogen - - inhibits lactation)

Physiological safe period

* looks mark for anatomy → Bone
can't descent

Pelvic organ prolapse (POP)

Def : descent ... below (N) anatomical position

Inc : 25% !!

Et : Weakness of support :

(**lig:** Mackenrodt's / uterosacral / pubocervical / **ms:** levator ani / **fascia**)

due to :
- chronic pulm dis
- forebds
- malnutrition
- HGT
- Family Hx

Repeated childbirth
Menopausal atrophy
Congenital weakness

- Straining - Cough
- obesity
+ PPT factors

* hysterectomy itself not cause of prolapse coz we repair ligaments with vagina but if no repair of ligament prolapse will happen.

Types :

* **Vaginal**
Support by ligaments + muscles + anteroposterior position

ant (urethrocele / cystocele)
post (deficient perineum / rectocele / enterocele or hernia of DP)
apical
(vault prolapse after hysterectomy)

* **Uterine**
Prolapse : when Cx felt below ischial spine by PV.

1st Cx below ischial spine
2nd Cx out but fundus in
3rd AM out / complete procidentia

Pathology :

Vagina : keratinization
Cx : trophic (decubitus) ulcers
Supravaginal elongation of Cx (sound)
Bladder : stasis of urine / kinking of ureter

supravag portio-vaginalis

where exposed to outside Cx

normal columnar

due to stretch of vault ligament

measure Cx canal external & then measure to internal (vagina) to know supra Normally should be equally

Cl picture:

* **Symptoms:**

Asymptomatic
Heaviness at end of day / backache / mass protruding
Symptoms of pelvic congestion
Ant: urinary symptoms mass retreating from the vulva
(frequency or inability to complete except by reposition)
Post: rectal (defecation symptoms)
Sexual symptoms & lack of satisfaction → deficient perineum widen space of vagina

* **Signs :**

Gen : obesity/ chest / abd enlargement
PV : inspect / palpate / gurgling in case of enterocele
sound in supravaginal elongation of Cx

in vaginal prolapse presented as balloon but Cx will have opening

Inv :

* Urine analysis (for urinary symptoms)

* Tests for SUI (in cases of cystocele)

Ttt :

* **Prevention :**

Proper spacing
Proper management of 1st , 2nd & 3rd stages of labor
Kegel's exercise after delivery

* **Actual ttt:** (surgical at least 3-6 months after delivery)

Vaginal:

Cystocele : Ant repair
Rectocele : Post repair
Vault prolapse : Abdominal sacrocolpopexy

Cystorectocele : classical repair

Uterine :

Mild 1st degree : NO ttt

2nd degree : Sacrospinous fixation
2nd degree with Cx elongation : Fothergill's or Manchester op.
(amputation of Cx + shortening of Mackenrodt's lig. + classical repair)

3rd degree (é need to preserve fertility) : Sacrospinous fixation
3rd degree (é no need to preserve fertility) :
Vaginal hysterectomy & Classical repair

NB :

put prolapse + post menopause
* **LeFort operation :** in very old é no sexual activity & can't withstand vag hysterectomy
* **Pessary :** in extremely fragile debilitating , can't withstand any form of anesthesia & surgery

treatment depend on severity & symptoms

Urinary incontinence (involuntary escape of urine upon ...)

	Urethral		Extraurethral
	Stress SUI (urodynamic incontinence)	DO ^{detrusor muscles overactive} (urge incontinence)	GUF → VVF (no desire) ^{vaginovesical fistula} → Uretero-vaginal fistula (é desire) ^{normal sensation of bladder}
	Mixed incontinence		
Def	Involuntary escape of urine upon ↑ <i>sphincter weakness IAP</i>	Involuntary escape of urine upon desire to micturate	Connection between urinary & genital tracts (Always wet except in urethrovaginal)
Et	* Same as POP * Hypermobility urethra	++ D.contractions (idiopathic / irritation / infection)	* Obstetric (developing countries) <i>obstructed labor compression → AVN → VVF</i> * Surgical (developed countries) <i>+ radiation</i>
CL.pict	<i>Rfs → Multipara, Trauma → menopause atrophy → cystocele associated</i> Involuntary escape upon straining <i>* prolapse cystocele → incomplete urination → repair → incontinence appears which already exist but absent by kinking → so should examine before surgery</i>	Can't make it to toilet	Always wet * No desire in VVF (except if very small & high) * There is a desire in uretero vaginal from normal ureter
Inv	* Cough test * Bonney's test (in POP + SUI) * Q - tip test > 30° mobility (N) urodynamics : (D.filling pre < 15 cmH ₂ O / 1 st Desire 150 ml / Residual < 50ml / full at 400-600 ml) <i>intra ureth p. / intra abd p. but here IAP > IUP → stress in com</i> * Normal filling pressure * Leak on cough IVP > IUP	* urine analysis * urine C/S * Cystoscopy * Filling pr > 15cmH ₂ O (due to contraction of detrusor) * No leakage upon cough (as IUP > IVP)	* Sim's speculum & position <i>No VDS</i> * Methylene Blue (3 gauze test) <i>injected at bladder to diff in vagina → to see if there is a urine (wet) between 2 fistulae if the gauze dye same → VVF</i> * IVP (if KFTs (N)) <i>Intravenous pyelography</i> * Cystoscopy (to visualize fistula)
ttt	SURGICAL Start by - Kegel's - Scheduled voiding * Periurethral plication (Kelly's suture) <i>→ induce fibrosis healing é 60-70% success in POP</i> <i>contraindicated</i> * TOT > TVT vaginal sling op (if without POP) * Retropubic urethropexy (Burch colposuspension) <i>through abd</i> (Gold standard) success > 90% * Periurethral injection of Collagen in hypermobile urethra In mixed incontinence : give medical ttt for <u>urge</u> incontinence <u>first</u> , before planning surgery for SUI DD: * Retention with overflow (intermittent self catheterization) <i>neuro</i> * Nocturnal enuresis (psychological ttt)	MEDICAL : bladder training * ttt of infection * ttt of stones * Anticholinergic as oxybutynin (destrusitol)	CATHETER IF SMALL SURGICAL IF LARGE * Dedoublement vaginal in low & abd in high fistulae NB : <u>In uretrovag</u> : desire is present from (N) ureter filling & continuous leakage from affected ureter at site of UVF (- ve MB test / Abd repair) <u>Before surgical repair in vesico vaginal (VVF)</u> : * 3-6 months from procedure while putting a urinary catheter to divert urine, decrease size of fistula & allow max healing * Post op: catheter for 10-14 days <i>abd approach → high fistula</i> * No pregnancy for 1 year <i>very approach → low fistula</i> * Delivery by CS <u>In urethrovaginal</u> : splinting urethra (no incontinence) <u>Vesicouterine</u> : Menouria <i>menes through urine</i>

Rectovaginal fistula

Def :	track between rectum & vagina
Cl.pict :	* if small : incontinence to flatus * If large: incontinence to stools
ET :	* mostly between lower rectum & vagina , due to failed episiotomy repair or obstetric trauma.
Ttt: SURGICAL	
Preoperative :	fluid diet & intestinal antiseptic for 3-5 days
OP :	
	* Low 1/3 : transform to complete perineal tear & repair by Lawson Tait operation
	* High fistula : Abdominal repair by dedoublement as VVF
Post operative :	
	* Low residue diet for 7 days
	* Use laxatives to avoid constipation
	* Episiotomy should be done in subsequent deliveries

Lower Genital Tract Infections (no fever)

Natural barriers *Vulva: aposition / apocrine glands é acidic secretions

For LGT

*Vagina: aposition / st sq ep / E₂ ++ glycogen , lactobacilli act on glycogen → acidic PH (lactic a)

*Cx: mucus plug

*Ut: monthly shedding of endometrium

LGT infections:

Vulvitis / Vaginitis

- Risk on pregnant women
B miscarriage
B preterm
B ROM

Childhood: foreign body / worms as oxyurias

Menopause : -- E₂ Atrophic / Alkaline PH

① Childbearing

vaginitis

* protective factor ?

