

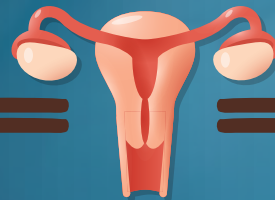


Gynecology & Obstetrics  
For undergraduates

هدية  
مجانية

# Notes on the Board of Dr.Nadine's Lectures

5<sup>th</sup> Edition  
2023



Notes of Dr. Nadine Alaa Sherif  
Professor of Obstetrics & Gynecology  
Faculty of Medicine – Cairo University

Written by:  
Reem Abdelhakim  
Rheumatology resident

[www.nadine-alaa-sherif.weebly.com](http://www.nadine-alaa-sherif.weebly.com)

*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



## Index

### Gynecology

|                                                                     |         |
|---------------------------------------------------------------------|---------|
| Physiology of menstrual cycle -----                                 | 7       |
| Amenorrhoea -----                                                   | 8       |
| Puberty & Menopause -----                                           | 9       |
| Anovulation , PCO , Hirsutism & Hyperprolactinemia -----            | 10      |
| Infertility -----                                                   | 11      |
| Fibroid -----                                                       | 12      |
| Endometriosis & Adenomyosis -----                                   | 13      |
| AUB -----                                                           | 14      |
| Contraception -----                                                 | 15      |
| Pelvic Organ Prolapse -----                                         | 16      |
| Urinary Incontinence & Rectovaginal fistula -----                   | 17      |
| Lower genital tract infections -----                                | 18      |
| Acute PID -----                                                     | 19      |
| Chronic PID -----                                                   | 20      |
| STDs -----                                                          | 21      |
| Scheme for oncology-----                                            | 22      |
| Endometrial Carcinoma -----                                         | 23      |
| Cancer Cervix -----                                                 | 24      |
| Benign Ovarian Tumours -----                                        | 25      |
| Malignant Ovarian Tumours -----                                     | 26      |
| Malignant vulval & vaginal tumours -----                            | 27      |
| Functional cysts of the ovary -----                                 | 28      |
| Benign conditions of the vulva & vagina -----                       | 28      |
| Anatomy of female genital tract -----                               | 29 - 31 |
| Sexual differentiation & abnormalities of female genital system --- | 32      |
| Endoscopy in Gynecology -----                                       | 33      |

### Obstetrics

|                                                                       |        |
|-----------------------------------------------------------------------|--------|
| <b>Bleeding in early pregnancy</b>                                    |        |
| Abortion -----                                                        | 35     |
| Ectopic pregnancy -----                                               | 36     |
| GTDs & Vesicular mole -----                                           | 37     |
| <b>Bleeding in late pregnancy</b>                                     |        |
| APHge / Intrapartum Hge -----                                         | 38     |
| Complications of 3rd stage of labor -----                             | 39     |
| Anatomy of female pelvis & fetal skull -----                          | 40     |
| Normal Labor -----                                                    | 41     |
| Abnormal labor & CPD -----                                            | 42- 43 |
| Operative vaginal delivery -----                                      | 44     |
| Occipito posterior / Face & Brow presentations -----                  | 45     |
| Breech presentation -----                                             | 46     |
| Shoulder presentation -----                                           | 47     |
| Multi fetal gestation -----                                           | 48     |
| CS / Episiotomy / Analgesia & Anesthesia in labor -----               | 49     |
| Assessment of fetal wellbeing -----                                   | 50     |
| Premature Rupture of Membranes / Amniotic fluid disorders -----       | 51     |
| Prematurity & Postmaturity -----                                      | 52     |
| SGA & LGA -----                                                       | 53     |
| Fetal & neonatal asphyxia -----                                       | 54     |
| Puerperium -----                                                      | 55     |
| Puerperal sepsis -----                                                | 56     |
| Fetal birth injuries -----                                            | 57     |
| RH isoimmunization -----                                              | 58     |
| <b>Medical disorders during pregnancy</b>                             |        |
| Hypertension with pregnancy -----                                     | 59     |
| DM with pregnancy -----                                               | 60     |
| UTI , Cardiac diseases & Seizures with pregnancy -----                | 61     |
| Anemia , Thyroid disorders ,VTE & PE with pregnancy -----             | 62     |
| GIT disorders with pregnancy / Toxoplasma / Rubella -----             | 63     |
| Prenatal diagnosis of congenital anomalies -----                      | 64     |
| Fertilization, implantation & placenta formation -----                | 65     |
| Placenta , cord -----                                                 | 66     |
| Diagnosis of pregnancy / Physiological changes during pregnancy ----- | 67     |
| ANC -----                                                             | 67     |
| High risk pregnancy , Maternal mortality -----                        | 68     |

Instruments in OBGYN 69-70

Clinical History taking 72-77

# OBSTETRICS

\* Doubling bc  $\uparrow$  villi growth  $\uparrow$  secretion  
Stop when placenta formed (3 months)

**1) Abortion** **BLEEDING**  

\*risk factors:-  
Age, alcohol, smoking, obesity, previous DM, infection, fibroid, cervical surgery

**Ttt of the cause: eg**

- \*LD Aspirin
- LMWH (clexane) SC  
in APL
- \*PRG in 1<sup>st</sup> trimester in LPD
- \*septum resection  
in septate uterus
- \*myomectomy(hysteroscopic)  
in fundal submucous myoma
- \*cerclage operation for  
incompetent Cx → minimal  
(at 12-13wks) <sup>to confirm</sup> <sup>pain abortion</sup>  
 Do Surhoney <sup>No Chromosomal</sup>  
 ↓ <sup>Abn after 1st uterus</sup>  
 at labor pain <sup>Go up to Abilment</sup>  
 remove it <sup>normal vaginal</sup>  
 Vaginal <sup>through vaginal</sup> common  
 Abdominal <sup>\*cervix</sup> less common <sup>مخارج</sup>  
 \*previously cervical  
 amputation in manchester

## Page 36



\* Arcus Stella reaction → changes in uterine mucosa due to progesterone secreted from pregnancy

Inc: 0.15%

### 3) GTDs (Abnormal proliferation of villi) anywhere else.

#### Differentiated (With villi)

(pregnant, uteri, and implant in embryo (extraembryonic tissue))

#### Undifferentiated (NO villi) (metastatic)

low or high risk

#### GTT (GTN)

#### Chorio Ca.

#### Placental site T.

#### Epithelioid T.

#### Invasive Mole (locally m)

#### Chorio Ca.

#### Placental site T.

#### Epithelioid T.

| Low risk                                                                                                                                                                                                                                                   | High risk                                                                                                                                                                                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>3 at least</p> <p>* Age &lt; 40</p> <p>* &lt; 4 months from preg.</p> <p>* &lt; 100,000 βHCG</p> <p>* &lt; 6 cm theca lutein</p> <p>* No liver or brain M.</p> <p>* No prev chemo</p> <p>ttt: Single agent chemotherapy (MTX)</p> <p>good prognosis</p> | <p>* Age &gt; 40</p> <p>* &gt; 4 months from preg.</p> <p>* &gt; 100,000 βHCG</p> <p>* &gt; 6 cm theca lutein</p> <p>* Liver or brain M.</p> <p>* Previous chemo</p> <p>ttt: Combined chemotherapy (EMA - CO)</p> <p>bad prognosis</p> |

Pathology: Gross: enlarged ut & friable tissues & areas of hge & necrosis

- Mic: undifferentiated villi
- Grading:
  - G1: < 5% malignant undiff. cells
  - G2: 5-50% malignant undiff. cells
  - G3: > 50% malignant undiff. cells
- Spread:
  - Direct: to surrounding local
  - Lymphatic: very rare
  - Blood: Lung B L B corio carcinoma.

- Cl. pict:
  - ① vaginal bleeding & H/O of pregnancy event
  - ② Gen: anemia / metastasis
  - ③ Abdominal: enlarged soft uterus / metastasis
  - ④ PV & bimanual: enlarged ut / adnexal fullness / vag. masses

- FIGO staging:
  - Stage I: confined to uterus
  - Stage II: local spread (ut / ov / vagina)
  - Stage III: + lungs blood spread "exception" very early mets
  - Stage IV: distant other than lung brain / liver.

- Inv:
  - ① To confirm diagnosis: HCG / US → if i take biopsy → severe bleeding will happen.
  - ② To detect spread: Chest X-ray / MRI pelvis
  - ③ To assess fitness of pt for ttt: LFTs / KFTs

- Ttt:
  - Low risk: single agent chemo (MTX) & FU 1 year after -ve HCG → As (M)
  - High risk: combined chemo (EMA-CO) & FU 1 year after -ve HCG

- NB: Hysterectomy if:
  - \* Cases complicated by severe bleeding
  - \* Chemoresistant cases as placental site & Epithelioid tumor

www.nadine-alaa-sherif.weebly.com

- V. Mole (benign)**
  - more if 11 → spontaneous abortion
  - Commonly empty
  - Complete mole: sperm + Anucleated ovum 46 XX (paternal)
  - Partial mole: 2sperms + ovum 69XXX/XXY/YYY
  - 23X/23Y 23X → will end with missed abortion
  - In extreme Ages, ↓ fat diet, Race (Asia)

- Pathology:
  - Uterus:
    - Gross: ut enlarged, soft, filled & grape like vesicles & no fetus / sac or liquor (or presence in partial mole)
    - Mic: (same in invasive mole too): differentiated villi
  - Ovaries: OHSS like (HCG theca lutein cysts)

- Clinical picture:
  - Symptoms:
    - vaginal bleeding / prune juice discharge
    - lower abdominal pain / enlargement
  - Signs:
    - Gen: anemia / thyrotoxic (TSH like) / ↑BP (HCG effect)
    - Abd: Ut > period of amenorrhea / soft Doughy ut
    - PV & bimanual: soft Cx / vesicles / full adnexa
  - Complications: Invasive mole 20% / Chorioca. 5% → Need follow up
  - DD: bleeding in early pregnancy

- Inv:
  - To confirm diagnosis: US: snow storm appearance / Ov theca lutein cysts
  - For follow up: β-HCG: very high level → To follow up
  - To detect complications: CXR / MRI pelvis
  - Ttt: Suction Evacuation (e echolics & antibiotics)
  - FU & β-HCG weekly till -ve then monthly for 1 year (use COCPs as contraception)

- NB:
  - In old age, no desire for fertility = TAH
  - If plateau or rising HCG: use MTX
  - Anti-D in partial mole in Rh -ve non sensitized pts

Notes of Dr. Nadine's lectures by Reem Abdelhakim

# Bleeding in late pregnancy (APHge)

**Definition :** Bleeding after fetal viability (24 wks) till delivery

**Etiology :** Maternal → Obstetrics : **Abruptio-Placentae** (accidental hge) / **Placenta previa** (PL PRV)

Gynecology : **Vaginal lesion** / **Cervical lesion**

Systemic : **Drugs (anticoagulants)** / **Systemic disorders**

Fetal : **vasa previa** (minimal bleeding → severe fetal distress) → less blood delivery to baby

| *Diagnosis imp to manage     | <b>Accidental Hge</b><br>(commonest)                                                                                                                                                                                                                                                                                                  | <b>Placenta previa</b><br>(2 <sup>nd</sup> most common)                                                                                                                                                                                               |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Definition</b>            |  Normally implanted placenta                                                                                                                                                                                                                         |  Placenta implanted on LUS                                                                                                                                           |
| <b>Risk Factors</b>          | PG (PIH) / External trauma / APS / Smoking<br>Sudden ROM in polyhydramnios                                                                                                                                                                                                                                                            | Multipara / old age / Prev CS / <u>prev PL PRV</u><br>Malpresentations / Twins                                                                                                                                                                        |
| <b>Mechanism (Pathology)</b> | * In PIH: Blood → inbetween myometrial fibers → <b>tender hard ut</b> → <b>Couvelaire ut</b> (concealed accidental Hge)<br>* In trauma: soft ut & normal myometrium (revealed accidental Hge) → <b>ext vaginal bleeding</b>                                                                                                           | to enlarge and thinning of lower part<br>Shearing mechanism between LUS & placenta → <b>Unavoidable bleeding</b>                                                                                                                                      |
| <b>Types</b>                 | Mixed / Revealed / Concealed                                                                                                                                                                                                                                                                                                          | Complete centralis / <b>incomplete centralis</b><br>Marginalis < 2 cm from os / <b>Lateralis</b> > 2 cm from os                                                                                                                                       |
| <b>CI picture</b>            | Symptoms<br>usually abdominal pain<br>Signs<br>→ General: PIH ? ± Shock (BP may not be ↓) <b>aubre</b><br>→ Abd: <b>Tender ut (in concealed)</b> / <b>FL ⊕ amenorrhea</b> <b>hematoma</b><br>→ PV & speculum: <b>FL ⊕ amenorrhea</b> <b>hematoma</b><br><b>should US come first</b> → <b>Contraindicated till exclusion of PL PRV</b> | Always vag bleeding<br><b>Painless causeless recurrent bleeding</b><br>Type of patient ± anemia ± Shock <b>Chronic</b><br>No ut tenderness / FL ⊕ amenorrhea / malpresentations (higher possibility)<br><b>local examination</b> → TBS through vagina |
| <b>Complications</b>         | HELLP / DIC / Atony / Sheehan syndrome                                                                                                                                                                                                                                                                                                | Placenta Accreta / Increta / Percreta ← <b>Deep invasion</b>                                                                                                                                                                                          |
| <b>Investigations</b>        | Maternal : US / CBC / LFTs / KFTs / Inv for DIC / HELLP<br>Fetal : Assessment of fetal wellbeing (DFMC / NST / BPP / Doppler)                                                                                                                                                                                                         |                                                                                                                                                                                                                                                       |

**Management of APHge:**

Termination if : \* Reached maturity

OR \* Labor pains

OR \* Maternal or fetal complication

Otherwise **Conservative** until one of 3 factors above are reached

**Termination**

**VD**

In Accidental hge  
(unless CI)

**LSCS**

In PL PRV  
(unless Lateralis)

\* In case of abnormal adhesions of placenta, with no plane of cleavage (Increta / Percreta) → **ttt** : Cesarean hysterectomy (= USCS followed by hysterectomy) as any attempt to separate the placenta increta / percreta will result in severe bleeding

**NB:** \*Resuscitation in shock (if present)

\* **ttt of complications if present ie DIC / HELLP / Atony**

\* placenta accreta = brevia → CS hysterectomy

\* placenta brevia ≠ aubrea

\* prepare blood units

\* give Steroids to lung maturation in case of suspected preterm.

**NB: Placental migration : < 24 weeks**

Lower edge of placenta may be seen near int os, but é formation of LUS, placenta migrates upward to its normal position, away from internal os & the condition resolves in > 90% of cases

# Intrapartum Hge = Obstetric Trauma

**Rupture uterus** obstructed labor

**Risk F :** MG / scarred ut / oxytocin, PG / Instruments

**CI picture :** (S) → Pain relieve

(S) → Abd : Fetal parts easily felt

FHS inaudible + hematuria (rupture bladder)

PV : head recede upward

**Management :**

\* Resuscitation

\* **Laparotomy** → Repair or Subtotal hysterectomy

delivery by CS abcs → cesarean hysterectomy (LSCS) → PL aubrea

midline Total → with ex subtotal → without ex

|               | <b>Cervical tears</b>                                                | <b>Perineal tears</b>                                                                                                                                                                          |
|---------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Due to</b> | Improper management of 1 <sup>st</sup> stage at dilatation           | Improper management of 2 <sup>nd</sup> stage                                                                                                                                                   |
| <b>Risk F</b> | Echbolics / instruments / PPT labor / manual dilatation / macrosomia | Omitting episiotomy / malpresentations / macrosomia                                                                                                                                            |
| <b>Types</b>  | Lat / ant lip /<br>No post lip                                       | 1 <sup>st</sup> : skin<br>2 <sup>nd</sup> : skin +<br>3 <sup>rd</sup> : 2 <sup>nd</sup> +<br>4 <sup>th</sup> : 3 <sup>rd</sup> +<br>superficial perineal ms<br>anal sphincter<br>rectal mucosa |
| <b>ttt</b>    | Prevention by proper management of labor<br>Repair ± replacement     | Repaired in layers + post operative care                                                                                                                                                       |

→ post op: infx, prolapsed, constipation.



\***Uterine involution** → after birth lowered to umbilicus  
 → after week at SP → spine Ut

Normal postpartum blood < 500 cc in VD  
 < 1000 cc in CS

## Complications of 3<sup>rd</sup> stage PL delivery

### I) PPHge (bleeding after delivery)

1<sup>st</sup> 24hrs

\* Bleeding affects general condition of pts

2<sup>nd</sup> > 24hrs till end of puerperium due to infection

Def : excessive than normal

1<sup>st</sup> PPHge → from delivery to 24 hrs

Def : bleeding > 500cc in VD / > 1000cc in CS

Inc : leading cause of maternal mortality in Egypt

Et :

#### Placental site

\* **Atony** (overdistension, prolonged labor, eclampsia, anemia, ...) (most common)

\* **Retained placenta (remnants)** (3<sup>rd</sup> common)

\* **DIC** or systemic disorders

\* **Ut inversion** (may not present é bleeding but pain)

**Extraplacental site** ⇒ management is repair injury

\* **Traumatic** (Cx, perineal, vag laceration due to instrumental or macrosomia) (2<sup>nd</sup> common)

#### Cl.picture :

S : Gen : anemia / shock / **cephalopelvic disproportion** → pulse (No palp.)