- acidic PH (lactobacilli)
- stratified squamous Non keratinized

	Bacterial vaginosis (commonest)	Candidiasis (2 nd common)	Trichomoniasis (3 rd common)
organism	Bacteria Gardnerella vaginalis	Fungus Candida albicans	Protozoal Trichomonas vaginalis
Et	++++ anaerobes	DM, pregnancy --- immunity	STD
PH	Alkaline : 4.7-7	Acidic < 4.5	Alkaline : 5-6
Cl.picture	Fishy odour Profuse / non irritant Grayish discharge watery	Extremely irritant Cottage cheese Scanty Odorless discharge	Profuse / yellowish Mildly irritant / malodorous discharge / é BV & other STDs Strawberry Cx In 25% of cases
Mic +KOH	Clue cells 	Hyphae / pseudohyphae	Flagellated protozoon 
Treatment	Flagyl Metronidazole 500 mg bid / 7days (CI in 1 st trimester, give local cream or supp only)	Fluconazole 150 mg once weekly for 2 weeks +control DM (CI all through pregnancy & in liver troubles, give local cream or supp only)	Metronidazole 2gm single oral dose + ttt of partner

Cervicitis

Cervicitis

	Acute	Chronic	Erosion ulceration*
Etiology	Polymicrobial sp. Neisseria & Chlamydia	Recurrent improperly (ttt) acute No organism	*infection (ch.cervicitis) *hormonal (preg / COCPs) *congenital
Cl.picture	*Mucopurulent discharge *Dyspareunia *Backache *intermenstrual Bleeding	Excessive Normal Vag discharge *Leucorrhea due to pelvic congestion + menorrhagia + dysmenorrhea *Mucous polyp *Nabothian follicles (rest of pocket cells) greyish *Hypertrophic Cervicitis Contact bleeding Infl → regeneration of columnar faster than squamous Lecide to regeneration gon physical	
Inv.	We may do C/S from discharge in cases resistant to ttt	---	Pap smear to exclude CIS / Ca
Treatment	Doxycycline 100 mg bid / 7days Or Azithromycin 1gm single oral dose (in pregnant females)	*ttt of infection in case of acute on top of chronic *ttt of erosion in case of erosion	* ttt of the cause. * Residual cases: Cauterization → Diathermy → Cryo → Laser

Acute PID (presence of fever)

Definition: Salpingitis, oophoritis, peritonitis & rarely endometritis due to regular monthly shedding in childbearing period.

Et: organism: N.gonorrhea, Ch.Trachomatis (mostly both together & others)
 route: ascending (mainly), local or lymphatic, blood (rarely)
 risk F: sexually active, multiple sexual partners
 IUD, after menses, after sexual intercourse
 é any procedure : D&C, HSG, Hysteroscopy, ...

NB: OCPs & barrier contraception ↓ risk (ie are protective)
 Chlamydia may cause silent PID

Pathology:
 Endosalpingitis / interstitial salpingitis / perisalpingitis (acute catarrhal or acute suppurative) Distended Oviducts → infertility
 Oophoritis : é microabscesses on the surface
 Pelvic peritonitis

Clinical picture:
 Symptoms: fever, malaise, headache, H/O of recent OBGYN procedure, Acute lower abdominal pain, Foul smelling purulent vag. discharge

Signs: Fever > 38.3°, tachycardia, Lower abdominal tenderness & rebound tenderness, Cx Motion tenderness, discharge

Complications : Abscess / septicemia, Chronic PID (if inadequately treated), Tubal obstruction & infertility (due to fibrosis & adhesions), ++ risk of ectopic pregnancy

DD: acute abdomen

Inv: Blood tests: ++TLC, ++DLC, shift to Lt, ++ESR, ++CRP
 US to exclude DD: ectopic, complicated ovarian, appendicular mass, degenerated myoma
 Laparoscopy: if diagnosis is doubtful

NB: Exam of discharge to detect causative organism & do C/S (not clinically needed)
 Fitz Hugh Curtis syndrome (filmy adhesions between the liver & under surface of diaphragm may be seen on laparoscopy in cases of chlamydia)

Treatment:
 Mild PID (é mild symptoms) → Outpatient
 Ceftriaxone 250mg single IM dose + doxycycline 100mg oral /12hrs/14days ± Metronidazole 500mg oral bid / 14days
 Severe PID (é severe symptoms) → Hospitalization
 IV fluids / IV analgesics / IV antipyretics
 IV antibiotics : Cefotetan 2g IV/12hrs or cefoxitin 2gm IV/6hrs
 ⊕ Doxycycline 100 mg orally / 12hrs till symptoms become milder then continue previous oral regimen of mild cases for 2weeks

NB:
 1) IF IUD present → remove
 2) In case of TOA → give clindamycin 900mg IV / 8hrs or Metronidazole 500 mg IV / 8hrs in addition to the 2 above mentioned drugs of severe PID
 3) IF TOA doesn't resolve by medical ttt : drainage through laparoscopy / laparotomy or colpotomy (vaginal drainage)

Chronic PID

Sequelae of acute

Pathology:

- Hydrosalpinx : sequelae of inadequately treated acute catarrhal salpingitis
- Pyosalpinx : sequelae of inadequately treated acute suppurative salpingitis
- TOC
- TOA
- Chronic Interstitial salpingitis

Clinical picture :

Symptoms :

- * history of acute PID
- * dull aching lower abdominal pain *chronic**
- * pelvic congestion

Menorrhagia

Leucorrhea

*Excessive
Normal
discharge*

Congestive dysmenorrhea
+ Dyspareunia

* backache

* infertility from tubal obstruction & peritoneal adhesions

*fibrosis healing
of inflammation*

Signs:

- * adnexal tenderness/ fullness / cyst
- * fixed RVF in case of extensive adhesions

investigations:

- US for adnexal masses
- HSG for hydrosalpinx *enlarged tube proximally to obst*
- Laparoscopy is the gold standard in cases of ch. pelvic pain

Treatment :

Symptomatic ttt

- eg : → infertility ttt → (*tubal anastomosis* TD + IVF)
- pain & congestion in old age → (TAH & BSO) *can't do alone*
- (antibiotics only in acute exacerbations) *Bilateral salpingo-oophorectomy*

TB (chronic from the start)

TB is a chronic granulomatous disease

Etiology:

- Mycobacterium tuberculosis
- Blood spread from lungs (most common)

Pathology : (genital TB)

- FT: (affected in 100% of cases of TB of genital tract)
- * Endosalpingitis: caseous material inside thick , tortuous , tobacco pouch appearance (open everted fimbrial end) *No obst (fibrosis)*
- * Interstitial salpingitis : thick , beaded , salpingitis isthmica nodosa
- * Perisalpingitis: é multiple tubercles on the surface & on surrounding peritoneum
- Endometrium affection (50 %) : affection of basal layer → IU adhesions or Asherman syndrome (PEB is diagnostic)
- Ovarian affection (25%) : with microtubercles
- Rarely : cervical, vaginal or vulval serpiginous ulcers é undermined edges & necrotic floor

Clinical picture :

Symptoms

- Asymptomatic / ch.pelvic pain
- Of 1^{ry} / Low grade fever/ loss of wt / loss of appetite
- 5-10% of infertility cases are due to TB salpingitis
- Amenorrhea / oligomenorrhea / hypomenorrhea

Signs:

- Mostly normal + Nodules in DP
- Genital serpiginous ulcers é undermined edges

Investigations :

- X-ray chest (& pelvis for calcified LNs)
- HSG (not in active TB) : retort shape tube , IU adhesions
- PEB
- Laparoscopy ± biopsies from suspicious lesion (serosal tubercles to be stained by Ziel –Nielsen to show the acid fast , alcohol fast bacilli) & cultured in Löwenstein-Jensen medium
- Tuberculin is a good –ve test

Ttt:

- General ttt for anemia , proper nutrition
- Anti TB (Rifampicin , INH , Pyrazinamide , Ethambutol) ** Biopsy premenstrual **
- Surgical ttt in case of tubal mass or endometrial TB

STDs

	Bacterial					Viral			\$ Spirochetes
		Chlamydia Trachomatis	Chancroid	Donovanosis (GI)	LGV	HSV ₂	HPV	HIV	
Organism	Neisseria gonorrhea (columnar & transitional)	Chlamydia Trachomatis (columnar epithelium)	Hemophilus Ducreyi	<i>granuloma inguinale</i> Klebsiella granulomatis	<i>lymphogranuloma inguinale</i> Chlamydia L _{1,2,3}	HSV ₂ <i>simplex</i>	Skin to skin HPV 6 / 11 6 / 11 → G (A)	AIDS <i>vertical transmission (mom to baby)</i>	Treponema Pallidum <i>Syphilis</i>
Cl. picture	PID <i>spotting, burning urination post-coital bleeding</i>		Vulval lesions			Vulval + Systemic manifestations			
	Mucopurulent discharge Lower abdominal pain Bartholin Urethritis Systemic (IP 3-5 days)	Subclinical Mucopurulent discharge PID (silent) Squelae: Fitz Hugh Curtis <i>*</i> syndrome in laparoscopy	<u>Painful</u> papule ↓ painful ulcer é exudation LN+++ (IP 3-5 days)	<u>Painless</u> papule ↓ Ulcerate ××× NO ××× ××× LN××× (IP 3 weeks)	Destructive lesion ↓ Ulcerate LN+++ (IP 3 weeks)	<u>Painful</u> Vesicles ↓ painful ulcer without exudation (IP 3 weeks)	<u>Painless</u> warts (condyloma acuminata) <i>*diagnosed clinically to confirm by biopsy</i> (IP 3 months)	Asymptomatic ↓ Severe form Kaposi sarcoma (IP 3 years)	1 ^{ry} (chancre) <u>Painless</u> 2 ^{ry} (condyloma latum) (maculopapular rash) <i>flat surface</i> 3 ^{ry} (systemic) (tabes dorsalis) & gumma formation Congenital: Vertical transmission
Inv.	Gram -ve diplococci Culture: Thayer Martin NAAT	Obligatory intracellular Culture: expensive NAAT	Coccobacilli Cl. picture is enough	Gram -ve Donovan Bodies India/Africa	CF India/Africa	Culture of serum collected from vesicles Ab <i>PCR</i>	<i>cervical cancer risk</i> Pap smear (koilocytes) <i>biopsy at pregnancy ca termination + treatment CS Dexta + CS + treatment 24</i> Colposcopy	Western blot Eliza	Dark field Mic (spirochetes) Non-specific VDRL / RPR <i>low cal</i> Specific: TP/HPI In 1 ^{ry} \$ → Ag present In 2 ^{ry} \$ → Ag & Ab In 3 ^{ry} \$ → Ab present
Ttt	Ceftriaxone 250mg (IM) + Doxycycline 100mg / bid / <u>7days</u> → LGI <i>14 → PID</i>	Doxycycline 100mg / bid / <u>7days</u>	Ceftriaxone 250mg (IM) or Doxy or Azithro	Doxycycline 100mg / bid / <u>3 weeks</u>	Doxycycline 100mg / bid / <u>3 weeks</u>	Acyclovir 400mg 10 days (can be taken all through pregnancy) Vesicles at labor = CS (contact) <i>+ acyclovir 36 wks</i>	Vaccine Cryo Diathermy Podophyllin Podofilox NB: CS only if large lesions obstructing labor	Antiretroviral ttt Vaccine ?	Penicillin In <u>penicillin</u> allergy: If pregnant: Desensitization If not pregnant: Doxycycline

NB: in case of pregnancy Doxycycline 100mg / bid / 7 days is substituted by Azithromycin 1 gm single oral dose as doxycycline is teratogenic (but not for syphilis)

Other STDs: Trichomoniasis (protozoan) → infecting lower genital tract / Pediculosis pubis & scabies (Ectoparasites)

because PROM + preterm labor → treat locally 1st trim/orally 2nd + 3rd tri (metronidazole)

Scheme for oncology

Definition: From where the tumor arise

Incidence: How common / rare

Etiology :

- Predisposing F:
- Premalignant lesions :

Pathology:

- Gross :
 - * **Ulcer** with raised everted edges , irregular necrotic floor , indurated base
 - * Cauliflower **mass** with areas of hemorrhage & necrosis
 - * Firm / hard endophytic or exophytic **nodule**
- Microscopy : (depends on cell of origin)
eg : squamous cell carcinoma /
adenocarcinoma if arising from glands
glandular tissue
- Grading :
 - *G I → < 5% malignant undiff.cells = best prognosis
 - *G II → 5-50% malignant undiff.cells = intermediate prognosis
 - *G III → > 50% malignant undiff.cells = poor prognosis
- Spread :
 - * Direct spread to surrounding structures
 - * Lymphatic to the draining LNs
 - * Blood : Lung Bone Liver Brain

Cl . picture :

- Symptoms:
related to function / symptoms of metastasis
- Signs:
 - * General: for metastasis
cachexia / anemia / jaundice / virchow's LN...
 - * Abdominal:
 - * PV & bimanual :
- Staging:
 - * Stage I : confined to the organ
 - * Stage II : limited local spread
 - * Stage III : more local spread ± LNs
 - * Stage IV: distant spread
 - IV a : mucosa of bladder & / or rectum
 - IV b : distant spread (L B L B)

Inv.