Abd : lax ut (atony) / firm (trauma) / rising (bleeding) / inverted cup (inversion)

PV : dark blood clots (atony) / fresh bleeding (trauma) / lacerations / retained placenta / inverted ut

**Complications** : Death / Sheehan's. + Renal Failure

Inv : CBC (inv for complications)

Ttt :

**A) PREVENTION** : proper use of oxytocin, instrument use, cure PL + vag

**B) Actual** : 1) Ecbolics + massage

2) Exploration of genital tract for trauma

3) Intrauterine Bakry balloon (placed vag)

4) Bilateral uterine / IIA ligation

5) B-Lynch suture

6) Subtotal hysterectomy

**NB** : Resuscitation while doing these measures

\* **DIC** → watery Bleeding No Clots

\* **Atony** → pulse (No palp.)

\* **Retained placenta** → 30 min

\* **Trauma** → 30 min

\* **Atony** → 30 min

\* **Retained placenta** → 30 min

\* **Trauma** → 30 min

\* **Atony** → 30 min

\* **Retained placenta** → 30 min

\* **Trauma** → 30 min

\* **Atony** → 30 min

### II) Retained placenta

Def : placenta didn't deliver within 30 min of fetal delivery

Et : Retained separated (atony / rupture ut / constriction ring (rare))

Retained non separated (PAS)

Ttt : 1) Ecbolics + Brandt - Andrew's

2) Manual separation

3) If only parts = D&C by ovum forceps

4) ttt of cause (if present)

**NB** : in PAS

\* **Accreta** (80%) : there is usually a plane of cleavage so separation of placenta occurs

(take care if increta / percreta)

\* **Increta / Percreta** : planned cesarean

hysterectomy ie classical CS, removal of fetus, closure of wound & proceeding to TAH with ovarian preservation éout any attempt to separate placenta (to avoid severe bleeding)

\* **Avulsion cord** → pull when PL not separated

### III) Uterine inversion

Def : Normally ut prolapsed to it's place

Et : Ut inversion → top reach int OS

traction on placenta while uterus is lax

Cl.picture :

Gen : neurogenic shock stretching

Abd : absent fundus

PV : inverted cup (decidua seen)

Ttt :

\* **Avoid**

\* **Actual** : Manual reposition in relaxation

Or Hydrostatic pressure reduction

\* **Can occur in CS + PV**

### IV) Shock (Hgc / Neurogenic / Septic)

Hgc shock

Def : state of circulatory impairment

Cl.picture :

1) Amount of blood loss

(< 15%, 15-30%, 30-40%, > 40%)

2) HR (< 100, 100-120, 120-140, > 140)

3) BP (N or ↓)

4) Urine output (> 30ml/hr, 15-30, 5-15, < 5ml/hr)

Ttt : Airway (maintained patent)

Breathing (oxygenation)

Circulation (adrenaline / perfusion)

**Replacement** :

\* Whole blood

\* Packed RBCs

\* Fresh Frozen Plasma (all clotting factors)

\* Cryoprecipitate (factors VIII, XIII, Fibrinogen)

\* Platelets

**Septic shock**

Ttt : Broad spectrum antibiotics + ttt of cause

### V) DIC

Def :

consumptive coagulopathy / hypofibrinogenemia

Et :

\* Massive blood loss

\* Massive transfusion

\* Concealed accidental Hge

\* HELLP

\* Amniotic fluid embolism

\* **IUFD** → ++ extrinsic pathway (thromboplastin release)

**Cl.picture** : of cause / bleeding from venipuncture

Inv : ↓ fibrinogen < 100 mg/dl

++ FDPs (++ D-dimer)

++ PT, PTT

Ttt :

Of cause

Replacement (FFP / Cryoppt)

Never ×× Heparin → already has bleed

# Female bony Pelvis

# Anatomy of Fetal skull

# Terminologies

## - Inlet

oval of true pelvis

Anatomical Transverse Diameter from mid of iliopectineal line (wider) 13 cm

Obstetric Transverse Diameter from iliopectineal eminence (narrower) < 13 cm

Diagonal conjugate 12.5 cm

2 fingers and the thumb on lower border of symphysis pubis and by 2 finger should reach to promontory if reach promontory short diagonal

## - Cavity

Circular

Plane of least pelvic dimensions

Bispinnous Diameter 10.5 cm

ischial spine

## - Outlet

Diamond of true pelvis

Post → Ant

Tip of sacrum

lower border of symphysis pubis

10 cm 7 cm (without baby)

Tip of sacrum (in labor)

not sagittal 7-10 cm

Transverse line

Ant Triangle

6-7 cm

Suprapubic

Post sagittal Triangle (7-10 cm)

Ant sagittal Triangle (6-7 cm)

Outlet segment

\*Can't assessed clinically except Diagonal conjugate diameter

via PV + clinical pelvis measure for outlet

A/P Diameter 11 cm

13 cm

12 cm

oblique Rt > Lt

between sacral Joint to iliopectineal eminence

cause 1 diameter left sigmoid & 11 diameter

Transverse btw center of greater sciatic foramen

center of lesser sciatic foramen

Plane of greatest pelvic dimensions

A/P Diameter 12.5 cm

between inlet & outlet

bounded by sacral center S2-S5

Ant bounded by center of symphysis

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

ischial spine

## Engaging diameters

## A / P engaging diameters:

(In cephalic Brow) MV 13.5 cm

Midway b flexion & extension

\* face from the chin to the brow line → Cephaloflexion → fully flexed

\* below coronal suture → cephalovertebral → fully flexed

Depends on degree of flexion

SOF 10 cm

SOB 9.5 cm

Full flexion (in Vertex presentation)

Full extension (in Face presentation)

cephalic presentation

Transverse engaging diameters:

BPD (largest) = 9.5 cm

Supra parietal / Sub parietal = 9 cm

(in asynclitism)

BTD = 8 cm

BMD = 7.5 cm

Engagement: passage of widest transverse diameter of the presenting part (eg : BPD) through plane of pelvic inlet.

(Rule of 5: 2/5 = engagement)

Lie: (longitudinal / transverse)

Attitude: fetal parts (flexed / extended)

Presentation: 1<sup>st</sup> felt on PV

Cephalic 96%

Vertex 95%

Face 0.5%

Brow 0.1%

Breech 3.5%

Shoulder 0.5%

occiput

chin (mentum)

no engagement

sacrum

scapula

Denominator:

Bony landmark of the presenting part

Asynclitism (tilt): (eg: ant asynclitism = post parietal bone presentation, when sagittal suture is toward ant.)

Position:

Relation of fetal denominator to the right / left & ant / post of the mother

Station:

0 when occiput is at the level of ischial spines in vertex presentation = Engagement

Effacement: LUS is taken in UUS

Leopold manoeuver:

(F.level / F.grip / UG / 1<sup>st</sup> & 2<sup>nd</sup> PG)

Naegle's formula:

LMP + 7 days + 9 months → EDD

Obstetric code:

\* 4 digit code

GA → 1<sup>st</sup> Date near expected 40 - (rest of weeks)

it Date near LMP count

it Date near LMP count

it Date near LMP count

it Date near LMP count

it Date near LMP count

it Date near LMP count

it Date near LMP count

it Date near LMP count

it Date near LMP count

it Date near LMP count

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>* false labor phase</b> → Not regular → No changes<br/> → Just help in placental circulation<br/> → Not referred to back No of dilatation</p> <p>Left Side (RT oblique)<br/> + ant Back<br/> + ant Back</p> <p>regular uterine contraction<br/> lead to cervical effacement, dilatation and baby delivery</p> <p>True labor pain → regular<br/> referred to back<br/> α changes<br/> No NICU / No Soundice<br/> No Breast feeding / No fever post-partum</p> <p>called Normal after 40 days.</p> <p><b>Def:</b> passage of single / living / cephalic / vertex / term / through birth canal / éout interference / é no complications (maternal &amp; fetal) / éin 4 – 24 hrs</p> <p><b>Et (Theories):</b> ++PGs / ++ fetal cortisol / ++ ut distension / ++ PRG / ++ pl oxytocinase<br/> (1+5 → due to placental aging)</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                        |
| <h2 style="text-align: center;">Normal labor</h2>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                        |
| <p><b>Stages</b></p> <p>Start of uterine contraction and retraction (shorts) → to elongate and thinning U.S. (cervix) → taken up of cervix + thin</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p><b>1st stage</b></p> <p>Latent &lt; 4 cm<br/> Active &gt; 4 cm</p> <p><b>Cervical changes (effacement &amp; dilatation)</b></p>                                                                                                                                                                                                                                                                                                                                                                                      | <p><b>2nd stage</b></p> <p>10 cm to delivery</p> <p><b>(Fetal delivery)</b></p>                                                                                                                                                                                                                                               | <p><b>3rd stage</b></p> <p><b>(Placental delivery)</b></p>                                                                                                                                                                             |
| <p><b>Duration of active</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>12 - 18hrs in PG (primi) → should not exceed 24 hrs<br/> 6 - 8hrs in MG</p>                                                                                                                                                                                                                                                                                                                                                                                                                                          | <p>2hrs in PG without epi<br/> * 2 hrs in PG with epi<br/> * 1 hr in MG with epi</p>                                                                                                                                                                                                                                          | <p>30 min in both</p>                                                                                                                                                                                                                  |
| <p><b>* effacement before dilatation in primi</b><br/> * together in multi</p> <p><b>Mechanism</b></p> <p>* Induction by PG + mechanical assist dilatation by balloon<br/> * Augmentation by Pabal + oxytocin</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <p>Ut contractions (true labor pains) → Cx effacement &amp; dilatation</p> <p><b>Friedmann curve</b></p> <p>at zero station of pelvic cavity at ischial spine level.</p>                                                                                                                                                                                                                                                                                                                                                | <p>- Descent } may occur in late pregnancy<br/> - Engagement }<br/> - ↑ Flexion OF → SOF → SOB<br/> - Int rotation not rot of head → Direct occipito ant.<br/> - Extension } gradual<br/> - Restitution → 1st step<br/> - Ext. rotation of the body } same side<br/> - Expulsion } 2 forces → ut cont up levator ani down</p> | <p>- <b>Placental separation</b>, detected through :<br/> * Gush of blood<br/> * Elongation of cord<br/> * Suprapubic bulge<br/> - <b>Placental descent</b><br/> - <b>Placental expulsion:</b><br/> * Schultze * Duncan</p>            |
| <p><b>Aim</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <p>To get strong efficient (3 cont/ 10 min / each lasting 1 min / é intensity 40-60 mmHg) to cause dilatation of 1-2 cm/hr in PG Or 1.5 cm/hr in MG</p>                                                                                                                                                                                                                                                                                                                                                                 | <p>To allow extension after crowning to distend vulva by SOF (↓↓ perineal tears)</p>                                                                                                                                                                                                                                          | <p>To minimize bleeding (500cc) Acceptable</p>                                                                                                                                                                                         |
| <p><b>Through</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <p>↑↑ contractions by : AROM / oxytocin<br/> ↓↓ contractions by : stop oxytocin / rehydration / epidural</p>                                                                                                                                                                                                                                                                                                                                                                                                            | <p>Ritgen maneuver (perineal support)</p>                                                                                                                                                                                                                                                                                     | <p>do active management through use of <b>ecbolics</b> (eg <b>ergometrine/oxytocin</b>)</p>                                                                                                                                            |
| <p>head → hard &amp; tender Ballotment<br/> Bulbous → Soft, Not ballot</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <p>- H/O: medical / surgical / obstetrics <b>FPA/L</b> LMP, EDD, GA<br/> - Exam :<br/> → Gen : vital signs<br/> → Abd : Leopold maneuvers / FHS<br/> → PV : presentation / position / Cx dilatation / effacement / station / ROM ....<br/> - Nutrition ? IV fluids / Analgesics / Enema<br/> - Partogram : for FU progress of labor</p> <p><b>Partogram</b></p> <p>Action if not aligned do augmentation if was done → instrumentation + CS</p> <p>Normal progress<br/> ..... Delayed progress<br/> +++ Need action</p> | <p>- Lithotomy / sterilization / towing</p> <p>- Instruct her to bear down during contractions &amp; relax inbetween</p> <p>- Maintain flexed occiput &amp; support perineum (Ritgen maneuver)</p>                                                                                                                            | <p>- Wait for signs of separation</p> <p>- Brandt – Andrews maneuver } push fundus up } gently<br/> pull cord down</p> <p>- Explore placenta &amp; memb after their delivery for completion</p> <p>- Explore birth canal for tears</p> |
| <p><b>NB:</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <p>External <b>CTG ONLY</b> in high risk pregnancy (augmentation is a high risk)</p> <p>Labour HR &gt; 160 or &lt; 100 or &gt; 180 or &lt; 100 or &gt; 180 → external fetal monitoring → 2 probes (1st fundus pressure + 2nd HR (showing))</p> <p>Non stress test<br/> No labor, HRs after 20 min. No dec } Normal waiting</p>                                                                                                                                                                                          | <p><b>Episiotomy ONLY</b> if indicated</p> <p>vulva 5cm</p>                                                                                                                                                                                                                                                                   | <p>- 2hrs later observe for complications (4th stage)</p> <p>- Give Anti-D in Rh -ve</p>                                                                                                                                               |



# Abnormal labor

**Def :** labor lasting  $\leq 4$  hrs or  $> 24$  hrs due to abnormalities in passages (pelvis) / passenger ( fetus) / power ( ut. contractions)

**Types:**

## 1) Precipitate labor

**Def :**  $< 4$  hrs for 1<sup>st</sup>, 2<sup>nd</sup> & 3<sup>rd</sup> stages

**Et :** multipara / small fetus / roomy pelvis / strong contractions

**Comp :** \* Maternal: lacerations of Cx / P.sepsis / PPHge

**Ttt :** If seen before delivery : epidural to slow down progress / Perineal support in 2<sup>nd</sup> stage  
Explore birth canal for lacerations / antibiotics prophylaxis / neonatal exam for birth injury

## 2) Prolonged labor

**Def :** delay in progress  $\leq 1$  cm / hr in PG or  $\leq 1.5$  cm / hr in MG

"While arrest of labor : no progress at all ( in Cx changes or fetal descent ) for **1 hr in MG** or **2 hrs in PG** in the presence of strong efficient ut contractions whether in active 1<sup>st</sup> or 2<sup>nd</sup> stages"

**NB: Double this time if epidural is used**

**Et :** CPD  $\rightarrow$  pelvis narrow / large fetus  $\rightarrow$  measure by internal brachymetry  
Hypo / Hypertonic ut. Inertia  $\Rightarrow$  inefficient contr.