- To confirm diagnosis :
- To detect spread:
 - * eg: chest x-ray / abdominal & pelvic US / bone scan
- To assess fitness of pt for surgery: ECG & Lab testing

Ttt:

- Stage I , II : 🏥 Surgery
- Stage III , IV : ☢️ Radiotherapy / Palliative

* All malignant should excludes mets in symp + invg
 * mc tumor of genital organs → Breast

Normal cells/structure
 proliferative → hyperplasia → endo ca
 excessive proliferation

Endometrial carcinoma



Def: Tumour arising from Endometrial glands

Inc: commonest tumour of ♀ genital tract & having best prognosis

Etiology: obesity + DM + HTN → corpus ca syndrome

→ Predisposing F: ++ E₂ (unopposed) → early menarche / PCO
 late menopause / Granulosa cell tumor / use ERT / obesity / Tamoxifen
 Premalignant lesions: EH → simple 1% / complex 3%
 simple é atypia 9% / complex é atypia 29%

Pathology:

Gross → Localized: endometrial polyp
 → Diffuse: ++ endometrial thickening > 5mm

Microscopy

→ Adenocarcinoma (best prognosis) & commonest
 → Adenoacanthoma (+ benign sq metaplasia)
 → Adenosquamous (+ malignant sq cells)
 → Clear cell ca / papillary cell ca (undiff. so poorest prognosis)

Grading :

→ G I → < 5% malignant undiff. cells = best prognosis
 → G II → 5-50% malignant undiff. cells = intermediate prognosis
 → G III → > 50% malignant undiff. cells = poor prognosis

Spread :

→ **Direct:** myometrium / Cx / Ovaries / FT / vagina
 Lymphatic: para aortic / inguinal / paracervical / parametrial
 Blood : L B L B

Cl . picture :

→ Type of pt / History
 (postmenopausal / white race / NG / PCO / Tamoxifen)

→ **Symptoms:** Post menopausal bleeding (commonest)

→ **Signs:**

*Gen: for metastasis : cachexia/ anemia / jaundice / virchow's LN...

*Abd: enlarged soft uterus ± signs of metastasis : ascites / liver

*PV & bimanual : enlarged soft uterus
 ± adnexal masses (? ut to ov or ov to ut)

→ DD :of post menopausal bleeding

Staging: (FIGO surgical 2018)

→ Stage I : confined to the organ (uterus)
 I a < ½ myometrial invasion
 I b > ½ myometrial invasion ± endocervical glands
 → Stage II : limited local spread : Cx. stroma
 → Stage III : more local spread ± LNs
 III a : Ovaries / FT
 III b : Vagina / Parametrium
 III c : LNs (parametric LNs / paraaortic LNs)
 → Stage IV : distant spread
 IV a : mucosa of bladder & / or rectum
 IV b : distant spread (L B L B)

Inv.

→ To confirm diagnosis :

* Screening: TVS (if ET > 5mm in menopausal) / Hysteroscopy
 * Gold standard (confirmatory) : FC & endometrial biopsy

→ To detect spread:

* eg: chest x-ray / abdominal & pelvic US / bone scan
 * MRI for myometrial invasion & for LNs

→ To assess fitness of pt for surgery: ECG & Lab testing

Ttt:

* Early : Surgery
 * Late : Radiotherapy

→ EH :

depends on:

→ type of EH
 → age of pt
 → desire for fertility (PRG)

options:

→ PRG (DMPA / Mirena)
 → Hysterectomy

→ Stage I : TAH & BSO + cytology ± later radiotherapy

→ Stage II : ttt as cancer Cx (Wertheim's operation)

→ Stage III : radiotherapy
 → External beam = pelvis
 → Extended = pelvis + abdomen

→ Stage IV : Palliative : pain relief / radiotherapy

NB : Unfit pt for surgery in stage I , II : Radiotherapy

* **Ut sarcoma:** rare after fibroid / blood spread / ttt: hysterectomy

* **Choriocarcinoma:**
 → low risk / high risk
 → blood spread

Clinical Staging
 → by picture & examination & biopsy
 Surgical Staging
 → when operate and see on your eyes with Biopsy

stronger
Stratified
Squamous
Non keratinized

weaker
columnar cells

45-55 years
screening
start of sexual
activity

Cancer Cx

most active dividing cells and regenerating
in between is transformation zone
reserve cells of TZ

Def: Tumour arising from ectocx (85%), endocx (15%) starting in reserve cells of TZ
Incidence: 2nd most common after endometrial Ca. / **most preventable**

Etiology :

Predisposing F:
Sexuality: early / multiple / low socioeconomic / multipara / smoking
Not hormonal dependent
Viral: HPV (16, 18) / HSV₂ / HIV
HPV 6 + 11 → infection
low grade sq intraepi lesion
High sq

Premalignant lesions: CIN 1 (LSIL) / CIN 2,3 (HSIL)

Cervical intraepithelial neoplasia
No invasion to basement membrane

CIN 1: atypical cells involve lower 1/3 of ep.
CIN 2: atypical cells involve lower 1/2 (or 2/3) of ep.
CIN 3: atypical cells involve all layers of ep.

without
invasion
of BM

Pathology:

Gross: Ulcer, Nodule, Friable mass (ectocx) / Barrel-shaped cx (endocx)
Microscopy: Sq cell Ca (ectocx 85%) / Adenocarcinoma (endocx 15%)
Grading:
G I → < 5% malignant undiff. cells (best prognosis)
G II → 5-50% malignant undiff. cells (intermediate prognosis)
G III → > 50% malignant undiff. cells (worst prognosis)
Spread:
Direct: uterus / vagina / parametrium / uterosacral / bladder / rectum.
Lymphatic: 1st: paracervical / obturator / ext iliac / int iliac
2nd: common iliac / lat. sacral / para aortic
Blood: L B L B

No inguinal

Cl. picture :

Symptoms → type of patient / **Contact bleeding** from ulcer
Signs
General: Signs of metastasis (anemia – jaundice – virchow's LNs...) / **Uraemia**
Abdominal: (N)
PV & bimanual: Nodule / Mass / Ulcer / vagina / normal sized uterus by tumor
PR: uterosacral & Parametrial involvement
Staging (Clinical FIGO 2018)
Stage I (confined to cx):
I a < 5mm depth of invasion < 7mm width
I b > 5mm depth of invasion > 7mm width (± uterus)
Stage II (local spread):
II a: vagina (but not lower 1/3)
II b: parametrium (but not to lat pelvic wall)
Stage III (more local ± LNs):
III a: vagina (+ lower 1/3)
III b: parametrium till lat pelvic wall (**Uraemia & Death**)
III c: LNs
Stage IV (distant):
IV a: mucosa of bladder & rectum
IV b: distant spread L B L B
DD: Contact bleeding
cervicitis mcc *
cx ca most serious *

* pregnant → pap smear
CA
involvement → 24
termin < 24
wait and reprod after delivery

Biopsy taking:-

1) Direct by speculum open cervix and directly take biopsy if lesion seen
2) if not seen the lesion → colposcopy (magnified more) → if still not seen
3) paint by acetic acid / Iodine → abnormal cells not dyed → take from it biopsy
4) if also not seen → punch biopsy 4g + endocx curettage
5) also not seen → punch biopsy 4g + endocx curettage



Inv.
To confirm diagnosis:
1) Pap smear (screening) cytology
2) Colposcopy to know CIN grading 2/2 + malignancy
3) Biopsy (direct / colposcopy / punch / Cone / LEEP)
To detect spread: CXR / Abd & Pelvic US / Bone scan
Ba enema / EUA / IVP / Cystoscopy / ...
To assess fitness of pt. for surgery: ECG / Lab tests

ttt

1st prevention (HPV vaccine for teenage)
only if unaffected by HPV (taken before sexual activity started)
2nd prevention: screening program by pap smear for whole population / 3 years in low risk, annually in high risk
CIN → 1st Medical ttt & Pap smear after 3-6 months
If refractory to medical ttt:
Cryocautery / diathermy cautery / laser cautery
2nd LEEP / LLETZ
3rd Conization in young age (to preserve fertility) → high risk group
TAH in old age (not desiring fertility)
Cancer Cx:
- Early stage: Surgery
- Late stage: Radiotherapy
Stage I → II a: Wertheim's operation (radical hysterectomy)
Stage II b / III / IV: Radiotherapy / palliative

high risk group
pap smear every 1 year
* low risk (groups 1 & 2) → every 3 years pap smear