**Comp :** \* Maternal: exhaustion / PPHge / P.sepsis

**Ttt :** If CPD : CS  
If hypotonic : amniotomy / oxytocin augmentation  
If hypertonic : stop oxytocin / IV fluids / epidural

**NB: In 2<sup>nd</sup> stage arrest, assess whether it is due to exhaustion ( \* use instrumental delivery if engaged ) or obstruction ( \* do CS)**

## 3) Obstructed labor

**Def :** arrest of 2<sup>nd</sup> stage ( although presence of strong uterine contractions) due to CPD.

**Cl. picture :** \* Gen : dehydration / exhaustion

\* Abd : pathological retraction ring ( Bandl's ring ) DD from contraction ring

| Pathological retraction ring ( Bandl's ring )                                                                                                                                                                                 | Constriction / contraction ring                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>* Between UUS &amp; LUS</li> <li>* Moves upward</li> <li>* Seen abdominal &amp; felt vag</li> <li>* + Fetal distress / severe maternal exhaustion</li> <li>* Relieved by CS</li> </ul> | <ul style="list-style-type: none"> <li>* <u>Spasm</u> of circular smooth ms fibers</li> <li>* Any site</li> <li>* Felt vag only</li> <li>* No maternal or fetal distress</li> <li>* Ms relaxation / anesthesia</li> </ul> |

**Comp :** \* Maternal: rupture ut / necrotic VVF / PPHge / P. sepsis

**Ttt:** delivery by CS ( NO instrumental as head is NOT engaged)

**NB : PG responds to obstruction by atony while MG responds to obstruction by rupture uterus**



#### 4) Cx dystocia

**Def :** rigid Cx that doesn't dilate or efface in the presence of efficient ut .contractions

**Et :** spasm / scarred Cx

**Ttt:** spasmolytic / CS ( to avoid annular detachment of Cx or rupture ut )

#### 5) Shoulder dystocia

**Def :** Failure of delivery of shoulder after head delivery due to impaction of anterior shoulder at the symphysis pubis

**Et :** fetal macrosomia

**Cl.picture:** Turtle sign

**ttt:** → Prevention by CS when indicated

→ Actual :

\* Mc Roberts ( hyperflexion of maternal thigh) ± suprapubic pressure

\* Wood Cork Screw      \* Post. Shoulder delivery

\* Symphysiotomy      \* Zavenilli Maneuver

-No fetal pressure

### CPD → cephalopelvic disproportion

**Def :** one or more of the pelvic diameters is decreased so as to interfere é normal vag delivery

**Et :** diseases or trauma to spine , femur or pelvic bones of the mother

**Cl.picture :**

\* H/O

\* Exam → Gen: for gait / height

→ Abd : pelvimetry

→ PV : Internal pelvimetry & CPD tests:

←1) Pinard : NO PV

←2) Muller-Kerr : é PV

when baby + primi  
Not engaged

**Ttt:** → If no CPD : allow VD

→ Moderate CPD ( 1<sup>st</sup> degree) : trial of labor

for undetermined factors ( moulding of head / yielding of pelvis / strong ut cont. )

→ Severe CPD ( 2<sup>nd</sup> degree ): CS

↳ head overriding symphysis pubis

### Contracted outlet

**Thom's Dictum :** the sum of the bituberous diameter & the posterior sagittal diameters of the outlet must exceed **15 cm** to allow an average head to pass through the pelvic outlet provided that the bituberous diameter is **> 8.0 cm**

# OVD ( operative Vaginal delivery )

|                            |  <b>Forceps</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  <b>Ventouse</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Start                      | By Chamberlen family<br>( 1 <sup>st</sup> to use forceps on <u>living</u> fetus ) in year 1560-1730                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | By Malmstrom in 1954                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Benefits / Characteristics | <ul style="list-style-type: none"> <li>* In modern obstetric , only <b>low</b> ( <b>outlet</b> ) forceps is used <b>for extraction only</b></li> <li>* <b>Kielland long forceps</b> is rarely used for rotation &amp; extraction in OP</li> <li>* <b>in fetal distress</b> to shorten 2<sup>nd</sup> stage</li> <li>* In <b>Face presentation</b> &amp; <b>PTL</b> ( <i>prolapsed baby head</i> )</li> <li>* Aftercoming head of Breech ( Piper's forceps )</li> <li>* Dead fetus</li> </ul> <p><i>*Need space *fully dilated *Station 0/+1 *CH cont +ve *membr rupture</i></p> | <ul style="list-style-type: none"> <li>* For rotation &amp; extraction in OA or OP positions</li> <li>* Less encroachment on maternal pelvic space <i>*No space needed</i></li> <li>* Time consuming<br/>( need 20minutes to induce -ve pressure)</li> <li>* <b>not used in fetal distress</b></li> <li>* CI in <b>face</b> or <b>preterm</b> ( <i>fracture vaginal blood vessel</i> ) ( only used in <b>vertex</b> presentation )</li> <li>* Only used on <b>living</b> fetus as -ve suction &amp; scalp edema formation ie chignon (which is the mechanism of action of ventouse) needs living fetus to be formed</li> </ul> |
| Pre-requisites             | <p><i>= 1/5 and less palpate at abd</i></p> <p>Fully dilated Cx / Engaged head ( ie station <u>0</u> at least ) / NO CPD / Membranes ruptured / Presence of uterine contractions / Empty bladder &amp; rectum / Antiseptic techniques / Anesthesia</p>                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Complications              | <p><b>Maternal ( mainly ) :</b></p> <ul style="list-style-type: none"> <li>- lacerations &amp; tears<br/>( perineal / vaginal / cervical &amp; even rupture uterus )</li> <li>- PPHge ( traumatic or atonic )</li> </ul> <p><b>Fetal :</b></p> <ul style="list-style-type: none"> <li>- if wrong application : head compression , skull fracture &amp; ICHge</li> <li>- cephalhematoma ( bone fracture or fissure )</li> <li>- facial nerve injury</li> </ul>                                                                                                                   | <p><b>Fetal ( mainly ) :</b></p> <ul style="list-style-type: none"> <li>- cephalhematoma</li> <li>- scalp lacerations</li> <li>- ICHge if excessive -ve pressure in preterm fetus with fragile BVs</li> </ul> <p><b>Maternal :</b></p> <ul style="list-style-type: none"> <li>- If wrong application<br/>( includes cervical tissue in the ventouse cup )<br/>→ lacerations</li> </ul>                                                                                                                                                                                                                                         |

Normal position → left occipito Ant fully flexed at ant side  
 \* if occipito post at Rt oblique  
 Not left Side Ant  
 Not Cephalo Vertex

# Malposition & Malpresentations

|                   | Rt Occipito - posterior * all common in nulli                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Face Malpresentation                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Def</b>        | Longitudinal lie in which head is flexed & occiput posterior (occiput is denominator) {It's a malposition & not a malpresentation}                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Longitudinal lie in which head is fully extended (mentum is denominator) <i>Left mento Ant</i>                                                                                                                                                                                                                                                                                                                                                        |
| <b>Inc</b>        | 20% at time of labor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 1/500                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Position</b>   | ROP : most common occupying wider Right oblique diameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | LMA : most common as it results from extension of ROP                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Et</b>         | Gen: CPD / Fetal anomalies / MFG / Low placenta / twins<br>Specific: Android / Anthropoid pelvis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Gen: CPD / Pendulous abdomen / ...<br>Specific: Anencephaly → No head bones → termination of pregnancy                                                                                                                                                                                                                                                                                                                                                |
| <b>Mechanism</b>  | <p>Descent → engage</p> <p>* correction of deflexion 90% → long ant rotation → DOA &amp; delivery by <b>extension</b> as OA</p> <p>* mild deflexion 1% → ant Rot 1/8 : (deep transverse arrest) <b>obstructed</b></p> <p>* moderate deflexion 3% → NO rotation : (persistent oblique OP) <b>obstructed</b></p> <p>* severe deflexion 6% → post Rot 1/8 : DOP (face to pubis) &amp; delivery by <b>flexion</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <p>Descent → engagement → extension → int Rot → delivery by flexion</p> <p>* MA : ant rotation → DMA &amp; delivery by <b>flexion</b></p> <p>mentopost</p> <p>* MP → 2/3 long ant rotation to MA &amp; delivery by <b>flexion</b> → Factors +ve</p> <p>→ 1/3 no rotation or post rotation to DMP : <b>obstructed</b> → CS</p> <p>Descent → engagement → Ant int Rot → long → OMA → flexion</p> <p>→ Short → OPE → transverse → obstructed oblique</p> |
| <b>Comp.</b>      | Maternal : Prolonged labor / PROM / PPHge / Puerperal sepsis<br>Fetal : Distress / Asphyxia / Birth injuries / Instrumental delivery / Comp of associated anomalies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Management</b> | <p><b>Pregnancy :</b> if CVD, membrane</p> <p>Leopold : as OA : FL (same) / FG (buttocks) / UG (back Rt) / 1<sup>st</sup> Pelvic Grip (done : delayed engagement) / 2<sup>nd</sup> Pelvic Grip (not done)</p> <p>Auscultation : FHS below umbilicus / US + Ut contr</p> <p><b>Labor:</b></p> <p>PV : occiput</p> <p>1<sup>st</sup> stage : watchful expectancy for <b>factors that favor long anterior rotation</b> :<br/>           (Roomy pelvis (no CPD) / Good pelvic floor muscles / Strong uterine contractions / Adequate liquor)</p> <p>*90%: as OA (assess factors for long ant rotation) <i>Soft by extens 10cm</i></p> <p>*6% : Face to pubis (distending diameter <b>OF 11.5 cm</b>) → do episiotomy</p> <p>*4% → Kielland for rotation &amp; extraction <i>ant Rot forces</i> → <b>flexion delivery</b></p> <p>→ Ventouse for rotation &amp; extraction <i>If no CPD is</i> → instrumental</p> <p>OR → Safer CS (transverse + oblique)</p> <p>PV : chin (Tumefaction) <i>edema in soft tissue due to contraction</i></p> <p>*MA : delayed engagement + episiotomy (SMV 11.5 cm) <i>10 cm</i></p> <p>*MP → 2/3 factors for long ant rotation (as MA)</p> <p>→ 1/3 → Forceps delivery (not done)</p> <p>→ NEVER ventouse (CI) <i>face v</i></p> <p>OR → Safer CS</p> <p><i>No same line w/ cheek bone</i> <i>same line sacrum and ischial tuberosity</i></p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

## Brow malpresentation

|                     |                                                                                                        |              |        |             |                |
|---------------------|--------------------------------------------------------------------------------------------------------|--------------|--------|-------------|----------------|
| <b>Def:</b>         | Head is midway between flexion & extension                                                             | <b>Inc :</b> | 1/2000 | <b>Et :</b> | general causes |
| <b>Mechanism :</b>  | Transient brow : delivery as OP or MA<br>Persistent brow (MV = 13.5 cm) : <b>Obstructed</b>            |              |        |             |                |
| <b>Management :</b> | Transient brow : manage accordingly → flexed → occipite<br>Persistent brow : <b>CS</b> → extend → face |              |        |             |                |

96% cephalic

① Face ② Brow

## ② Breech presentation (malpresentation)

**Def:** It is a longitudinal lie in which **buttocks** with feet (complete) / buttocks only (frank) / feet (footling) / knee are the presenting part.

**Incidence:** 3.5% at full term <sup>remount group</sup> / 25% at 28 wks <sup>Need lax soft abd → mc in multi strong muscle wall of abd</sup>

**Etiology:** **General:** contracted pelvis / ut septum / fibroid / pl. previa / MFG

**Specific:** **Hydrocephalus** (in full term) , **Prematurity** <sup>mc in primi</sup>

**Position:** LSA = Left Sacrum anterior

**Types:** Complete (MG)  
Frank (PG)  
Footling / knee ...

**Mechanism:** <sup>saeroanterior more common left</sup> <sup>posterior diameter</sup> <sup>when reach pelvic floor muscle</sup>

for **Buttocks** (Descent / Eng (BTB 9.5cm) / Int rotation / ant buttock hinge below SP, post buttock deliver 1<sup>st</sup> by **Lat Flexion of spine**)

**Shoulders** (Descent / Eng (BAD 12 cm) / Int rotation / post shoulder deliver 1<sup>st</sup> by **Lat Flexion of spine**)

**After coming head** (Descent / Eng (BPD 9.5) / Int rotation (opposite direction as it enters pelvis in opposite axis) / delivery by **Flexion**)

### Complications:

**Maternal:** 4 Ps (Prolonged labor / PROM / PPHge / Puerperal sepsis)

**Fetal:**

- Retained after coming head <sup>most serious</sup>
- Post. rotation of the head <sup>do</sup> → Prague manoeuvre <sup>low weight of baby</sup>
- Extension of arm <sup>do</sup> → Lövset manoeuvre
- Fetal birth injuries (nerves: Erb's palsy / bones: hip dislocation / viscera: rupture spleen, rupture liver, rupture anal sphincter & hymen defloration)
- Fetal distress / Sudden compression & decompression

**Diagnosis:** **During pregnancy** → Leopold maneuver (FL: same as amenorrhea period / FG: head / UG / PG: buttocks) <sup>back to left side</sup>

FHS (above umbilicus)

US

**During labor** (+ PV) (tip of sacrum + ischial tuberosities at same plane)

### Management:

**During pregnancy:** ECV (60% success), at 36 wks if not CI <sup>for vaginal delivery</sup>

**During labor:** (Assess for unpredictable hazards sp in PG)

**Side effects:**

- 1) ROM / cord prolapse
- 2) Pl. separation
- 3) Loops of cord around fetal neck
- 4) Fetal distress
- 5) ++ labor <sup>involunt</sup>

→ VD: **\*Assisted breech delivery:** spontaneous delivery of buttocks & shoulders, BUT Assisted delivery of head

Burns-Marshall

Mauriceau-Smellie-Veit ± Kristiller's manoeuvre

Piper's forceps <sup>on parietal</sup>

(Leave baby hanging by its weight) <sup>then pull with flexion</sup> (Jaw flexion shoulder traction) (supra pubic pressure on head by assistant)

**\*Breech extraction ONLY** done in: 2<sup>nd</sup> twin if breech / fetal distress & fully dilated Cx and NO CPD → to Cx Not closed within 30 min. <sup>flexion of knee/shoulder to deliver</sup>

→ CS 80% primi breech to prevent retained head

Indications of CS: 1) Extended neck / 2) Twins 1<sup>st</sup> breech (locked twins) / 3) Preterm / 4) PG (80%) ??

5) weight < 2.5 kg, > 3.5 kg / 6) Breech presentation other than complete or frank / 7) Other indications for CS



# Shoulder presentation → Transverse lie

**Def :** Transverse Lie é scapula as denominator ( <sup>sauro >>> sauro</sup> ant or post )

**Incidence:** 0.5%

**Etiology:** → **General :** CPD / Septate ut / Pl. previa  
→ **Specific** Pendulous abdomen in multipara

**Position:** → LSA  
→ RSA

**Mechanism :** NO mechanism (Obstructed labor)

**Complications:** → **Maternal** → 4 Ps  
→ **Fetal** + neglected shoulder

**Diagnosis :** → **During pregnancy** → Leopold manoeuvre ( **FL** → less than period of amenorrhea / **FG** → empty )  
→ **UG** → head on one side & buttocks on the other side / 1<sup>st</sup> PG → empty )  
→ **FHS** → at level of umbilicus at the head side  
→ **US**

→ **During labor:** + **PV** → Grid – iron (ribs)

**Management:** → **During pregnancy:** ECV till 1<sup>st</sup> stage of labor *easier 90° Not 180° like bree*  
→ **During labor:** **CS** *int pelvic version*

**NB :** IPV and breech extraction is **ONLY** done for **2<sup>nd</sup>** twin ( if transverse )

**NB :** neglected shoulder : Arm prolapse with ROM for long time & IUFD , delivery by CS ( **mostly upper segment** )  
for maternal safety to prevent rupture uterus

## ← Cord presentation & Cord prolapse →

*Not exposed to ext temp*  
é intact memb.

*rupture memb*  
é ROM

*expose to ext temp*  
vessel vasoconstrict  
Fetal distress  
Obstetric emergency

**Def :** cord is below presenting part either é intact membranes ( presentation ) or é rupture membranes ( prolapse )

**Et :** general : → **Maternal**  
→ **Fetal** ( specific ) : malpresentations as shoulder / incomplete breech / footling / ...

**Diagnosis :** **PV** : mind **PULSATING** or **NOT**

**Management :** → **IF PULSATING :** **urgent CS** , while transferring her to OR: reposit the cord , give O<sub>2</sub> , knee chest position or trendelenburg position / **IF fully dilated Cx:** → forceps in cephalic engaged  
→ **IF NON PULSATING :** allow **VD** ( not an emergency )  
*Non pulsating cord*  
*No ventral valve time*

*Dead baby*

## Complex presentation

**Def :** **Arm** beside head or buttocks in **2<sup>nd</sup>** stage

**Management :** reposit the arm & proceed é VD

## Unstable Lie

**Def :** Fetus continuously changes its position & / or presentation after 34 weeks GA

**Management :** stabilized induction ie induction of labor while it is in a cephalic presentation after 36 wks

Diamniotic → 2 diff sac

More amn more complications than Diamn

Dichorionic → 2 placenta

# Multi fetal gestation (Twins in 97% of cases, Triplets in 1-2%)

**Definition:** Simultaneous presence of 2 or more fetuses in the uterus

**Inc:** DZT 1-2% > MZT 1/250

**ET:** MZT (1 sperm + 1 ovum) then division → identical

cleavage in MZT

→ If < 3 days → Dichorionic Diamniotic 30%

→ If 4-8 days (chorion formed) → Monochorionic Diamniotic 65%

→ If 8-12 days (ch & amnion formed) → Monoch. Monoam. 5%

→ If > 12 days (parts formed) → Conjoined (rare) → 2 لارجين → complication with mono

**MOST SERIOUS**



DZT (2 sperms + 2 ova) = induction of ovulation → Not identical

**Cl. picture:** S: large sized abdomen / ++ S of pregnancy (sever NIV)

S: General: ++ anemia / PIH / HEG / GD / hypotension < 20 wks

Abdominal: Leopold maneuvers (FL / FG / UG / 1<sup>st</sup> Pelvic)

PV: presenting part small in comparison to large abdomen

FL ↑ than amenorrheal  
→ less than expected in contrast to abd size - more than one mole

FHS: galloping sign → 2 high intensity 2 diff sites

**Inv:** US

**Mechanism:** Depends on the presentation of 1<sup>st</sup> & 2<sup>nd</sup> fetuses

**Complications:**

**Maternal:** 4 Ps + ↑↑ rate of medical disorders (hyperemesis / HTN / anemia / GD / ...) + pressure symptoms

**Fetal:** 1) vanishing twins / fetus compressus / fetus papyraceous → 1 died and aborted

2) MZT → MC, MA & tttt: discordant twins (shared placenta)

ttt: laser ablation of anastomotic vessels

One fetus LGA / polyhydramnios / polycythemia

Other fetus SGA / oligohydramnios / anemic

Conjoined twins (due to delayed cleavage) > 12 days

3) locked twins, if we allow VD when 1<sup>st</sup> fetus is breech (which should not be done)

4) death of one fetus: 1<sup>st</sup> trimester (early): Little risk / 3<sup>rd</sup> trimester (late): ++ DIC

Depend on GA the management

5) PTL (COMMONEST complication) & prematurity complications

Give heparin prevention

**Management:** During pregnancy: more frequent ANC visits due to more ++ of medical disorders during pregnancy

During labor: CS: if 1) other indications of CS

3) monoamniotic twins or conjoined twins

VD: if 1<sup>st</sup> fetus is cephalic & no other indications of CS

2) ≥ 2 fetuses

4) 1<sup>st</sup> fetus is non cephalic

Delivery of 2<sup>nd</sup> twin

If cephalic (most common)

ROM &

Allow VD spontaneous

if breech

ROM &

Do breech extraction

if transverse

ROM &

Do IPV & breech extraction

Guard against Atonic postpartum hge by prophylactic ecbolics

نقص سائل داء الجنين PV !!