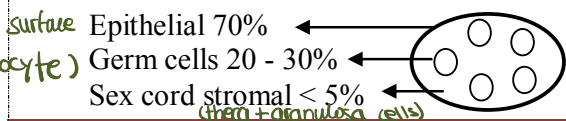
NB:

* Radiotherapy can be used in early stages giving same results as surgical ttt
* Unfit patient: Radiotherapy in all stages
* Ovaries may not be removed as it is not a hormone dependent cancer
* In recurrent cancer Cx: use opposite line of what was used before
* Ca. of cx stump
difficult surgery (adhesions)
no room for intracavitary radiation No radiotherapy
better prevention by TAH instead of subtotal hysterectomy

Cystic **functional**

Benign ovarian tumours (premalignant ovarian lesions)

Clinical classification: Cystic / Solid
Pathological classification: Benign / Malignant
Histological classification



*originate from meso + granulosa dual		Epithelial tumours (post menopausal)				Germ cell tumours (child bearing)			Sex cord stromal		
metaplasia →		(Tubal ep)	(Endo Cx ep)	(End)	(urinary ep)	embryonic (endoderm , meso, ectoderm)	extra embryonic villi	undifferentiated germ cells & sex cord	Granulosa cells	Leydig	Sertoli
		Serous (watery, black mucus) cystadenoma	Mucinous (albumin rich) turbid fluid in US	Transitional (Brenner)	Dermoid (BCT)	Yolk Sac (Endodermal sinus tumor) malignant			Granulosa cell tumour (E2) (malignant)		
Gross	Size	Moderate	Huge	Small	Moderate	Choriocarcinoma (malignant)			Sertoli-Leydig cell tumor (androblastoma) (malignant)		
	Site	bilateral in 50%	unilateral	bilat in 15%	bilat in 15%						
Consistency	Consistency	Uni/multilocular Papillary (exo/endophytic)	Multilocular	Solid	Uniloc é thick capsule & long pedicle	Gonadoblastoma			Fibroma		
	Microscopy	Cuboidal ep (ciliated / Non)	Columnar ep é Goblet cells	Transitional ep	Endo / Ecto / Mesoderm Rokitansky nodule						
Characteristic features		Psammoma bodies (calcified cells)	Pseudo-myxoma peritonii ttt: chemotherapy (radioactive intraperitoneal colloid)	Coffee bean nuclei	- mamilla - chemical Peritonitis	In dysgenetic gonads Y ch . as AIS			Meig's syndrome (+ ascites & Rt pl. effusion)		
Secretions		CA 125	CA 19-9 In addition	only problem ± E2 cause bleeding post menopause	Struma -ovarri (thyroxine)	30% Dysgerminoma			No malignant transformation		
Malignant transformation		30% cystadenocarcinoma	5%	Benign life long	< 1% high risk of torsion						

Complications:

- 1) Torsion → gangrene (rare) *you should remove cyst with origin w/out rupture bcz recurrence risk variable → torsion logical → remove it.*
- 2) Hemorrhage → acute abdomen
- 3) Rupture → nothing (in serous) *fluid*
→ chemical peritonitis (in dermoid)
→ pseudo-myxoma (in mucinous) *albumin converted to fibrous tissue sever adhesion*
- 4) Infection → in puerperium
- 5) In *in pregnancy* **carceration** → pressure symptoms
- 6) Malignant transformation

Cl. picture:

- symptoms:
- * asymptomatic
 - * mass (abdominal)
 - * **no bleeding** (except functioning)
- signs:
- general : Cachexia in Mucinous
 - abd: swelling (insp. / palp. / percussion)
 - PV & Bimanual : Adnexal mass
 - DD Krukenberg tumor *Nodules Non tender*

Inv : **US** / **CA 125** / **Laparoscopy**

Ttt:

- Ovarian cystectomy (Dermoid) + check other ovary
- Oophorectomy (in huge mass)
- **Pan hysterectomy (TAH+BSO)** (in old age) *epithelial b.*
- In pregnancy (when to remove it ?) *Risk of torsion*
germ cell tumors → wait 2nd tri remove it 3rd tri wait to not touch corpus uterus remove it.

Malignant ovarian tumours

Def : malignant T. arising from surface ep , germ cells & sex cord stroma of the ovary.

Inc : 3rd most common malignancy of ♀ genital tract é worst prognosis , deaths from ovarian tumours > deaths from end. & cx cancer together

Et : → Predisposing F : NG / induction of ovulation / white race / genetic (BRCA 1 & 2 , Lynch 2) , OCs are protective as they - - ovulation
→ Premalignant : Epithelial T (serous 30% & mucinous 5% cystadenoma) / Germ cells (BCT < 1% / Gonadoblastoma 30%)

Pathology : Gross : bilateral / solid é hemorrhage & necrosis / ascites / vascularity ↑ by doppler
Microscopic & Grading

	Epithelial (> 70 %) old age			Germ cell Tumors (20 - 30 %) Child bearing				Sex cord stromal Tumors (< 5 %)		Extreme ages	Metastatic
	Serous	Mucinous	Endometriod	Dermoid cyst MCT MST	Chorio Ca	Endodermal sinus T	Gonadoblastoma Dysgerminoma	Granulosa cell T	Sertoli Leydig	Krükenberg (atypicat 2 ^{ries})	
Mic	Psammoma bodies	—	End. glands	Endo / Meso / Ectoderm	Trophoblasts	Shiller Duval bodies	Lymphocytes radio sensitive	Call Exner bodies (Rosette shape)	Androgenic cells	tumor same structure as in p Signet ring cells 	
Secretions		CA19-9 CA 125 >35		—	HCG	AFP	LDH	E ₂ / Inhibin	Androgen Anti Androgen Rx	—	

Spread :

- Direct: other ovary / uterus / fallopian tubes
- Lymphatic: para aortic LNs
- Blood : L B L B
- Transcoelomic: peritoneal seedling

Cl.pict:

- Symptoms : Type of pt / Asymptomatic (very late presentation) / GIT symptoms / mass / cachexia / NO bleeding except in functioning T
- Signs:
 - General: cachexia / anemia / jaundice / virchow's LNs / pl effusion
 - Abd: inspection / palpation / percussion (mass / ascites) peau d'orange
 - PV& Bimanual: Nodules in DP in krukenberg T / Adnexal masses

→ Staging:

- Stage I (confined to ovary)
 - Ia : one ovary , Ib : both ovaries
 - Ic : one or both é + ve peritoneal cytology (microscopic rupture)
- Stage II (local spread: adnexa)
 - IIa : Ut / FT , IIb : UB / colon / rectum
- Stage III (more local ± LNs) (you see)
- Stage IV (distant spread)
 - IVa : lung & pleural effusion
 - IVb: distant liver parynchyma / brain / bone

FIGO surgical staging 2018

Inv :

- To confirm diagnosis
 - US: bilateral / solid / papillae / ascites (1 or more)
 - Doppler for vascularity / Tumour markers (CA 125) / Laparoscopy
 - RMI = US (1 or 3) × Menopause (1 or 3) × CA 125 IF > 200 (High risk)
(1 if one criterion in US or 3 if more than one criterion in US)
- To detect spread: Ba meal / enema / upper & lower GI / CXR / CT abd & pelvis
- To assess fitness of pt for surgery : ECG / Labs / ...