# Cesarean Section

**Def :** Delivery of a viable fetus through an abdominal & ut incisions.

**Types of CS :**

- ↳ **LSCS** → transverse incision (by default)
- ↳ **Vertical incision** (in certain situations)
- ↳ **USCS** (Classical CS) usually in PAS

## Indications:

↳ **Maternal :** CPD / previous CS (upper 1)

↳ **Fetal :** Malpresentations / fetal distress

## Techniques:

|                | LSCS                                                                                                        | USCS                                                                                                        |
|----------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Uses           | Usually done (placenta previa)                                                                              | In placenta accreta                                                                                         |
| Inc of rupture | 0.2 – 0.9 %                                                                                                 | ×10 times ( 2-9 % )                                                                                         |
| Scar           | Formed of 2 ms layers<br>↳ less Hge / better coaptation / less hematoma<br>↳ better healing ( strong scar ) | Formed of 3 ms layers<br>↳ more Hge / less coaptation / more hematoma<br>↳ worse in healing ( weaker scar ) |
| Peritoneum     | Better peritonization & less adhesion formation                                                             | Visceral peritoneum is adherent<br>↳ more adhesions later                                                   |

## Complications of CS :

↳ **Intraoperative :**

- \* Anesthesia complications
- \* Injury to bladder/ intestine / BVs

↳ **Early post operative:**

- \* Reactionary Hge
- \* Ureteric injury symptoms / fistula

↳ **Late post operative :**

- \* Wound infection → we put drainage in SQ → drain fat → bcz lower for bacterial growth
- \* Paralytic ileus , acute gastric dilatation → higher in 6 weeks
- \* Thromboembolic complications → walking early
- \* Adhesions & subsequent tubal & peritoneal factors of infertility
- \* **Placenta accreta if implanted on the scar site** → ↑ risk

**NB : VBAC ( Vaginal Birth After CS ) or TOLAC ( Trial Of Labor After CS )**

## Prerequisites :

- Only one previous LSCS
- Never after USCS (classical CS), hysterotomy or myomectomy scars
- No current indication for CS

## Complications of VBAC :

“ Previous normal VD followed by CS improves the chance of a safe and successful VBAC ”

# Episiotomy

**Definition :** an incision in post vaginal wall , perineum & skin done during vaginal delivery to widen the vulval introitus for the fetus

## Indications:

**Maternal :**

- ↳ rigid perineum
- ↳ instrumental delivery

**Fetal :**

- ↳ macrosomia
- ↳ malpresentations or malposition
- ↳ prematurity ( to avoid sudden compression & decompression of fetal head )

**Timing :** Just before crowning

**Types :**

|         | Median                                                                                                                  | Mediolateral                                                                                                           |
|---------|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Benefit | More anatomical<br>More cosmetic<br>Less dyspareunia<br>Less pain<br>Less blood loss<br>Easier repair<br>Better healing | No extention to anal sphincter & rectum so avoid damage of anal sphincter<br>( ONLY advantage over median episiotomy ) |

## Complications :

- extension to anal sphincter in median type
- hematoma → Infection
- later dyspareunia

# Analgesia & Anesthesia

## Anesthesia in labor

**Spinal is anesthesia of choice for CS : in subarachnoid space** ( hypotension & headache , + IV preload is needed )

## Epidural :

( hypotension , + IV preload is needed )

**General :** IV anesthetics as thiopental Na (ketalar) , in addition to inhalation gas drugs as N<sub>2</sub>O & O<sub>2</sub> ( affect fetus & mother )

## Analgesia in labor

### I ) Pharmacological

#### General

**1) Narcotics:**

- \* Pethidine × 10
- \* Morphine × 5
- \* Butorphanol × 5

Side effect: Neonatal RDS if given < 2hrs before delivery

Antidote : naloxone ( Narcan )

#### 2) Non- Narcotics :

- \* Benzodiazepines: diazepam ( valium )
- \* Phenothiazine derivatives

#### 3) Inhalation :

- \* N<sub>2</sub>O + O<sub>2</sub> → 50:50 ( laughing gas )
- \* Trilene (obsolete due to its toxic metabolites)

#### Local

**1) Epidural :** used all through labor, ie: intrapartum & postpartum

Side effects :

- \* block motor too ( not just sensory )
- \* loss of urge of straining
- \* accidental puncture of dura : headache

#### 2) Local infiltration anesthesia ( é lidocaine )

Most commonly used ( for episiotomy or tears )

#### 3) Pudendal nerve block

At level of ischial spine , injected through the vagina

#### 4) Paracervical block

- \* Injected on either side of the cervix through the lateral fornices
- \* Side effect : fetal bradycardia ( + rarely used )

### II ) Non-Pharmacological

- 1) ANC classes ( how to relax / breathing exercises / abdominal & pelvic floor ms exercises )
- 2) TENS ( Gate theory of pain )
- 3) Acupuncture ( Gate theory of pain )
- 4) Water birth

\* FHR  $\Rightarrow$  for living or Not  
Not for wellbeing

# Assessment of fetal wellbeing



## Antepartum

from viability till labor

Normal movement in 24hr  $\Rightarrow$  150  
Fetal move in 1st at 10 weeks, 2nd at 16 weeks, 3rd at 20 weeks

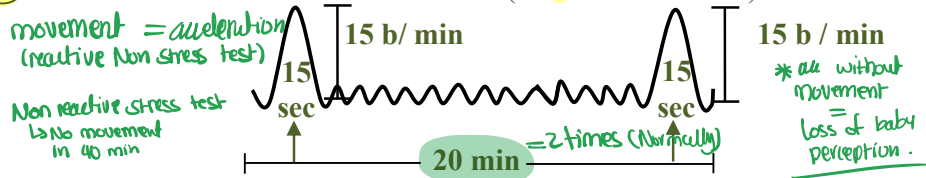
No movement for 1 hr  $\rightarrow$  maybe sleeping (eat, chadles, mastic, all kinds)

1) **DFMC**: 10 movements / 12 hrs

2) **NST**: fetal heart acceleration in relation to its movements

Non stress test = 2 probes = cardiac probe of fetus (for 20 min)

15 b/min acceleration for 15 sec (= reactive NST)



If non reassuring NST  $\rightarrow$  Repeat for another 20 min

If non reactive NST  $\rightarrow$  Do BPP

3) **BPP**: US to detect (movement / tone / breathing / AFI)

Each item  $\rightarrow$  0 if not present

2 if present good full

Total score = 8

If  $< 6/8$  do doppler

(NB: Modified BPP = NST + AFI)

4) **Doppler study**: for umbilical artery, MCA

If ++ resistance (low flow) placental insufficiency

If NO flow Alert sign

If reversed flow Action should be taken

Consider termination: IOL OR CS

NB: If high risk cases assessment of fetal wellbeing

DFMC  $\rightarrow$  done daily

NST / BPP  $\rightarrow$  done biweekly

Doppler  $\rightarrow$  done weekly

## Intrapartum

(in 1<sup>st</sup> & 2<sup>nd</sup> stages of labor)

1) **Passage of Meconium** (in cephalic presentation):

indicates fetal distress

2) **CTG**: relation of FHR to uterine contractions

FHR = 110 – 160 b/min

- If  $< 100$  bradycardia
  - If  $> 160$  tachycardia
- = fetal distress

2 probes  
(FHR + Ut cont)

CTG ONLY FOR HIGH RISK

- Loss of beat to beat variability = fetal acidosis

- Early deceleration = head compression

- Variable deceleration = cord compression (exclude cord prolapse)

- Late deceleration = fetal distress (sp if persistent late deceleration)

- Sinusoidal rhythm

3) **fetal scalp PH** PH = 7.25 – 7.35

If 7.2 – 7.25 mild acidosis

If  $< 7.2$  severe acidosis

## Management of Intrapartum distress (asphyxia)

\* tocolytics if hyperstimulation  
\* PV examination

\* Stop oxytocin / give IV fluids

\* mask O<sub>2</sub> / put pt in Lt lateral position

Persistent distress

Returns back to N

Immediate Termination

continue labor & close observation

Not fully dilated

fully dilated

CS  $< 9cm$

VD

Forceps in cephalic pr. No vacuum (distress)  
Breech extraction in breech pr.



Diff Complications → Diff management

preterm premature

premature

>36 before pain

Normally at 2nd stage at labor

PPROM vs PROM

**Definition :** ROM after fetal viability & before onset of labor

**Incidence :** 10%

**Etiology :** Idiopathic

- Infection (commonest) : GTI, UTI
- Cx incompetence
- Polyhydramnios → pl. abruption
- Local membrane defect / smoking

+ multi gestation  
+ malpresentation (shoulder / breech)



**Complications :**

Maternal : infection : Chorioamnionitis (most serious)

Fetal : Preterm labor within 24-48 hrs (commonest)

**Clinical picture :**

Symptoms : gush of fluid → maybe urine, excessive discharge, liquor

- Signs :
- General : fever (in case of infection)
  - Abdominal : FL < period of amenorrhea / tender uterus in chorioamnionitis

mark PV (under STRICT aseptic conditions) :

steril speculum for fluid pooling in posterior fornix

**Investigations :**

Confirm diagnosis : Speculum / Nitrazine paper / +ve fern / Amniosure

Detect complications (infection) : CRP / TLC / DLC / ESR

US for (AFI) : If < 5 \* oligohydramnios → if for long time

**Management :** ANTIBIOTICS

- IF < 36 wks
- NO maternal or fetal complications
- NO Ut contractions

Conservative : Antibiotics prophylactic  
+ Follow up maternal & fetal conditions

- IF > 36 wks
- OR Presence of maternal or fetal complications
- OR Presence of Ut contractions

Antibiotics + Termination (whether VD or CS depending on obstetric condition)

NO  
TOCOLYSIS

CRP bb → continue for 48h  
↑↑ → delivery

chorioamnionitis + labor pain

Less transmission of infx

## Oligohydramnios

**Def :** ↓ liquor < 500cc AFI < 5cm

or deepest pocket < 2cm

**Inc :** 5%

**Et :**

(↓ production by fetus or placenta)

\* Renal agenesis

\* Pl. insufficiency

**Cl. picture :**

\* Small size abdomen < amenorrhea

\* Picture of the cause (eg : PE)

**Inv**

US for volume / AFI / Deepest pocket

→ division of abd. then measure blackness by cm

**Complications :**

- \* Of cause (placental insufficiency)
- \* Limb deformity / lung hypoplasia / amniotic band syndrome
- \* Cord compression / fetal distress

**Ttt :**

Depends on etiology

\* in idiopathic → frequent assessment  
\* Poly cause pressure manifestation with idiopathic → amniocentesis  
and amnioinfusion → cause infx

## Polyhydramnios

**(Chronic hydramnios)**

**Def :** ↑ liquor > 2liters AFI > 25cm

or deepest pocket > 8cm

**Inc :** 0.5%

**Et :** ↓ swallowing by fetus

or ↑ production

\* Idiopathic

\* DM (uncontrolled)

\* Oesophageal or duodenal atresia → congenital

\* Anencephaly

**Cl. picture :**

\* Oversize abdomen > amenorrhea

\* Pressure symptoms

(as resp. embarrassment)

\* Picture of the cause (eg : DM)

**Inv :**

US for volume / AFI / Deepest pocket

**Complications :**

- \* Of cause (uncontrolled DM)
- \* Pressure symptoms
- \* Sudden ROM, Placental abruption, Cord prolapse
- \* Malpresentations, Dysfunctional labor, Atonic PPHge

**Ttt :**

Depends on etiology

**NB: Acute hydramnios:**

polyhydramnios before age of viability (24wks) associated é chromosomal anomalies, causing rapid accumulation of liquor & pressure symptoms

ttt: induction of abortion

**NB :** \* Amniotic fluid functions : protect from infection / regulate temperature / lung expansion / limb movements / nutrition

\* Amniotic fluid composition : 99% water, clear, alkaline / mainly FETAL contribution

By urination.

## Preterm labor

**Definition:** start of labor pains after fetal viability & < 36 wks

**Incidence:** 5-10%

**Etiology:**

- Idiopathic / miscalculation .
- Cx incompetence / septate or bicornuate uterus
- Over distended ut ( polyhydramnios / MFG / fibroid ut ) *↳ submucosal*
- Medical / obstetric indication for termination.
- PROM / GTI / UTI / smoking / excessive physical activity
- Iatrogenic ( induced PTL in complicated uncontrolled pregnancies)

### Clinical picture:

**Symptoms :** true labor pains < 36 wks

**Signs:**

- General : of cause or risk factor
- Abd : true ut contractions / cause
- PV: start cx changes (dilatation / effacement)

### Complications ( ALL FETAL ) :

RDS / Retinopathy of prematurity / Cerebral hge

Neonatal sepsis / Necrotising enterocolitis

### Investigations :

CTG to confirm PTL *incompetence*

US : short cervical canal < 2.5 cm *labour > 2.5 cm*

FFN (Fetal fibronectin): from 24-32 wks → glu

(N) absent , if present ( by vag swab ) \* 50% PTL within 2 wks

### Management: of Idiopathic

\* Prophylactic against RDS: steroids 24mg IM & delivery 24hrs after last dose :

Betamethasone ( long acting) 12mg  $\xrightarrow{24h}$  12mg

Dexamethasone ( short acting) 6mg  $\xrightarrow{12h}$  6mg  $\xrightarrow{12h}$  6mg  $\xrightarrow{12h}$  6mg

\* IF still in latent phase (Cx < 4cm dilatation & < 50% effacement) can use Tocolysis to delay labor till Steroids work / NICU transfer:

- 1) Ca channel Blocker ( Nifedipine)
- 2)  $\beta_2$  agonist ( Ritodrine) → tachycardia adverse effect
- 3) PGs synthetase inhibitor ( Indomethacin ) < 32wks → cause premature closure ductus arteriosus
- 4) Anti- oxytocin ( Atosiban ) → high cost (IV, light sensitive)
- 5) MgSO<sub>4</sub> if < 28wks to prevent CP
- 6) Natural Progesterone (17 OH Progesterone caproate ) IM weekly → delay onset of labor

## Post term pregnancy

**Definition:** pregnancy continue after 42 weeks

**Incidence:** 5-10%

**Etiology:**

- Miscalculation.
- Idiopathic.
- Anomalies as Anencephaly.
- Placental cause

\* Liquor decrease with GA → can't induction the labor

### Clinical picture:

**Symptoms :** of cause / may be oversized abdomen ( 80%)

**Signs :** may be normal or oversized abdomen ( 80%)

### Complications:

Fetal >>> maternal

- 80% LGA (in normally functioning placenta) *large GA growth restriction*
- 20% IUGR with its sequelae (in placental aging) ( postmaturity syndrome)
- ↓ liquor / meconium stained liquor & meconium aspiration during delivery

### Investigations:

US : for AFI / placental grading *confirm GA (maturity)*

Growth curves *wait if baby's assessment is good*

### Management:

Assessment of fetal wellbeing ( DFMC / NST / BPP / Doppler )

**When to terminate:**

- 42 wks
- occurrence of labor pains
- occurrence of complications

**How to terminate:** IOL

- Amniotomy ↑ PG → inkx, RPHmg, carb prolapse (in augmentation)
- Oxytocin : If Bishop > 5
- PGs : IF Bishop < 5 *Not for augmentation just induction*

*Cx post → mid → Ant (labour) induction of labour*

|             | 0         | 1      | 2        | 3       |
|-------------|-----------|--------|----------|---------|
| Dilatation  | closed    | 1-2 cm | 3-4 cm   | >5 cm   |
| Effacement  | < 30%     | 30-50% | 50-80%   | >80%    |
| Position    | posterior | mid    | anterior |         |
| Consistency | firm      | mid    | soft     |         |
| Station     | -3        | -2     | -1 / 0   | +1 / +2 |