Ttt:

- Early : surgery / Late : surgery (debulking + chemotherapy)
- Surgery (in all stages)
- Stage I : Exploratory laparotomy and TAH + BSO + omentectomy + peritoneal cytology + sampling LNs
- Stages II → IV : Debulking + chemotherapy

NB:

- * Debulking in late stages with fixed tumor (as above + removal of all tumor tissue > 1cm) :to decrease toxicity of post operative chemotherapy
- * Stage Ia (germ cell T): can be unilat salpingo oophorectomy till completing her Family
- * Dysgerminoma : radiosensitive

Malignant tumours of vulva

Def: Malignant tumour arising from ^{most common from} labia majora / minora / clitoris .
Inc: 4th most common tumour of ♀ genital tract after end , cx & ovaries

Etiology : ^{same as ca}
 ↳ Predisposing F: rare in young age (smoking / HPV infection) / old age ^{abnormal pap smear / many sexual partners}
 ↳ Premalignant lesions:
 ↳ VIN (1,2,3) : VIN 1 & 2 usually regress
 ↳ Lichen sclerosus & Atrophicus (in old age) ^{pruritis vulvae}
 ↳ Paget's disease (adenoca. in situ)(multifocal)

Pathology:

↳ Gross: VIN : may appear **N**
 ↳ Invasive: Nodule / Ulcer / Mass
 ↳ VIN 1 , 2 , 3 / lichen sclerosus
 ↳ Mic: VIN 1: atypical cells in lower 1/3 of ep } without invasion of BM
 VIN 2: atypical cells lower 1/2 or 2/3 of ep }
 VIN 3: atypical cells in all ep.
 ↳ Invasive: Squamous cell ca.(commonest)
 ↳ Paget's Adeno ca. / Melanoma / Basal cell ca (rare)
 ↳ Grading
 ↳ G I : < 5% malignant undiff.cells (best prognosis)
 ↳ G II: 5-50% malignant undiff.cells(intermediate prognosis)
 ↳ G III : > 50% malignant undiff.cells (worst prognosis)
 ↳ Spread : **Direct:** vagina / urethra / anus / perineum
 ↳ Lymphatic: inguinal → femoral (LNs of Cloquet)
 ↳ Blood : L B L B

Cl . picture :

↳ Symptoms
 ↳ Type of pt
 ↳ In VIN : Asymptomatic or Pruritis vulvae
 ↳ In invasive : Pain / Mass / Ulcer / Contact bleeding
 (in addition to long standing pruritis valvae)
 ↳ Signs : *General: signs of metastasis
 *Abdominal : rare
 *Local:
 ↳ In VIN : raised rough skin / thin reddish epithelium
 ↳ white hyperkeratinization (leukoplakia)
 ↳ In invasive: ulcerated / pigmented mass
 ↳ labia majora mostly then minora then clitoris
 ↳ ± enlarged inguinal LNs

Staging: (FIGO surgical 2009)

↳ Stage I : (confined to vulva) : < 2cm
 ↳ Stage II: (confined to vulva): > 2cm
 ↳ Stage III: (local spread ± LNs) :
 to lower vagina / lower urethra / anus
 ± Inguinofemoral LNs
 ↳ Stage IV: (distant spread)
 * IVa: UB mucosa / Rectal mucosa
 All urethral mucosa / All vaginal mucosa
 * IVb: L B L B

Investigations:

↳ To confirm diagnosis: Direct excisional biopsy
 If no apparent lesion: use colposcopy or paint é Toluidine blue
 & take biopsy from the white lesions
 ↳ To detect spread :
 ↳ Colposcopy for cervix & vagina to detect associated involvement
 (as all are predisposed by HPV infection)
 ↳ CXR / CT abdomen & pelvis
 ↳ To assess fitness of pt. for surgery : ECG & Lab tests

Treatment:

Early stages:  Surgery / Late stages:  Radiotherapy
 ↳ In lichen sclerosus : corticosteroid ointment long time , water less
 ↳ In VIN :
 ↳ 1 & 2 : Symptomatic ttt to relieve pruritis for 3-6 months
 by topical steroids (as usually regress spontaneously)
 ↳ In small lesions : excisional biopsy
 ↳ In wide lesions (if not responding to topical steroids):
 skinning vulvectomy ± skin graft
 ↳ In VIN 3 , Stage I : wide local excision
 ↳ Stage II : wide excision + LN sampling
 ↳ Stage III → IV : external irradiation (radical vulvectomy is not done nowadays)

Malignant tumors of vagina

*Least common * 2ry far more common than 1ry

ttt : * in VaIN : 5- flurouracil vaginal cream for multifocal lesions

*Surgery : Wertheim for early cases

* Radiotherapy for most of cases

NB: Sarcoma Botryoides in prepubertal girls → Mass & Bleeding

Functional ovarian cysts

Characteristics:

- Occurs in childbearing period
- Represents 25% of all adnexal masses
- Unilocular
- Ecolucent
- ≤ 7 cm $\rightarrow$ Normal < 2 cm
- Spontaneous regression is a rule

* Para ovarian cyst $\rightarrow$ from remnants of duct + serous fluid cause pressure symptoms on ureter hydroureter, > 7 cm cystectomy

* serous cyst type.
* 3 abnormal menstruation per year $\rightarrow$ Normally occur

* Differ from serous cyst benign by CA125.

* period come when $\downarrow$ E₂ + $\downarrow$ P_{ROG} to shedding of endometrium

Types:

75%
- Follicular cyst (commonest): Occurs in 1st half of cycle (post menstrual) secrete estrigen

20%
- Corpus luteum cyst (2nd most common): Occurs in 2nd half of cycle vascular & may cause acute pain (pre menstrual) secrete PRG

- Theca lutein cysts: as in V.mole & OHSS

5%
- Endometriomas: if more than 4cm, laparoscopic cystectomy is needed. Otherwise medical ttt by continuous COPs in case of endometriosis inside ovary $\rightarrow$ hmg cyst $\rightarrow$ chocolate material

- Inflammatory cysts (TOC / TOA): ttt broad spectrum antibiotics & follow up for size by US, if no regression, then surgical drainage is needed Heterogenous

PID $\rightarrow$ accumulation of pus in tube $\rightarrow$ hydrosalpinx + tube + ovary $\rightarrow$ TOA $\rightarrow$ chronic pain + congestion + fever

- Inclusion cysts: precursor of epithelial ovarian tumors

cause bleeding after missed period
* ttt: Spontaneous regression is the rule, if not, give cyclical COCPs monthly with US follow up

stop to ovulate

misdiagnosed by appendicitis ectopic (HCG) need surgery

multifollicular

high HCG

+ MFC

cyst

abscess

microscopic

Benign vulva lesions

*Pruritis vulvae mca

With vaginal discharge (80%)

- Candida albicans
- Trichomonas vaginalis

Without vaginal discharge (20%)

- Generalized disease
- Allergy
- Scabies, seborrhea
- Lichen sclerosus (postmenopausal) $\rightarrow$ ttt: corticosteroid cream (need follow up as it may be premalignant) water based ointment $\rightarrow$ oil based
- Psychogenic
- Urinary or rectal incontinence
- fistula

Vulval swellings

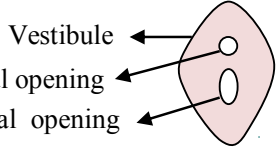
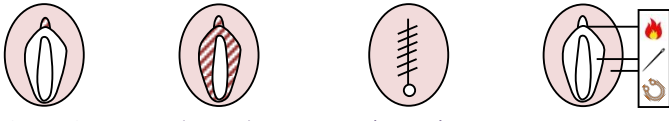
Cystic swellings