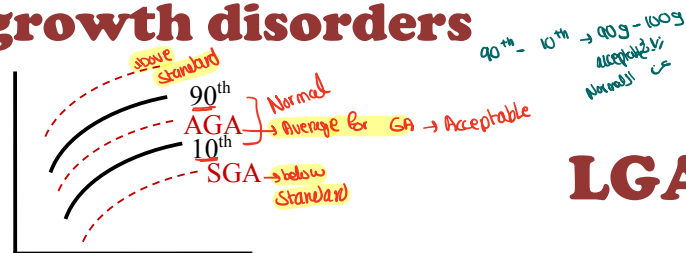
Bishop score

\* screening at 3rd trimester by US

\* measurements →  
BPD (Biparietal diameter)  
AC (abdominal circumference)  
FL (Femur length)

**SGA (IUGR)**  
patho & physio  
intra ut growth restriction

## Fetal growth disorders



**LGA (Macrosomia)**

**Def:** < 10<sup>th</sup> percentile for GA

**Types:**

- 1) Symmetrical 20% (fetal / intrinsic) causes
- 2) Asymmetrical 80% (maternal / extrinsic) causes

**Et:**

Fetal: ch. anomalies / infection in utero → intrinsic → Normal blood reach  
Maternal: pl. insufficiency (anemic, HTN) → extrinsic → all organs smaller → sym

Pathology: brain sparing effect in asymmetrical IUGR

Cl. picture: If mother is anemic → b blood reach → except Brain → Neonate presented by Normal Head → Asym Small Body

Symptoms: small sized abdomen (< period of amenorrhea)

Signs: General: of cause anemic + HTN + low body weight  
Abdominal: ↓↓ FL / ↓↓ SFH (24 - 32 wks)

Inv: symphysisfundal Height cm = wks acceptable diff 1-2 wks

1) To detect etiology

2) US for fetal growth curve assessment:

\* In symmetrical IUGR → -- BPD, -- FL & -- AC

\* In asymmetrical IUGR → (N) BPD & -- FL -- AC

Doppler US → MCA + Umbilical A.

ttt: Brain sparing  
according to cause

**Def:** > 90<sup>th</sup> percentile for GA

**Et:** Idiopathic / DM / Past date / multipara / obesity

**Cl. picture:** Symptoms: of the cause / oversized abdomen

Signs: General: of cause  
Abdominal: ++ FL / ++ SFH +ve until 36 wks

**Inv:**

1) To detect etiology

2) US for fetal growth curve assessment:

ttt: depends on etiology

Delivery by IOL or CS according to obstetric indication but

**avoid Instrumental delivery for fear of shoulder dystocia**

## IUFD

**Definition:** Death in utero after fetal viability

**Etiology:** Idiopathic in 50%  
Maternal as in placental insufficiency  
Fetal anomalies / infections

**Cl. picture:** ↓ or NO fetal movements  
↓↓ FL < period of amenorrhea

**Complications:** DIC if retained for weeks

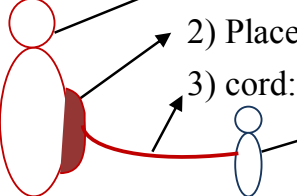
**ttt:** Wait for spontaneous labor pains while closely monitoring fibrinogen level, FDPs to guard against DIC  
If anxious or start complication: Terminate IOL OR CS according to obstetric condition

## Fetal asphyxia ( In utero )

**Def:**  $\downarrow O_2$  &  $\downarrow$  elimination of  $CO_2$   $\rightarrow$   $\uparrow CO_2 \rightarrow$  acidosis (  $PH < 7.2$  )

**Etiology:**

- 1) Maternal : **uncontrolled medical disorders**
- 2) Placenta : **separation / insufficiency**  $\Rightarrow$  *chronic*
- 3) cord: **prolapsed / loops around the neck**
- 4) fetus: **anomalies / instrumental deliveries**



**Cl. Picture:** ( **FETAL** )

- 1) **Abnormal CTG** in assessment of fetal wellbeing:
  - **Loss of beat to beat variability**
  - **Sinusoidal rhythm**
  - **Late deceleration (sp.persistent)**
  - **Brady  $< 100$  **OR** Tachy  $> 160$  b/min**
- 2) **Meconium stained liquor** in **cephalic** presentation
- 3) **Fetal scalp PH  $< 7.25$**

**Management:**

**\* First aid measures:**

- 1) Stop oxytocin + IV fluid rehydration
- 2) Turn mother to Lt lateral position +  $O_2$  mask
- 3) Atropine to the mother

**\* If distress**

- $\rightarrow$  **Relieved** : continue VD & continuous CTG monitoring
- $\rightarrow$  **Not relieved** : immediate delivery

If engaged presenting part  
& fully dilated Cx

Forceps **OR**  
Breech extraction

If not fully dilated

CS

## Neonatal asphyxia ( Post natal )

**Def:**  $\downarrow O_2$  &  $\downarrow$  elimination of  $CO_2$   $\rightarrow$   $\uparrow CO_2 \rightarrow$  acidosis in neonate

**Etiology:**

- $\rightarrow$  persistent fetal asphyxia
- $\rightarrow$  morphine given to the mother 2 – 4 hrs before delivery
- $\rightarrow$  meconium aspiration *Give Naloxone*
- $\rightarrow$  cong anomalies of respiratory , circulatory systems
- $\rightarrow$  prematurity
- $\rightarrow$  birth injuries

**Cl. Picture:** **APGAR score** at  $\rightarrow$  **1min** for need of resuscitation  
 $\rightarrow$  **5min** for prognosis

|                              | 0       | 1                                                          | 2                     |
|------------------------------|---------|------------------------------------------------------------|-----------------------|
| <b>Appearance ( color )</b>  | Blue    | Trunk $\rightarrow$ pink<br>Extremities $\rightarrow$ blue | Pink                  |
| <b>Pulse</b>                 | —       | $< 100$ b/min                                              | $> 100$ b/min         |
| <b>Grimace ( reflexes )</b>  | —       | Grimace                                                    | Active cough & sneeze |
| <b>Activity ( movement )</b> | Flaccid | Some flexion                                               | Active movement       |
| <b>Respiration</b>           | —       | Slow , irregular                                           | Active cry            |

**Ttt:**

- $\rightarrow$  Prevention  $\rightarrow$  proper ANC & control of maternal diseases
- $\rightarrow$  proper intranatal care

- $\rightarrow$  **ttt** : A ( Airway & suction )
- B ( Breathing &  $O_2$  mask )
- C ( Circulation CPR & warmth )
- D ( Drugs ) :
  - $\rightarrow$  Naloxone : morphine antidote
  - $\rightarrow$   $NaHCO_3$  : to combat acidosis
  - $\rightarrow$  Adrenaline : to combat bradycardia
  - $\rightarrow$  Antibiotics : in case of sepsis

**\* Proper use of Instrumental delivery**  
**\* Episiotomy whenever needed**  
**\* Proper use of morphine**  
**\* Care during delivery of after coming head**

**\* CBC & PH, CT**  
 $\rightarrow$  fetal invest



# Puerperium

**Definition :** period of 6 wks following delivery during which all changes that occurred during pregnancy, will return back to normal. *\* No intercourse → Not asexual CX → risk of infection. but it happen → can be pregnant*

## Changes:

### Uterus:

- Lochia (endometrium) : rubra → serosa → alba  
*2 wks red 2 wks yellow (WBCs) 2 wks white without odor*
- Myolysis
- Size at umbilicus on day of delivery then SP (2 wks later) then prepregnancy size (4 wks later)  
*after delivery ut reach the umbilicus*
- After pains: contractions that occur – specially é breast feeding – to help uterine involution  
*عوان*
- Cx & lig back to normal (4 wks later)

### Vagina / Vulva :

- Reformation of rugae
- Gapping of vulva disappears

### Breast :

- PRL for milk formation
- Oxytocin for milk expression
- Colostrum ( ++Ptns , ++ Ig , -- CHO , -- Fat ) first 3 days , then milk expressed → Artificial milk flavor taste
- lactational amenorrhea in 50% of females
- pigmentation of areola remains \*

### vital signs :

- BP back to normal
- ++ T° , but < 38 in 1<sup>st</sup> 24hrs after labor
- Transient ++ pulse tachy
- Diuresis ( retention only with painful episiotomy )
- Constipation ( due to lax muscles ) → 6 glycerin rectally 1 day 6 Dettol orally 1 day
- Emotional liability
- Post partum blues are very common ( needs support & reassurance ) but rarely depression\* ( needs ttt ) & psychosis\* ( needs hospitalization )

\* at post partum hypercoagulable stay all through puerperium.

pu → discharge after 1 day

CS → discharge after 48 hrs

postpartum care

**PPC Program :** 1<sup>st</sup> visit 1 week after labor , then 4-5 weeks later

## to check :

- vital signs returned back to normal ✓
- breast feeding & no milk engorgement ✓
- uterus back to normal & lochia ✓
- abdominal & pelvic floor exercises ✓
- wounds : CS or episiotomy wound ✓
- care for bladder & bowel by normal evacuation ✓
- contraceptive counselling ✓

Breast feeding female → Progesteron reduction  
implant  
mifepristone

## Puerperal pyrexia

في النفاس

**Definition:** ++ T° ≥ 38° after 1<sup>st</sup> 24hrs of delivery , persisting for 24hrs or recurring within 24hrs till end of puerperium.

## Etiology :

- 1) Mastitis / Breast engorgement ( most common ) → So the lady should always drain milk
- 2) P. sepsis ( most serious )
- 3) UTI
- 4) Wound infection
- 5) Respiratory tract infections as COVID – 19 infection
- 6) DVT , Thrombophlebitis
- 7) other causes of fever as typhoid , malaria ✓

“ Any case of puerperal pyrexia should be considered p.sepsis until proved otherwise ”

\* Blood volume ↑  
RBC ↑ plasma ↓  
Dilutional anemia at pregnancy.

# Puerperal sepsis (3<sup>rd</sup> cause of maternal mortality in Egypt)

**Definition :** Infection of the genital tract after labor till end of puerperium

## Etiology :

- **Predisposing F :**
  - General : ↓ immunity / anemia / DM
  - Local : tears / septic conditions / lacerations instrumental delivery
  - Prolonged labor & prolonged PROM
  - Retained parts of placenta or membranes
- **Organism :** Polymicrobial ( Gram -ve / +ve / anaerobes )
- **Route of infection :**
  - Ascending from vagina
  - Autogenous from elsewhere in body
  - Exogenous from attendees

## Pathology :

- **1<sup>st</sup> site ( symptoms immediately after delivery )**
  - \* Uterus (putrid endometritis , septic endometritis) , (Baby) Cx , Vagina , Perineal lacerations
- **2<sup>nd</sup> site ( late symptoms after 7-10 days )**
  - \* Parametritis , salpingo oophoritis , peritonitis , pelvic thrombophlebitis ( after 14 days )

## Cl. picture:

### → Putrid

#### Symptoms:

- \* Fever / foul smelling discharge / lower abdominal pain / ± oedematous white swollen limbs ( phlegmasia alba dollens ) → in thrombophlebitis

#### Signs:

- \* General : Fever / tachycardia / toxic facies / dehydration
- \* Abdominal : tenderness / guarding / rebound tenderness
- \* PV: jumping sign / horse-shoe induration around Cx
- \* ± LL affection : swollen white painful limbs (spread to parametrium (surround Cx both sides))
- \* Septicemia in severe untreated cases

- **Septic :** involuted , no pus inside the uterus , very bad general condition

+ Breast  
+ Respiratory

## Investigations :

### \* To exclude other DD :

- Breast exam ( for engorgement & mastitis )
- Chest X-Ray ( for chest infections )
- C/S ( for wound infection )
- Urine analysis ( for UTI )
- Doppler US ( for DVT )

### \* To confirm diagnosis :

- Culture & sensitivity from discharge (CAC)
- Blood test ( ++CRP , ++ESR , ++TLC , ++DLC (shift to the left) , ++ staff / segmented ratio )
- Pelvic US → to see if there are retained products → D&C

## Treatment :

### \* Prevention :

- by proper ANC ( control anemia , DM )
- 1<sup>st</sup> stage of labor :
  - Avoid prolonged labor
  - Give antibiotics in PROM
- 2<sup>nd</sup> stage:
  - Proper use of instrumental delivery
  - Proper aseptic techniques while doing episiotomy
- 3<sup>rd</sup> stage:
  - Explore placenta & memb. for any missing parts
  - Repair of any laceration under aseptic technique

### \* Active ttt :

- Hospitalization
- IV fluids / IV analgesics / IV antipyretics
- IV antibiotics
  - Cephalosporins for Gram +ve or penicillin
  - Gentamycin for Gram -ve ( Max for 3 days as they are nephrotoxic )
  - Metronidazole for anaerobes

### \* Special situations : ( in addition to above mentioned ttt )

- Abscess : drainage
- In retained parts : Ecbolics ± D&C
- Infected wound : remove suture & drainage
- Septic thrombophlebitis : anticoagulants & immobilization
- Pelvic abscess: Fowler position ± drainage by colpotomy

accumulate pus at Douglas pouch

# Fetal birth injuries $\Rightarrow$ all of them is preventable.

**Definition:** Injuries of fetus at birth (iatrogenic)

**Etiology:** (Instrumental / prematurity / CPD .....)

**Types:**

## 1) Bone injuries:

- Skull :  $\pm$  ICHge\* *(confirmed by CT)*

*most common injury  
to baby when you open  
ut + abd by knife*

|               | Subperiosteal Hge<br>(cephalhematoma)                                                                                                                                                                                        | Caput succedaneum (scalp edema)<br>(chignon)                                                                                         |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <b>Causes</b> | Wrong application of forceps /<br>* Depressed fracture or fissure fracture                                                                                                                                                   | Cervical caput: prolonged labor / cervical causes<br>Pelvic caput : obstructed labor / CPD<br>Artificial caput: ventouse application |
| <b>When</b>   | After few hours                                                                                                                                                                                                              | At birth                                                                                                                             |
| <b>Shape</b>  | Overlie a certain bone <i>localized</i><br>Never crosses suture line<br>Skin over it is normal                                                                                                                               | Any area of the scalp (skin)<br>May cross the suture line<br>Skin over it is echymotic<br><i>No bone fracture</i>                    |
| <b>Fate</b>   | May be infected $\rightarrow$ prophylactic Abx.<br>Calcification<br>Hyperbilirubinemia<br>treatment: $\rightarrow$ Expectant ttt (Antibiotics & follow up)<br>$\rightarrow$ Measures to $\downarrow$ ICT (in cases of ICHge) | Subside spontaneously<br>in 1-2 days                                                                                                 |

- Other bones : humerus / clavicle / spine injuries / shoulder dislocation

$\rightarrow$  ttt: Splint / slab *(for long bones injury)*

*Better healing*

2) Muscle : as sternomastoid  $\rightarrow$  ttt: Passive traction

3) Nerves :  $\rightarrow$  Brachial plexus

- C5,6 : Erb's palsy (Policeman tip position)

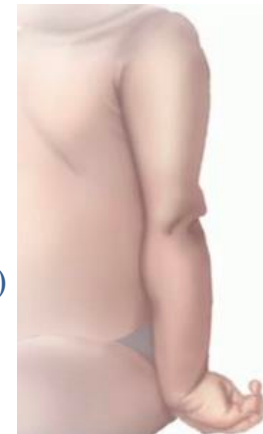
- C8,T1: Klumpke's palsy (failure of grasp reflex) (Ape hand)

$\rightarrow$  Facial nerve injury : (flat nasolabial fold)

due to forceps pressure at stylomastoid foramen

treatment: Physiotherapy  
(will resolve if edema)

4) Organs : liver / spleen / anus / hymen (as in breech delivery)



Erb's palsy



Klumpke's palsy

**NB:** proper management of the 2<sup>nd</sup> stage of labor will prevent most of these iatrogenic birth injuries

# Rh isoimmunization

or blood transfusion +ve

**Definition:** hemolysis of fetal RBCs by maternal Ab ( problem occurs when mother is Rh negative & fetus is Rh positive )

**Etiology :** sensitization of the mother by Rh -ve Mother received Rh+ve blood transfusion

1st exposure form IgM 2nd exposure IgG (cross cl.)

**Pathogenesis :**

Rh -ve Mother × Rh+ve Father → Rh+ve fetus

dd × DD (Dd) → Dd (100%) Dd (50%) & dd (50%)

through pl aging  
or separation at labor

- 1<sup>st</sup> baby may be affected if previous maternal blood transfusion with Rh+ve blood

- Fetus may be spared if :  
→ 1<sup>st</sup> baby  
→ 2<sup>nd</sup> baby but 1<sup>st</sup> one was Rh-ve ( heterozygous father )  
→ With ABO incompatibility  
→ Small amount of exposure

**Effect:** depends upon  
→ Immune system of the mother  
→ Associated ABO incompatibility  
→ She may marry Rh -ve or heterozygous Rh+ve man

**Clinical picture: (FETAL ONLY)**  
→ Hemolytic anemia ( mild form )  
→ Neonatal jaundice : Icterus gravis neonatorum ( commonest & moderate form )  
± kernicterus if bilirubin > 20 mg % cross BBB  
→ Hydrops fetalis ( severe form ) → anemic HF & generalized edema ( Buddha attitude )

**Investigations:**  
→ Rh blood group of mother & father  
→ Indirect coomb's test to mother  
→ Amniocentesis ( if indirect coomb's > 1/16 ) → Bilirubin + Hb  
→ US for fetal anomalies ( HSM / Ascites )

\* Cordocentesis  
more risky

**Treatment:**  
→ **Prevention:** Anti D (only for non sensitized Rh -ve mothers) within 72hrs of delivery of Rh+ve fetus & at 28wks GA & immediately after any procedure done during pregnancy ( Abortion , Ectopic , Amniocentesis , ... )

\* Disorder when mother sensitized by transfusion or previous fetal +ve +  
↓  
will attack 2nd fetus if -ve

If indirect coomb's  
→ ≤ 1/16 → repeat after 4 wks -ve  
→ > 1/16 → amniocentesis  
of mother in case of -ve female +ve male

If ↑ bilirubin & ↓ Hb ( ± hemolysis )

Hb (N) 18gm% , bilirubin (N) < 2 mg / dl

< 34wks

> 34wks

Follow up with titre

Intrauterine transfusion

Terminate

→ After delivery: exchange transfusion for the baby with O -ve blood

→ **Definitive ttt** is plasmapheresis for maternal blood to remove antibodies (very costly, available in limited centers, doubtful prognosis)



\* previous HTN due to other cause stay same at pregnancy and not affect baby (chronic) if controlled

# Medical disorders during pregnancy

## 1) Pregnancy Induced Hypertension (PIH) most serious

**Definition :** HTN + Ptnuria > 24 wks fully developed

**Types :** 6. HTN → should follow up closely as can convert to PIH

\* **Mild :** BP ≥ 140/90, ptn > 300mg

\* **Severe :** uncomplicated : BP ≥ 160/& or 110, ptn > 5gm (no symptoms or lab changes)  
complicated (é symptoms or lab changes in addition to the above mentioned criteria)

**Inc :** 4-7% (one of the leading causes of maternal mortality)

**Et :** Risk f : PG / renal disorders / SLE / APS / DM / +++ HCG (v.mole / MFG) chronic HTN / elderly  
Theories & pathophysiology: antihypertensive syndrome

**Failure of Trophoblastic invasion in spiral arterioles of placenta** → Normally when endometrium muscular layer of blood vessel

musculosa still functional  
**Narrower vessels with ++ vascular resistance** \* ↓↓ placental perfusion

↑BP → **& release of toxic mediators**

Reaching all or any organ (liver / brain / retina / kidney / BVs) So affecting their function  
occult edema → generalized edema (not seen just monitor in BW)

**Cl. picture :**

① disease of Signs ↑BP / ptn in urine / weight (due to occult edema)

② symptoms ONLY in severe PE :

**liver edema**

\* Epigastric pain  
\* Rt. Hypochondrial pain (liver affection)  
↑LFT

**Brain edema**

\* Headache  
\* Vomiting } brain affection  
\* Blurring of vision (retinal affection)

\* ↓DFMC (in severely affected fetus)

\* Vaginal bleeding ?? (Accidental hge) (APHge)

\* Oliguria (in kidney affection)

\* LL oedema

DD : of ↑BP / ptnuria / edema

**Complications :** **Maternal :** Severe PE é symptoms or lab changes (HELLP) Retina / liver / kidney / brain / DIC ...  
Eclampsia (convulsions)

**Fetal:** IUFD

**Inv :** **Maternal :** A/C ratio > 0.3, CBC (Hb, Hct, PLT), LFTs, KFTs, coagulation, fundus exam, ? CT brain

**Fetal :** US (growth assessment, liquor) / assessment of fetal wellbeing

\* Normally BP ↓ with 2nd trimester



## Hypertensive disorders of pregnancy :

1 \* **Preeclampsia (PIH) :** most serious

HTN + Ptnuria > 24 wks GA

2 \* **Gestational HTN :** HTN > 24 wks GA → No proteinuria

3 \* **Chronic HTN :** HTN < 24 wks GA known

4 \* **Superimposed PE :** chronic HTN + PE

5 \* **ECLAMPSIA :** PE + Seizures

**Ttt:** ① \* we don't ↓ BP to don't lower PL perfusion more → so just used Anti HTN for prevent ICH

**Mild PE :** continue to term but NOT post term é close observation → No Anti HTN

② **Severe PE :** A

\* **Complicated :** IF Symptoms or lab changes :

MgSO<sub>4</sub> & Immediate termination

\* **Uncomplicated :** IF only BP & ptnuria NO symptoms or lab changes:

< 36wks

Antihypertensive & close observation

Till: reach 36wks

labor pains

occurrence of complications

> 36wks

MgSO<sub>4</sub> + terminate

③ **Eclampsia:**

- MgSO<sub>4</sub> / Diazepam :

to control convulsions

- IV anti hypertensive

- Termination of pregnancy

④ **NB:**

\* Prophylaxis ? low dose aspirin → PL perfusion

\* Uric acid : increases in PIH & used for its prediction

Termination → PU >>> CS

\* Chronic HTN changed drugs in pregnancy.

\* Hydrochloride labetalol α-methyl dopa

\* fetal HTN مريض اللى في فتره

## 2) DM with pregnancy

### Definition :

hyperglycemia / glucosuria / microangiopathy

### Et:

- GDM : Only during pregnancy
- Overt DM :
  - Type I : insulin dependent
  - Type II : non insulin dependent } → Chronic

### Risk F :

old age , multipara , H/O of IUFD , H/O of congenital anomalies

### Pathophysiology :

pregnancy is diabetogenic due to placental anti insulin hormones ( PRG , Cortisol , HPL ) & insulinase enzyme

### Cl.picture :

- Maternal :
  - ↑ infection ( vulvovaginitis ) Fungal → treat locally
  - polyuria
  - polydipsia
  - previous Hx
  - Abortion / PTL / PROM / Puerperal sepsis
  - Instrumental deliveries
  - ++ DKA / PE
- Fetal :
  - Macrosomia / polyhydramnios
  - FCA :
    - hyperglycemia → hyperinsulinemia → ↑ growth
    - VSD ( most common )
    - Sacral agenesis ( caudal regression syndrome ) ( most specific )
  - Sudden IUFD ( hyper → hypoglycemic )
  - Fetal birth injuries & shoulder dystocia
- Neonatal :
  - after Birth
  - RDS
  - Hypoglycemia → hyperinsulinemia persist ( give IV glucose to the new born upon delivery )
  - Hypocalcemia
  - Polycythemia
  - Hyperbilirubinemia

### Inv :

- Maternal :
  - urine sugar ↑
  - Screening for all pregnant ladies (24-28wks):
    - 50gm OGTT If  $\geq 140$  mg /dl
  - Diagnostic : 3hrs 100gm OGTT oral glucose tolerance test → give 50g glucose and test after 1hr
  - Considered positive if at least 2 values are abnormal
    - N : FBS : 90 mg %
    - 1hr : 165 mg %
    - 2hrs : 145 mg %
    - 3hrs : 125 mg %
  - HbA1c : to assess glycemic control over past 3 months ( best indicator for occurrence of fetal congenital anomalies )
- Fetal :
  - US
    - 2<sup>nd</sup> trimester for anomaly scan
    - 3<sup>rd</sup> trimester for Macrosomia , Polyhydramnios
  - Assessment of fetal wellbeing

### Treatment:

- Diet + exercise : if blood sugar < 200mg/dl
  - Continue metformin ( if was given since before pregnancy )
  - Insulin : if blood sugar > 200 mg /dl
    - 2/3 dose at morning & 1/3 dose at night
    - 50 : 50 ( short acting : NPH )
  - Oral hypoglycemic as teratogenic & long acting so difficult to be controlled hypoglycemic coma
  - Delivery : depends on glycemic control
    - \* if good control → wait for spontaneous labor pains
    - \* if uncontrolled → terminate after giving steroids for lung maturity. 36 wks
- No instrumental → shoulder dystocia
- \* Contraception → No IUD → intra
- \* After delivery need insulin at low doses → No PL affect + Breast feeding by glucose
- ↓ macrosomia
- if uncontrolled DM (Chronic) → if uncontrolled DM (Chronic)
- short acting Not terato
- intermediate
- AI or CS No diff

### 3) UTI é pregnancy

#### A) Asymptomatic bacteruria

↳ +ve urinalysis without symp → part of ANC

**Def :** > 100.000 CFU

**Inc:** 3-7% of pregnant females  
(↑↑ in 2<sup>nd</sup> trimester due to stasis & compression on ureter)  
*pg relaxed smooth muscles in ureter*

**Diagnosis :**   
↳ urine analysis  
↳ urine culture & sensitivity  
*>90% E.Coli → ampicillin*

**Ttt :** outpatient  
oral antibiotics is a must as 30 – 45 % → pyelonephritis

#### B) Acute pyelonephritis ( upper UTI )

**Def :** upper UTI with systemic manifestations

**Et :** asymptomatic bacteruria

**Cl.picture:** fever/ loin pain

#### Complications:

↳ **Maternal:** pulmonary dysfunction from sepsis & anemia, CKD  
↳ **Fetal :** PROM, PTL, Morbidity & Mortality

**Inv :**   
↳ Urine analysis / Urine culture & sensitivity  
↳ US  
↳ Assessment of fetal wellbeing

**Ttt:** Hospitalization + IV fluids, antipyretics, analgesics  
Start IV antibiotics then modify according to C/S

### 4) Cardiac diseases é pregnancy

**Types:** <sup>chronic</sup> RHDs (developing) , <sup>congenital</sup> CHDs (developed) countries.

#### Pathophysiology :

↳  $\pm BP = \uparrow\uparrow CO \times \downarrow\downarrow TPR$   
 $\uparrow SV \times \uparrow HR$  (hyperdynamic circulation)  
↳ Waterhammer pulse: (S/D) difference  
↳ Apex : shifted to 4<sup>th</sup> intercostal space outside MCL → ECG changes Normally  
↳ Split S<sub>1</sub> / appearance of S<sub>3</sub> / Systolic functional murmurs (éout thrill)  
↳ ECG changes due to change in heart axis

**Risk F :** anemia / hypertension / infection / hyperthyroidism

#### Clinical picture ( NYHA classification ) :

**I :** Dyspnea on > ordinary effort      **II :** Dyspnea at ordinary effort  
**III :** Dyspnea on < ordinary effort      **VI :** Dyspnea at rest

#### Effect (complications):

↳ **Maternal :** Worsen NYHA classification by 1grade if already had HD  
↳ **Fetal :** LBW / IUGR / Fetal anemia

**Inv :** ECG / Echo / US for fetal biometry (SGA)

*\*max volume overload 24-28 weeks*

#### Management:

##### \* In pregnancy

↳ More frequent ANC  
↳ Guard against anemia / infection / HTN / Hyperthyroidism  
↳ Digitalis to be continued or started whenever needed

##### \* In Labor: → Spontaneous

↳ Semisitting / O<sub>2</sub> mask / Analgesics / Antibiotics  
↳ Avoid fluid overload : care é oxytocin ( has ADH like action )  
↳ Shorten 2<sup>nd</sup> stage by forceps / ↓ bearing down ← in case of PV  
↳ Smooth VD or CS ( whenever indicated )  
↳ In 3<sup>rd</sup> stage : \* Lasix to ↓ VR & heart load      \* **NO Ergometrine**

##### \* In puerperium : → CI in PIH

↳ Breast feeding CI in HF ⇒ increase metabolic rate  
↳ Proper selection of contraception → Not Hormonal → IUD

### 5) Seizures (convulsions, Epilepsy) é pregnancy

75% remain same, 25% worsen due to metabolism of anticonvulsants.

Effect of anticonvulsants on fetus : FCA, CP/MR, - - VitK (é phenytoin)

**Management :**   
↳ **Maternal :** \* Extra folic since before pregnancy 800µg daily      \* Monotherapy is better é least possible dose to control seizures  
↳ **Fetal :** anomaly scan

*↳ 5mg in*

*↳ least dose*

*tonic → clonic → coma*



## 6) Anemia é pregnancy

**Def:** ↓ Hb less than 11 gm%

or less than 10.5 gm% in 2<sup>nd</sup> trimester

**Inc:** commonest medical disorder during pregnancy

**Effect of pregnancy on blood :**

\* Physiological ( dilutional anemia )

( ++ plasma > + RBCs )

\* Tachycardia & Hyperdynamic circulation

\* Max effect at 20 wks

**Etiology :**

\* Nutritional (Fe deficiency anemia) **COMMONEST**

\* Megaloblastic (folic A. & Vit B<sub>12</sub> deficiency)

\* Hemorrhagic

(bleeding in early, late pregnancy & PPHge)

\* Hemolytic (congenital or acquired)

\* Hereditary (thalassemia , sickle cell anemia)

\* Aplastic

**Effect (complications):**

→ **Maternal:** easy fatigability , PTL , PPH ,

Puerpural sepsis

→ **Fetal:** IUGR, LBW, PTL, neonatal sepsis , anemia

**Inv:**

→ Maternal ( for iron deficiency anemia):

CBC / serum ferritin / TIBC

→ Fetal : Assessment of fetal wellbeing

**Ttt:**

→ Prophylactic

→ **Mild** (10-11 gm/dl) : oral iron → 2 months to ↑

→ **Moderate** ( 7-10 gm/dl ) : parenteral iron → 2 weeks to ↑

→ **Severe** ( 4-7 gm/dl ) / Decompensated

( < 4 gm/dl ) : blood or packed RBCs → immediately increase

→ Guard against PPH / P.sepsis

→ Continue iron in puerperium

\* 1<sup>st</sup> trimester → Diet + vit C + folic acid + Ca<sup>2+</sup>

multi-vitamins → till end of pregnancy

→ till end of 1<sup>st</sup> tri

→ till end of breast-feeding

## 7) Thyroid disorders é pregnancy

### 1) physiological Goiter

Due to → ++ blood supply

→ - - iodine

→ ++ total T<sub>3</sub> & T<sub>4</sub>

due to ↑ TBG *Binding globulin*

( free T<sub>3</sub> & T<sub>4</sub> unchanged)

*physiological ↑ in size*

### 2) Hyperthyroidism

\* Graves' disease (commonest during pregnancy):

Autoimmune

\* **Complications:**

Abortion , PTL , IUGR

\* **Inv:** - - TSH , ++ freeT<sub>4</sub> ,

++ TSH receptor Ab

\* **Ttt:**

Propylthiouracil ± βB /

Steroids

× × NO radioactive iodine × ×

### 3) Hypothyroidism

Rare in pregnancy as it causes

infertility & anovulation

Commonest cause:

Autoimmune

(Hashimoto thyroiditis)

**Inv :** ++ TSH , - - freeT<sub>4</sub>

**Ttt :** Eltroxine → Need of thyroid ↑

so increased dose

with pregnancy

**NB:**

requirements ↑↑ in pregnancy

## 8) Venous thromboembolism

**Effect of pregnancy on blood:** Normally at pregnancy there is a hypercoagulable state to prevent PPHge

→ ++ clotting factors & - - fibrinolysis

→ ++ platelets activation

→ Venous stasis due to pressure by gravid ut.