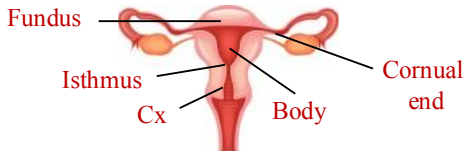
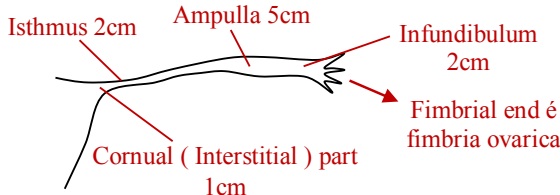
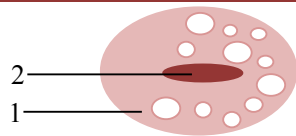
- Bartholin's duct gland $\rightarrow$ cyst $\rightarrow$ ttt: marsupialization remove the top
- Infected cyst $\rightarrow$ ttt: antibiotics
- Abscess $\rightarrow$ ttt: drainage
- Inclusion dermoid $\rightarrow$ ttt: excision & biopsy
- Sebaceous $\rightarrow$ ttt: excision & biopsy
- Hydrocele of canal of Nuck $\rightarrow$ ttt: surgical excision (as hernia repair)
- Endometrioma $\rightarrow$ medical / surgical depending on size
- Hematoma $\rightarrow$ incision & drainage
- Varicosities $\rightarrow$ medical ttt: sclerosing material or ligation of the veins (if not pregnant)
- Hidradenitis suppurativa (it affects sweat glands in the axilla & mons pubis & causes very bad odor) $\rightarrow$ ttt: check for DM & local antibiotic cream
- Urethral caruncle (it causes dysuria & contact bleeding) $\rightarrow$ ttt: excision & cauterization

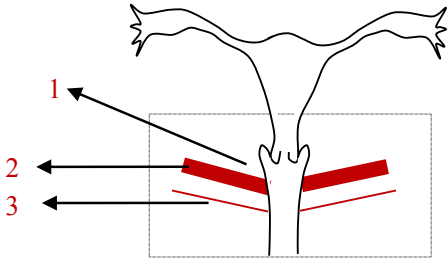
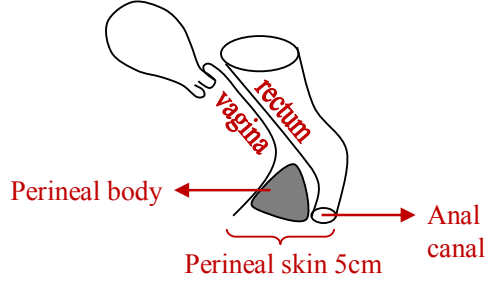
Solid swellings

- Lipoma
 - Fibroma
 - Nevus
 - Caruncle
 - Papilloma / warts
 - Hydradenoma
- ttt: excision & biopsy

Anatomy of female genital tract

	Gross	Histology	Arterial supply	Lymphatics	Applied anatomy
Vulva	 - Mons venereum (hairy pad of fat over SP) - Clitoris: midline erectile organ - 2 labia majora: lat hairy é fat , sweat & sebaceous glands - 2 labia minora: med é non hairy skin , no fat - Hymen : memb 2 cm deep to vulval opening - Bartholin glands on posterolat aspect of labia majora , duct opening in vestibule	- Stratified squamous epithelium (keratinized) - Transitional ep. For Bartholin gland	- Int pudendal artery (one of 2 terminal branches of ant division of IIA)	Superficial inguinal LNs	- FGM é 4 types with early(bleeding , infection) & late (loss of satisfaction, sexual problems & frigidity) complications.  - Clitoridal cyst : post circumcision - Cryptomenorrhea:in imperforate hymen - Bartholin cyst : in obstructed duct
Vagina	- Fibromuscular potential tube é rugae - 7 – 9 cm anterior wall related to UB & urethra - 10 – 11 cm posterior wall related to DP , rectum , perineal body - Lat borders related to : 1) ureter 1cm 2) cardinal (Mackenrodt's) lig 3) levator ani (deep perineal ms) 4) bulbocavernous (superficial perineal ms)	- Non keratinized stratified squamous epithelium	- Vaginal artery from IIA	Upper third : as Cx Lower third : to Inguinal LNs Middle third : II LNs	- Septum : longitudinal / transverse - Ant. wall prolapse: Cystocele , urethrocele - Post wall prolapse: Enterocele , rectocele , deficient perineum - Support : Mackenrodt's lig / Uterosacral lig / Pubocervical lig - Episiotomy : cut through post or posterolat vag wall - Post colpotomy or culdocentesis : for drainage of pelvic abscess in DP - US guided oocyte retrieval through post colpotomy - Ureter may be injured at lat fornix while clamping the vag angles in TAH - Pudendal n block :done at level of ischial spines

	Gross	Histology	Arterial supply	Lymphatics	Applied anatomy
Uterus	- Pear shape 1×2×3 inches  - AVF (85%) or RVF (15 %) - Ant : UB / Pubocervical lig - Post : DP / Uterosacral lig - Lat: Broad lig & inside it : - Fallopian tubes - Remnants of Wolffian ducts - Uterine artery - Ureter & Mackenrodt's lig	- Endometrium (modified mucosa é glands & stroma) - Myometrium of body of ut formed of 3 ms layers : - Outer longitudinal - Middle criss-cross - Inner circular While Cx is formed of outer & inner layers only - Perimetrium : peritoneal adherent over the body but loose over Cx	- Uterine a (tortuous course on lat borders) from ant division of IIA - Anastomosis at cornu with ovarian a	- Fundus : paraaortic LNs - Cornu : superficial inguinal LNs - Body : II LNs - Cx : 1^{ry} → paracervical parametrial , obturator , II LNs & EILNs 2^{ry} → CI LNs , Lat. sacral & Paraaortic LNs	- Ut prolapse : 1st , 2nd & 3rd degrees - Ut. support : Mackenrodt's lig / Uterosacral lig / Pubocervical lig (as vagina) - MRKH Syndrome in case of 1^{ry} amenorrhea é presence of secondary sexual characters - Cong anomalies : as septate / bicornuate / didelphys with RPL , PTL - Cx is sensitive only to dilatation (Cx dilatation should be done under anesthesia)
Fallopian tubes	2 Tortuous tubes 10cm in length  - Runs in upper part of broad lig - For ovum pick up , transport & nutrition for ovum & sperm	- Mucosa (endosalpinx) cubical or columnar partially ciliated - Musculosa: 2 ms layers (outer long & inner circular) - Serosa or loose peritoneal covering	- Branches from uterine & ovarian arteries	Paraaortic LNs	- Tubal point (½ inch above mid inguinal point) in cases of pain , PID , ectopic . - Commonest site for ectopic pregnancy (ampullary part) - Hydrosalpinx & pyosalpinx (ch . PID) - Commonest permanent method of contraception (tubal ligation) - Tubal disconnection (TD) in cases of hydrosalpinx prior to IVF
Ovaries	- Almond shape 1×2×3cm - On ureter & bifurcation of II vessels - Not covered by peritoneum - Corrugated surface due to repeated stigmata of ovulation - Attached to ut by ovarian ligament , to lat pelvic wall by infundibulopelvic lig , to the back of the BL by mesovarium	 1) Outer cortex é follicles 2) Inner medulla 3) Hilum (site of attachment of mesovarium)	- Ovarian arteries from abdominal aorta NB : - Rt ov. v → IVC - Lt ov. v → Lt Renal v	Paraaortic LNs	- In ovariectomy : 6 clamps needed 2 on each pedicle (ovarian , infundibulopelvic & mesovarium) ligaments. - Streak gonads in absence of sex cord cells covering the germ cells , forming Turner syndrome (45 XO) - Responsible for 1) ova production (ie ovulation) 2) hormone formation (E₂ , PRG) by granulosa & theca cells of oocytes