→ ++ thromboembolic events in pregnancy & puerperium

**Risk F:** > 35 yrs , multipara , obese , VV , H/O of DVT ,

thrombophilia , APS , CS , sepsis sp . pelvic

**Cl.pict of DVT:** red , hot , tender , swollen calf ms

**Complications :** 25% of DVT will result in PE of which 15% are fatal

**Inv:** → Doppler US

→ Venography ( CI during pregnancy )

**Ttt:**

→ **Prophylactic :**

\* Hydration & mobilization

\* LDA

\* Elastic stocking

\* **LMWH** (clexane) single SC injection :

in high risk multifactorial , till end of puerperium

→ **Actual ttt :**

Therapeutic dose of IV heparin or LMWH

& immobilization

**NB:** Warfarin is CI in 1<sup>st</sup> trimester ( teratogenic )

& in 3<sup>rd</sup> trimester r ( fetal ICHge )

**When to stop anticoagulants before delivery?**

- Aspirin 1 week before delivery

- Clexane 24hrs before delivery

## 9) Pulmonary Embolism

**Cl.pict:** Breathlessness / Hypoxia / Tachycardia /

Pleuritic chest pain

**Inv:** → ECG changes

→ Ventilation / perfusion scan

→ Pulmonary angiography

**Ttt:** ICU support , O<sub>2</sub> Therapy ,

IV Anticoagulant ( high therapeutic dose)



## 10) GIT disorders with pregnancy

### A) Emesis Gravidarum (NVP)

Reassurance / small frequent meals / ↓↓ fat & ↑↑ carbohydrate intake  
*to 2-5 months*  
*food vomiting*

### B) Hyperemesis Gravidarum (HEG)

*pathological*  
*No eating → vomiting → Dehydration → ketones in urine*  
 Def: Excessive vomiting in 1<sup>st</sup> trimester that affects general condition

Etiology ( theories ) : ++ HCG / -- Vit B<sub>1</sub> ( Thiamine ) / Psychogenic

Pathogenesis : *peak 10 wks*  
 & *twins more*  
 Complications :  
 → Dehydration / hemoconcentration  
 → Electrolyte disturbance / Starvation ketosis  
 → ↓ liver glycogen & ++ AST , ALT  
 → Mallory Weiss Syndrome  
 → Wernicke's encephalopathy

Inv : Na<sup>+</sup> / K<sup>+</sup> / LFTs / Hct / chloride in urine

Treatment:  
 → Hospitalization / NPO → start rice → Juice  
 → IV fluids & correct electrolytes  
 → IV or PR Antiemetics  
 as metoclopramide , meclizine , ondansetron  
 → Rarely termination ( in severe cases of encephalopathy)

### C) Jaundice with pregnancy

#### Pregnancy related:

\*Severe hyperemesis gravidarum

\*Severe complicated PIH

\*Intrahepatic cholestasis

Def : cholestasis & pruritis *Bile salts* > 20 wks GA

Inc : 1-4 %

Etiology : unknown ?! genetic

Diagnosis : → Cl.picture :  
 → Itching & rash , sp. palms & soles  
 → Jaundice ( rare )

Inv :  
 → ++ bile acids  
 → Mild + AST, ALT , Bilirubin

Ttt : Symptomatic : cold baths , antihistaminics

→ Ursodeoxycholic acid tab

→ Termination if : reach 36 weeks / occurrence of labor pains / maternal or fetal complications

\*AFLP ( acute & may be fatal )

Definition: fat deposition within liver cells in 3<sup>rd</sup> trimester

• affection of function +++AST & ALT

Incidence : extremely rare

Etiology : unknown ?! error of metabolism ( enzymatic )

Cl.picture :  
 → nausea , vomiting , abdominal pain , jaundice  
 → hypoglycemia , HTN (PE)  
 → coagulopathy , DIC

Inv : ++PT , PC , INR , Bilirubin , AST , ALT , hypoglycemia

ttt : prompt delivery ( serious condition )

& ICU admission to support general condition

#### Not pregnancy related:

\*Hepatitis

\*Drugs / food

## 11) Toxoplasma é pregnancy

Et : toxoplasma gardii (protozon) & infection by handling cats excreta

Inv : Ig M detection → infection ( NB : Detection of Ig G → immunity )

Cl picture : maternal : fever , lymphadenopathy , abortion , cong anomalies

Ttt : spiramycin , rovamycin ttt even during pregnancy

## 12) Rubella (German Measles)

Et : viral infection

Inv : Ig M detection → infection ( NB : Ig G detection → immunity )

Cl picture: abortion , cong anomalies

Ttt : prevention by giving Rubella vaccine before pregnancy  
 ( live attenuated vaccine )

pre conception → Diagnosis before preimplantation → in case of IVF.

## Prenatal diagnosis of congenital anomalies

**Definition :** In utero identification of structural or chromosomal (aneuploidy / non disjunction) abnormalities in the fetus for early management  
( ie early induction of abortion if needed , counselling of the parents to be prepared )

**Indications:** High risk cases needing screening

- 1) Maternal age > 35 yrs ( more risky for Down syndrome ) + primi
- 2) Early exposure to teratogens ( drugs , radiation , infection )
- 3) Previous H/O of anomalies in babies or family H/O of genetic disorders

**NB :** If screening test is positive → a confirmatory test is needed

\* Anencephaly → induced abortion  
\* Down → contraversion



\* exposure to teratogenic early before diagnosis of pregnancy more risky if she exposed after 1st tri bcz organogenesis occurs at 1st tri.

| Screening Tests<br>( cheap / non invasive / high sensitivity )                                                                                                                                                                                                                                                                                | Diagnostic (confirmatory) Tests<br>( accurate / invasive / high specificity )                                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1) Maternal serum biochemical markers :</b><br>- DMT : $\beta$ HCG + PAPP-A ( 11 – 13 wks )<br>- TMT : $\beta$ HCG + MSAFP + uE <sub>3</sub> ( 14 – 16 wks )<br>- Quadruple test : same markers as TMT + Inhibin A ( 16 – 20 wks )<br>NB : in Down syndrome all markers ↓↓↓ EXCEPT $\beta$ HCG ↑↑↑                                         | <b>1) Chorion Villous Sampling : ( trophoblastic tissue biopsy )</b><br>- vaginal ( at 11wks ) / abdominal ( at 14 wks )<br>- both TAS guided / abortion risk 2 %                                                               |
| <b>2) US :</b><br>- NT , presence of nasal bone ( 11-13 wks ) Normally < 3mm<br>( NT > 3mm , hypoplastic nasal bone in Down )<br>Anencephaly all ↓↓ except AFP TMT                                                                                                                                                                            | <b>2) Amniocentesis: ( Amniotic fluid &amp; cells shedded obtained by needle US guided)</b><br>- abdominal at 14-16 wks<br>- risk of abortion 1% , infection , ROM , Pl.separation                                              |
| <b>3) Cell free Fetal DNA : ( 10 -11 wks )</b><br>- used as screening & confirmatory<br>- non invasive but expensive & not available in all centers<br>- diagnostic only for 5 -12 chromosomes<br>( including ch. 21, 13 , 18 ) , but not the whole 23pairs of ch.<br>as other diagnostic tests as CVS & amniocentesis<br>from mother's blood | <b>3) Cordocentesis : ( Fetal blood sample , US guided)</b><br>- diagnostic & therapeutic in exchange transfusion in Rh isosensitization<br>- abdominal at 16-20wks                                                             |
|                                                                                                                                                                                                                                                                                                                                               | <b>4) Advanced US ( level 2 )</b><br>- anencephaly , cystic hygroma , skeletal anomalies ( 11-13 wks )<br>- major anomalies : NTDs , skeletal , cardiac , renal & GIT anomalies , diaphragmatic & ventral hernias ( 18-22 wks ) |
|                                                                                                                                                                                                                                                                                                                                               | <b>5) Cell free Fetal DNA: ( as before )</b>                                                                                                                                                                                    |

**NB : PGD ( Pre implantation genetic diagnosis ):**

Done in association with IVF procedure

Single cell at 8 cell stage or dozen cells in blastocyst stage :

→ stage can be taken with no damage to fetus , to provide DNA for PCR analysis for inherited genetic disorders.

“ for diagnosis of anomalies before doing the embryo transfer & in preimplantation sex selection ( in cases of sex linked anomalies)”

### Prenatal diagnosis of Down syndrome

H/O : maternal old age

| Screening                                                                                                                                                 | Confirmatory                                                                                      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <b>10wks:</b> Cell Free Fetal DNA<br><b>11 – 13 wks:</b> DMT : $\uparrow \beta$ HCG + $\downarrow$ PAPP-A<br>US: * NT > 3mm ,<br>* hypoplastic nasal bone | <b>10wks:</b> Cell Free Fetal DNA<br><b>11wks:</b> Vaginal CVS<br><b>14-16 wks:</b> Amniocentesis |
| <b>14-16 wks:</b> TMT: $\uparrow \beta$ HCG + $\downarrow$ MSAFP + $\downarrow$ uE <sub>3</sub><br><b>18-22wks:</b> US: Other soft markers                |                                                                                                   |

at lateral 3rd of fallopian tube (ampulla)

penetration of sperm to oocyte

# Fertilization , Implantation & Placenta formation

**3) Fetal development**

- Endoderm
- Mesoderm
- Ectoderm

**2) Implantation**

**1) Fertilization**

**a) Placenta formation**

Invagination of chorion to decidua basalis

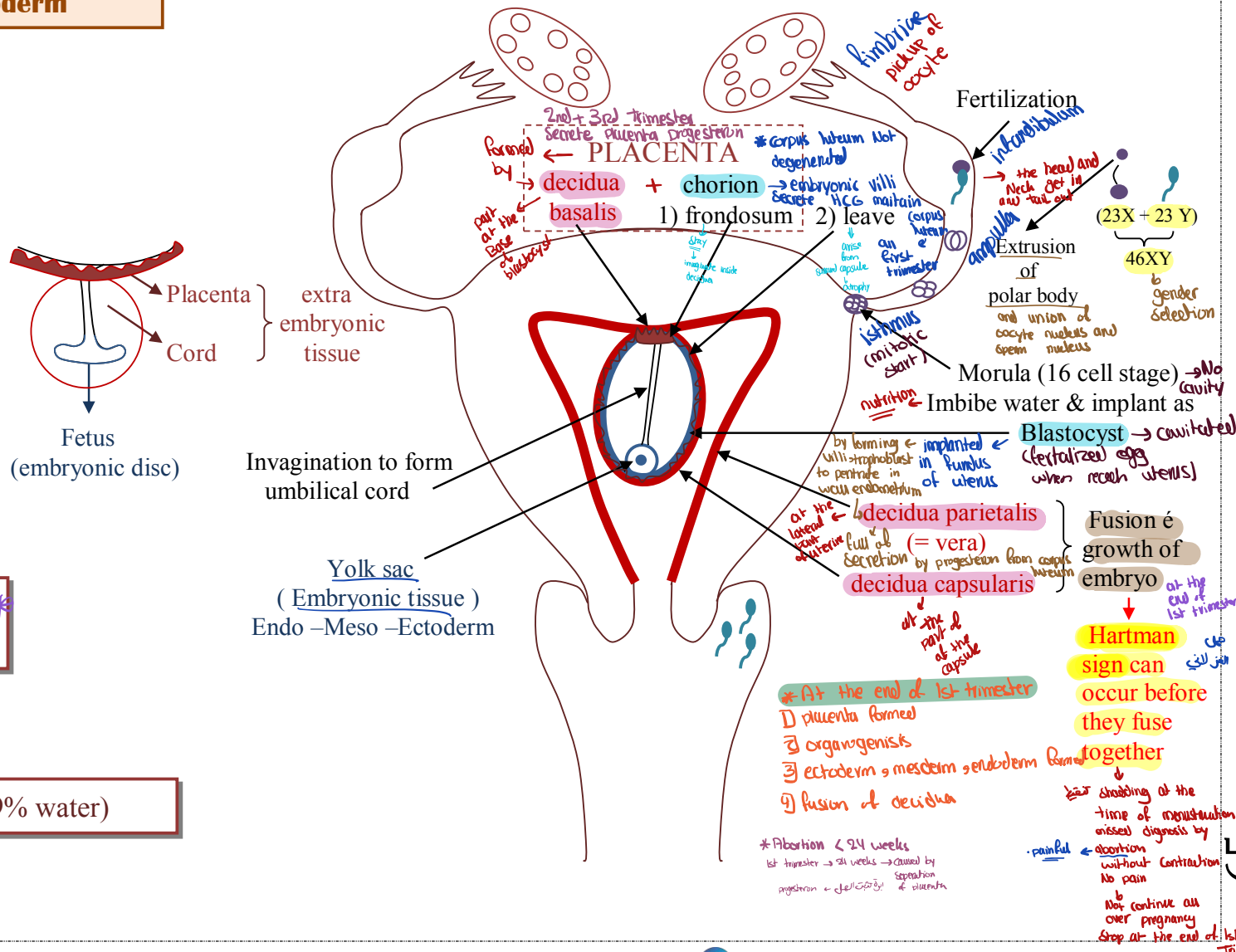
**b) Umbilical cord**

Invagination of chorion = mesodermal and endodermal layers

**c) Extraembryonic membranes\* (amnion /chorion)**

Amniotic fluid space  
Villi

**d) Amniotic fluid (1.5 liters , 99% water)**



# Placenta

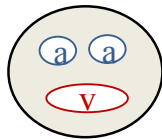
**Definition :** interface between mother & fetus

**Formation :** Chorion frondosum + decidua basalis

**Gross:** 20 cm diameter ( discoid ), 500gm weight , formed of 15-20 cotyledons ( unit of the placenta )

**Functions:**

- Transfer :**
  - Simple diffusion : é conc gradient as  $H_2O$  ,  $O_2$  ,  $CO_2$
  - Facilitated diffusion : é carrier as glucose , ketones , FA
  - Active transport : against conc. gradient as aa ,  $Ca^{++}$  , Fe
  - Pinocytosis : for large molecules as LATS , Ig
- Endocrine :**
  - HCG :** glycoprt to maintain CL of pregnancy in 1<sup>st</sup>  $\Delta$  peak
  - HPL :** ptn , main metabolic hormone , provide glucose , aa , FA to fetus
  - Estrogen :** steroid for hyperplasia of ut ms , breast duct proliferation
  - PRG :** steroid for hypertrophy of myometrium , decidua , Breast alveoli , oedema , immunological , relaxation in 1<sup>st</sup> trimester
- Immunological :** for fetal acceptance
  - Immunity is low toward pregnancy to prevent it from rejection
  - Risk of infection → supplements → acidity from estrogen → candida
  - \*excretion of waste products from fetus



Done through placental barrier → become thin with age  
 ↓  
 Placental aging → hormones

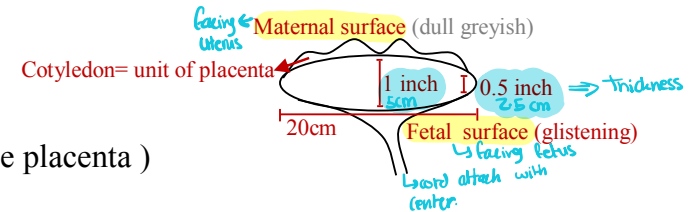
## Umbilical cord

**Definition :** develops from the ventral ( connecting ) stalk , mesodermal in origin measures 50cm , 1-2 cm diameter

**Abnormalities :**

- Insertion :**
  - Marginal ( battledore )
  - Velamentous ( in membranes )
- Knots :**
  - False: accumulated Wharton's jelly ( no complications )
  - True :→ fetal asphyxia
- Length :**
  - Too long ( > 60 cm )→ cord prolapsed & true knots , loops around neck
  - Too short ( < 35 cm )→ prolonged 2<sup>nd</sup> stage of labor → failure of descent
- Vasa previa :** Vessels crossing Cx . connecting placenta to another lobe as in velamentous insertion ( If bleeding→ severe fetal distress ± death )

ischemia → fetal distress



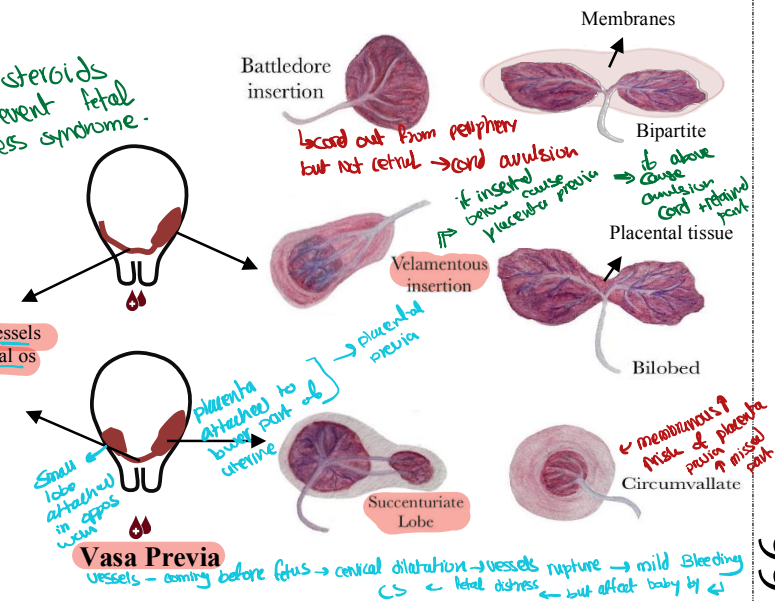
**Abnormalities :**

- In shape :**
  - Membranacea** ( diffuse / large ) placenta ( Circumvellate )
  - Bilobate** : 2 lobes é tissue inbetween
  - Bipartite** : 2 parts é membranes inbetween
  - Succenturiate** : one large part & another small accessory lobe ( may be missed & retained in delivery )
- In size & weight :** ++ in \$ , hydrops fetalis , DM ( > 600gm & > 5cm thickness )
- In adhesions :** accreta / increta / percreta
- In implantation :** on LUS = pl.previa
- Pl.infarcts :**
  - White : fibrin deposition / calcium deposition
  - Red: hge as in HTN \*
- Calcification:** with advanced aging of placenta



\*give steroids to prevent fetal distress syndrome.

Bleeding from the vessels if crossing the internal os







## High risk pregnancies

\* **Definition :** pregnancy that endangers health of mother / fetus or newborn

\* **Examples :**

- 1) Elderly primi (  $> 35$  yrs ) , pregnancy  $> 40$  yrs old , grand multipara (  $\geq 5$  deliveries )
- 2) Maternal medical condition : uncontrolled DM , HTN , cardiac , SLE, ...
- 3) Obstetric problems: H/O of RPL, current APHge , ROM , PTL ,Placenta accreta, ...
- 4) Fetal problems : anomalies , IUGR , Multiple pregnancies , ...

\* **Management :**

- More frequent ANC visits
- Delivery in specialized equiped place
- Management in pregnancy & labor accordingly

## Maternal mortality in Egypt

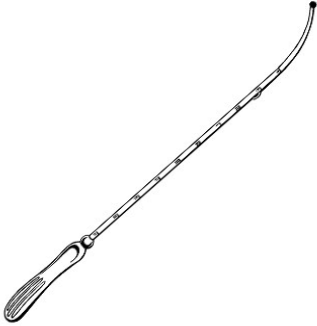
\* **Incidence :** 52 /100.000 deliveries as per year 2013 ( number of maternal deaths due to Obstetric causes )

\* **Common causes:**

- 1) obstetric hemorrhage : as PPHge 30% , as in Egypt
- 2) PE & Eclampsia : 15% , as in developed countries
- 3) puerpural sepsis : 3.5% , as in developing or very underdeveloped countries
- 4) others as pulmonary embolism , DIC , Cardiac problems ,...

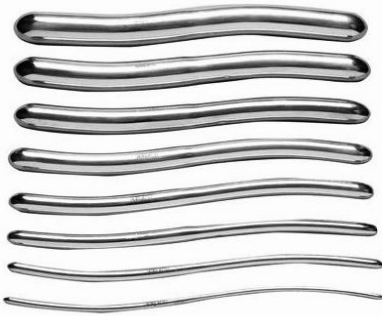
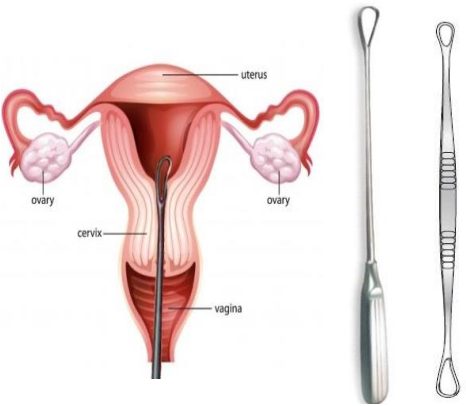
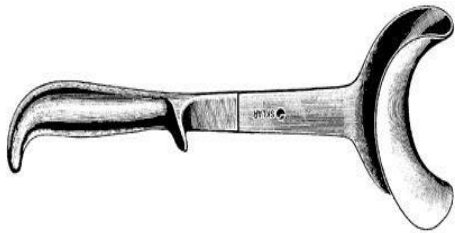
# Instruments in OBGYN

## NO ANESTHESIA NEEDED

|       | Uterine Sound                                                                                                                | Cusco speculum                                                                                                               | Sim's speculum                                                                                                                               | Volsellum                                                                                                                            | Ring forceps                                                                                                                                               |
|-------|------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       |                                             | <br><i>uni valve</i>                        | <br><i>Sim's position</i><br><i>Bi valve</i>               | <br><i>multiple toothed</i> <i>single toothed</i> |                                                                         |
| Uses  | - Measures the length of the uterine cavity preliminary to IUD insertion, or any procedure as dilatation<br><i>or Biopsy</i> | - Used during gynecological examination to visualize the cervix and lateral vaginal walls.<br><i>pap smear, IUD, D&amp;C</i> | - Used to retract posterior vaginal wall to expose the anterior one in case of vesicovaginal fistulae. Patient should lie in sim's position. | - Used to hold and steady the firm (gynecology) cervix for any procedure of IUD insertion.                                           | - Used to hold and steady the soft (obstetrics) cervix in cases of early pregnancy prior to surgical evacuation as it is less traumatic than the volsellum |
| Comp. | Uterine Perforation                                                                                                          | _____                                                                                                                        | _____                                                                                                                                        | May be traumatic to the cervix, causing lacerations especially in single tooth volsellum                                             | _____                                                                                                                                                      |

# Instruments in OBGYN

## ANESTHESIA NEEDED

|       | Dilator                                                                                                                                                                                                                                     | Uterine Curette                                                                                                                                               | Doyen Retractor                                                                                                                                                                                          | Ovum forceps                                                                                                                                                                |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|       |                                                                                                                                                            |                                                                             |                                                                                                                       |                                                                                          |
| Uses  | <ul style="list-style-type: none"> <li>- Dilatation preliminary to another operation</li> </ul>                                                                                                                                             | <ul style="list-style-type: none"> <li>- for endometrial biopsy (Fractional curettage) or evacuation of products of conception <i>or curettage</i></li> </ul> | <ul style="list-style-type: none"> <li>- Used to retract the dissected urinary bladder down from the lower uterine segment during Cesarean section, to protect it and prevent bladder injury.</li> </ul> | <ul style="list-style-type: none"> <li>- Used to evacuate the products of conception in case of abortion</li> <li>- It's same as ring forceps but without a lock</li> </ul> |
| Comp. | <ul style="list-style-type: none"> <li>- Shock: if used without anesthesia.</li> <li>- Perforation of the uterus</li> <li>- Lacerations of the cervix</li> <li>- Introduction of Infection.</li> <li>- Anesthetic complications.</li> </ul> | <p>In addition to complications of dilatation, over curettage may lead to Asherman's syndrome.</p>                                                            |                                                                                                                                                                                                          |                                                                                                                                                                             |



**NB:** In case of uterine perforation :

- Stop procedure
- Give antibiotics
- Observe vital signs

→ If normal : Discharge the patient

→ If deteriorates or intestinal contents appear through Cx : Exploratory laparotomy and proceed.



# Clinical History Taking

\* every 3 months pregnancy = 13 weeks  
 \* we do US 3 times during pregnancy → 1 when discovered 2 in between 3 before birth

## General sheet

**Personal H/O :** Name / Age / Marital status / Parity / Occupation / Residency / Special habits

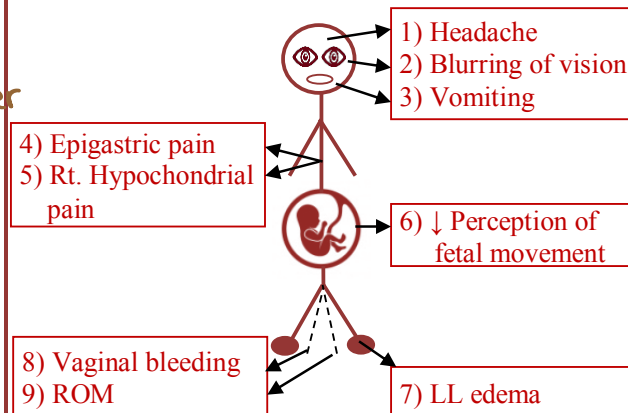
**C/O :** in patient's own words ( + duration )

**Present H/O :**

\* Last period day ⇒ if the know day near last we add 90  
 \* predicted day of delivery ⇒ " " " " predicted we -40  
 6/11 → last 22/2 → predicted 40 weeks 15-1 → near 40-4 = 36±2 weeks  
 add 4 weeks 15/1 → know 10 weeks 1 month

| Gynecological sheet                                                                                                                                                                                                                                                                          | Obstetric sheet                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1) Analysis of complaint (onset / course / duration)<br>2) Analysis of Pain / Bleeding / Mass<br>3) Ask about etiological F, symptoms & complications of your DD to reach a provisional diagnosis<br>4) Investigations & ttt done for this patient<br>5) Review of other systems involvement | 1) LMP EDD ± GA<br>2) Analysis of 1 <sup>st</sup> trimester symptoms<br>↳ Vomiting<br>↳ Bleeding<br>↳ Frequency of micturition → compression on bladder<br>3) Analysis of 2 <sup>nd</sup> trimester symptoms<br>↳ Quickening → حركة البويضة<br>↳ Relieve of 1 <sup>st</sup> trimester symptoms<br>4) Analysis of 3 <sup>rd</sup> trimester symptoms:<br>⚠ ( warning symptoms ) ⚠<br>5) Analysis of C / O ( if present )<br>6) Investigations & ttt done<br>7) Review of other systems |

### WARNING SYMPTOMS related to preeclampsia



**Past H/O :** Medical : medical disorders prior to C/O

Surgical : operations done prior to C/O

**Family H/O :** of similar condition / consanguinity

**Menstrual H/O :** menarche / menstrual index eg : 3/28 / dysmenorrhea / intermenstrual bleeding

**Obstetric H/O :** Fullterm Preterm Abortion Live / GPL / history of contraceptions

twins = 1 fullterm pregnancy = 2 para

| Fullterm | Preterm | Abortion | Live |
|----------|---------|----------|------|
| > 36 wks | 24-36   | < 24     | now  |

eg:

| Year of pregnancy | GA at termination / delivery | Outcome  | Mode of delivery / termination | place          | Pregnancy complications | Postpartum complications | lactation            |
|-------------------|------------------------------|----------|--------------------------------|----------------|-------------------------|--------------------------|----------------------|
| 1999              | ± 8 wks                      | abortion | SE of Spontaneous              | KA             | NO                      |                          |                      |
| 2003              | ± FT                         | L ♀      | VD                             | home           |                         |                          | Failure of lactation |
| 2007              | ± 28wks                      | SB ♂     | CS                             | Private clinic |                         | Wound sepsis             |                      |

**Provisional diagnosis :** patient's name ثلاثي / Age / GPL / complaint in medical terms ( + duration ) / provisional diagnosis / relevant medical problems / relevant surgical operations

# Examples of certain sheets:

## I. Bleeding sheet

Personal history : as general sheet

Complaint: Excessive or Irregular or Excessive irregular vaginal bleeding for how long

Present history:

- Analysis of the complaint:(menorrhagia, metrorrhagia, menometrorrhagia)
  - onset, course ,duration , amount of bleeding (number of pads, clots)
- Analysis of other related gynecological complaints :
  - pain (type,site,radiation,severity,.....)
  - mass (onset, course, duration,site,..)
  - discharge (amount, colour, odour ,itching)
- Analysis of the causes :
  - preceding event e.g. period of amenorrhea, I.U.D. insertion, injectables
  - contact bleeding
  - bleeding from other body orifices, ecchymosis
  - thyroid disorders
  - heart disease (dyspnea ,palpitation ,L.L.O. ,....)
  - hypertension
- Analysis of the Consequences: anemia ( dyspnea, easy fatigability, blurring of vision)
- Analysis of investigations and treatment : U/S, D&C, CBC, coagulation profile
- Review of other systems.

Menstrual, Obstetric, Past, Family history, Diagnosis: as general sheet

## Modifications in a case of postmenopausal bleeding

Personal History: if widow or divorced should be stated

Complaint: vaginal bleeding after ..... years of cessation of menstruation.

Present history:

- Duration of menopause
- Symptoms suggestive of distant metastasis:
  - Lung (cough , hemoptysis,..)      Liver ( rt hypochondrial pain , jaundice )
  - Bone ( aches and pathological fractures )      Brain ( projectile vomiting , headache,...)
  - G.I.T. symptoms ( vomiting , constipation , bleeding per rectum)

## II. Genital prolapse sheet

**Personal history:** as general sheet

**Complaint:** mass protruding from the vulva , sense of heaviness + duration

**Present history:**

- *Analysis of the complaint:*
  - Onset , course , duration,
  - effect of straining and lying down, (mention if the onset was following delivery)
- *Analysis of other gynecological symptoms:*
  - bleeding( menorrhagia)
  - pain ( congestive dysmenorrhea)
  - discharge (leucorrhea)

N.B. these are the triad of pelvic congestion due to prolapse.
- *Analysis of the consequences :*
  - urinary symptoms: frequency, nocturia, dysuria, sense of incomplete evacuation, urine retention, loin pain, pyelonephritis, stress incontinence, inability to complete micturition except after digital reduction of the mass.
  - rectal symptoms: inability to complete defecation except after digital reduction of the mass , constipation , incontinence to flatus or stools ( if associated with complete perineal tear)
  - sexual troubles: dyspareunia
  - backache (traction on uterosacral ligaments in uterine prolapsed)
- *Analysis of the Causes:*
  - precipitating factors: chronic cough , chronic constipation, obesity
  - predisposing factors: symptoms suggestive of weak mesenchyme e.g. hernia, flat foot, varicose v.
- *Analysis of investigations and treatment:* previous repair , use of pessary
- *Review of Other systems:*

**In Obstetric history:** It is important to ask whether her deliveries were difficult and prolonged ended with use of forceps or ventouse, delivery of macrosomic baby

**Menstrual, Past, Family history, Diagnosis:** the same as general sheet



### **III. Infertility sheet**

#### **Personal history** As general sheet plus

- ask about previous marriage
- children from previous marriage
- the age of the youngest child
- husband personal history: age/ occupation/ smoking/ another marriage and the age of the youngest child from the other marriage.

**Complaint:** Failure of conception for ..... years despite of regular marital life

#### **Present history:**

- *Duration of her current marriage:*
- *Analysis of the causes:*
  - **Male factor of infertility:**
    - semen analysis ( results, time) - treatment (nature, duration, result)
    - previous operations (hernia, varicocele) - medical disorders and drugs.
  - **Ovarian factor:**
    - symptoms suggestive of ovulation (regular cycles ,spasmodic dysmenorrhea, premenstrual mastalgia, intermenstrual bleeding ,pain and discharge)
    - hirsutism , oligomenorrhea ,hypomenorrhea (P.C.O.)
    - symptoms suggestive of ovarian failure (hot flushes , nervousness , bony aches)
  - **Tubal factor:**
    - symptoms suggestive of salpingitis ( bilateral lower abdominal pain associated with offensive vaginal discharge, fever and chills)
    - previous abdominal operations that may lead to adhesions
  - **Uterine factor :**
    - previous dilatation and curettage followed by decrease in the amount of menstrual flow ( suggestive Asherman syndrome)
  - **Cervical factor:** vaginal discharge + backache, erosion, cautery, cervical amputation
  - **Sexual factor:** Fequency per week, Dyspareunia ( superficial or deep ), vaginismus, effluvium seminis
- *Analysis of investigations and treatment :*
  - Investigations as: hormonal profile, hystrosalpingography , sonohystrography, premenstrual endometrial biopsy, folliculometry, laparoscopy ( mention the results )
  - Induction of ovulation : tablets, injections, how long,
  - History of Tuboplasty
  - Previous ART (IUI, ICSI)
- *Review of other systems:* General or Endocrine as thyroid dysfunction, DM, TB, Hyperprolactenemia

**Menstrual, Obstetric, Past, Family histories and Diagnosis:** as General Sheet.

#### **IV. Primary Amenorrhea sheet**

**Personal history:** As general sheet

**Complaint:** Non occurrence of menstruation Or Absence of menstruation

**Present history:**

- *Analysis of the complaint*            a case of primary amenorrhea till age of ....
- *Development of secondary sexual characters :*      breast development, pubic hair, axillary hair
- *Analysis of the cause:*
  - Hypothalamic cause: psychological disorders, stress, anosmia, head trauma, drugs
  - Pituitary causes: galactorrhea , symptoms suggestive of increased intra cranial tension, visual field changes
  - Ovarian causes: hirsutism, deepening of voice , pelvi-abdominal mass
  - Uterine causes: History suggestive of T.B.( night fever ,night sweat, loss of weight, loss of appetite)
  - Out flow obstruction (cryptomenorrhea): cyclic lower abdominal pain , progressive abdominal swelling, if +ve ask about urine retention .
  - General causes: thyroid dysfunction, DM, severe debilitating disease
- *Analysis of investigations and treatment:*
  - Hormonal profile, ultrasound, IVP, MRI
  - Progesterone withdrawal
  - E .+P. withdrawal
- *Review of other systems*

**No menstrual or obstetric history**

**Family history:** ask about similar condition in the family (her sisters)

**Past history and Diagnosis:** as general Sheet

## **Modifications in case of 2ry amenorrhea**

**Personal history:** as above

**Complaint:** cessation of menstruation for ....(how long)

**Present history:**

- *Exclusion of pregnancy:*
  - pregnancy symptoms (nausea, vomiting, abdominal enlargement)
  - pregnancy test
- *Analysis of the last pregnancy event:*
  - post partum hemorrhage ( amount , cause, blood transfusion )
  - puerperal sepsis ( fever , offensive lochia)
  - in case of abortion ask about ( fever , D&C, offensive discharge )
- *Hormonal treatment:* e.g. injectable contraception
- *Hypothalamic cause:* psychological troubles
- *Pituitary cause:*
  - galactorrhea
  - symptoms suggestive of pituitary adenoma ( increased I.C.T. , visual field changes)
- *Ovarian cause :*
  - hirsutism , deepening of voice , pelvi-abdominal mass
  - hot flushes , nervousness, bony aches
- *Uterine cause:*
  - Symptoms suggestive of T.B.
  - history of D&C (over curettage suggestive of Asherman syndrome)
- *General cause:*
  - As 1ry amenorrhea

**Menstrual history** taken about menstrual condition before amenorrhea