Ureter	Pelvic floor	Perineum
Gross : 25 cm in length , retroperitoneal - Enters pelvis in ovarian fossa above the bifurcation of CIA - Runs downwards in the base of BL <u>below</u> uterine artery . - crosses forward related to lateral vaginal wall to enter trigone of the urinary bladder. Histology : Lined by transitional epithelium Arterial supply : Branches from IIA , uterine artery , Inf. vesical artery , vaginal artery Lymphatic drainage : Iliac LNs Applied anatomy : - Injury at - Clamping infundibulopelvic ligament - Clamping Uterine artery 1 cm lateral to Cx - Clamping Vaginal angles - Avascular necrosis in meticulous dissection → uretro vaginal fistula , symptoms manifest few days post – operatively	 1) Peritoneum of DP with extra peritoneal fat & cellular tissue 2) Levator ani ms (deep perineal ms) , (urogenital diaphragm) with : - ischiococcygeus - ileococcygeus - pubococcygeus → pubourethralis (decussation around urethra) → pubovaginalis (decussation of ms fibers around vagina) → Puborectalis (decussation of ms fibers around rectum) 3) Perineal ms (superficial) (ischiocavernosus , bulbocavernosus & transverse perineii ms) Fat & skin of vulva * The midline is pierced by urethra , vagina & anal canal	Area of 5 cm between vaginal orifice & anus covered by less hairy skin & less SC tissue Perineal body : - a fibromuscular pyramidal structure between posterior vaginal wall (lower $\frac{1}{3}$) & anterior wall of anal canal  - It is the point of insertion of superficial perineal ms & above it passes the levator ani muscle Applied anatomy : If defective , ie: deficient perineum that causes sexual problem & is treated by posterior colpoperineorrhaphy .



Uterine & cervical ligaments

Support (to prevent prolapse)	Protect important structures
1) Lateral cervical = Mackenrodt's ligament = Cardinal ligament (strongest) Fanning from uterus to lateral pelvic wall 2) Uterosacral (posterior) : From uterus & Cx to periosteum of sacrum 3) Pubocervical (anterior) : From Cx to back of SP	1) Broad ligament: (lateral from uterus to lateral pelvic wall) , Contents : - Fallopian tube (FT) - Parametrial lymphatics & LNs , S & PS nerves - Remnants of Wolffian duct: → Hydatid cyst of Morgagni at fimbrial end of FT → Epoophoron → Paroophoron → Gartner duct : lateral to tube & downward to anterolateral wall of vagina → Paraovarian cyst : in case of cystic dilatation of remnants of Wolffian duct 2) Ovarian ligament (Med between uterus and ovary) : Protects ovarian vessels 3) Infundibulopelvic ligament (Lat between ovary & lateral pelvic wall) : Protects ovarian vessels

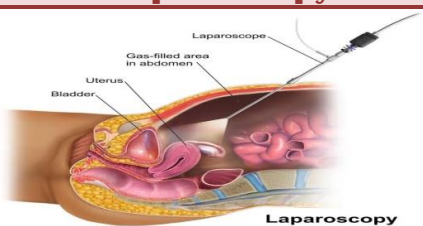
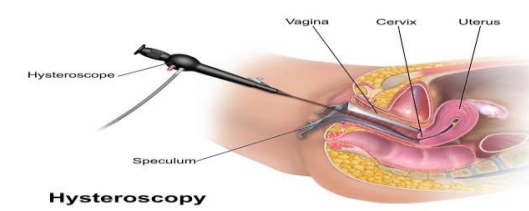
NB : Round ligament :

Gubernaculum that attaches cornual end of of uterus to labia majora passing through inguinal canal , it protects Sampson artery & keeps AVF position of uterus.

Sexual differentiation

Gonadal differentiation (Genital ridge)	Internal organ differentiation (Wolffian duct / Mullerian duct)	External organ differentiation (Urogenital sinus)
XY XX TDF NO TDF <u>Gonads :</u> = testicles = ovaries <u>Germ cells :</u> Spermatocytes oocytes <u>Sex cord cells :</u> * Sertoli cells W secrete MDIF Granulosa cells Theca cells * Leydig cells → atrophy → Hilar cells	XY Testosterone → growth of <u>Wolffian duct</u> XX NO TDF / NO testosterone * atrophy of Wolffian duct NO Sertoli cells / NO MDIF * growth of <u>Mullerian duct</u> (paramesonephric duct)	XY XX Penis ← Genital Tubercle → Clitoris
Anomalies of Ovary	Anomalies of	Anomalies of Hymen
* Aplasia * Hypoplasia * Accessory * Streak gonads (dysgenetic) as in Turner Syndrome	* FT : Aplasia / hypo / accessory osteum / diverticulum * Uterus : Aplasia / hypo / septate / bicornuate / didelphys / unicornuate / arcuate / rudimentary horn * Cx: Aplasia / atresia / incompetent * Vagina : Aplasia / hypo / transverse septum / longitudinal septum	* Imperforate hymen: Failure of canalization of lower part of urogenital sinus

Endoscopy in Gynecology

	Laparoscopy	Hysteroscopy
	 Laparoscopy	 Hysteroscopy
Def	Introduction of an optic lens through <u>umbilicus</u> to visualize peritoneal cavity & pelvic organs	Introduction of an optic lens through <u>cervix</u> to visualize the uterine cavity
Indications	* Diagnostic : → Unexplained infertility → Ch. Pelvic pain / Endometriosis → Cong anomalies of uterus * Operative : → Ovarian (cystectomy / oophorectomy) → Tubal (ectopic / ligation / disconnection) → Uterus (myomectomy / hysterectomy) → Endometriosis : ablation of foci → Adhesiolysis	* Diagnostic: → Infertility → RPL / Ut septum → AUB / Polyp * Operative : → Polypectomy → Septum resection → Myomectomy (submucous) → Division of of IU synechia → Tubal occlusion
Technique	- GA - Trendlenberg position (head down) - Veress needle at umbilicus & inflate 3-5 liters CO₂ é pressure 15 mmHg - Introduce lens , light source , camera & manipulator - MB dye may be injected through Cx to visualize patency of FT - Irrigation , evacuation at the end of procedure	- NO anesthesia (in office procedure) , Local or GA in operative procedures - Dorsal lithotomy position - Dilatation of Cx in operative procedures - Uterine distension by CO₂ , glycine (is a must in op procedures) - Lens , light source , camera are introduced - Removal of instruments at the end of procedure
Comp.	- Anesthesia complications / Cutaneous surgical emphysema - Electrosurgical complications to bowel , uterus , nerves - Injury to vessel , intestine , bladder / Infection - Neurological injury in poor patient positioning	- Fluid overload (commonest complication) - Electrolyte imbalance - Anesthesia complications (if used)
Adv.	- Less hospital stay , early return to work - Minimal adhesions - Early recovery , less GIT complications (ileus , gastric dilatation) - Better cosmetic - Rare wound complications (dehiscence & infection)	- Can be done without anesthesia as an office procedure (no dilatation for diagnosis) - Proper visualization of uterine cavity