4th EDITION 2022

CLINICAL ROUNDS IN OBSTETRICS & GYNECOLOGY

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Preface to the 4th edition

Since the first edition in 2003, this book has been updated several times adding more information, tables & figures or removing outdated materials. In this *4th edition* I preferred to change the title from "CSAE TAKING AND CLINICAL METHODS" to **"CLINICAL ROUNDS IN OBSTETRICS AND GYNECOLOGY**" as this new title will be more appropriate to the new contents.

This 4th edition includes 83 figures and 23 tables to facilitate understanding of the contents and memorizing the knowledge obtained.

The updates in this new 4th edition will include the 2019 FIGO updates in classification of abnormal uterine bleeding, and fibroid subclassification. The pelvic organ prolapse quantification system (POP-Q) of the international continence society (ICS) will be added. Also, will include several links & QR-codes for more explanation of the contents by videos, animation, or live lectures. In addition, a new chapter designed for the residents of obstetrics and gynecology explaining how to write the diagnosis on the patient's sheet in the light of the updates of terminology especially regarding abnormal uterine bleeding and pelvic organ prolapse.

I wish this book will be useful for the undergraduates as well as the postgraduates learning clinical obstetrics & gynecology.

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Preface to 3rd edition

The road to right diagnosis should always pass through the traditional way of careful history taking and systematic examination before resorting to costly, sophisticated, and sometimes confusing investigations. Although the medical library is rich in books dealing with clinical methods in medicine and surgery, it is unfortunately deficient in simplified books about clinical methods in obstetrics and gynecology. This book has been written in a simplified manner aiming to revive the important patient's communication and examination skills for both undergraduate students as will as the postgraduate colleagues attempting higher qualification in obstetrics and gynecology. This book has two main sections, obstetrics case taking and gynecological case taking sections. Each section displays a simplified yet complete way for history taking, clinical examination, diagnosis, and differential diagnosis. A self-assessment chapter was added to solidify the gained knowledge in form of multiple-choice questions (MCQs), essay questions and clinical cases. Thanks to Allah for helping us to go through and finish this work and we promise to keep updating, revising, and modifying this book in the next editions.

The authors

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2016

Preface to the 2nd Edition

Five years have passed since the first edition of this book. The feedback was satisfactory with some useful comments from some of my colleagues and students. In this second edition I tried to improve the text regarding rearrangement of some items, deleting some unnecessary paragraphs. I also have added some tables, many new figures, photographs and diagrams to help understanding and imagination of the clinical examination and diagnosis. I hope this edition be satisfactory to my students and colleagues.

Finally I want to express my thanks to my professors, colleague, and junior colleagues for their faithful advice & help during production of this edition.

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Domyat in Friday; January 23, 2009

Preface to the First Edition

The motive that urged me to write these notes on CASE TAKING & CLINICAL METHODS is the need that I -myself -felt to this knowledge throughout my career as an undergraduate as well as a postgraduate medical student.

Although the medical literature is rich in books dealing with clinical methods in surgery & medicine, yet unfortunately it is lacking a simplified book about clinical methods in obstetrics & gynecology.

I designed these notes so that the ultimate goal of dealing with a case (i.e. the correct diagnosis) is always put in mind. A chapter for the differential diagnosis of the common gynecologic complaints & clinical findings is added hoping to facilitate the achievement of the main goal.

I added some plates following obstetric & gynecologic case taking containing some photographs & diagrams to facilitate the understanding of the examination procedures.

I hope that these notes be of value for both the undergraduate as well as the postgraduate students preparing for clinical exam in obstetrics & gynecology.

I believe that nothing human is complete, but this is a trial to help my students & colleagues wishing the reward from ALLAH.

Finally, I would like to express my thanks to all who had taught me the art of obstetrics & gynecology.

Osama M. Warda, MD
Dumyat, May 2003

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Obstetric Case Taking

Introduction:

The science of obstetrics is that branch of medicine that **deals with more than a human being at a time; namely the pregnant-parturient woman and her fetus(s).** This character is unique for that branch of medicine.

The **objective** of a physician when dealing with his/ her patient is to ***"treat"*** her. To achieve that goal, he (she) must first reach the correct ***diagnosis*** of her condition, then matches-in his (her) mind- that diagnosis with the available therapeutic options according to the knowledge he/she gained throughout his /her scientific career.

The tools by which the physician reaches the appropriate diagnosis are ***history taking, physical examination, and required investigations***. Case taking is that part which includes history taking, physical examination and clinical investigations.

THE OBSTETRIC DIAGNOSIS

- The final goal of the obstetric case taking is to reach the ***obstetric diagnosis.***
- The component of the obstetric diagnosis includes the following items in sequence:

Gravidity, parity, duration of pregnancy (in weeks), fetal (lie, presentation, position, engagement), complications of the current pregnancy, previous diseases or surgical operations that may affect the management of pregnancy or delivery.
All will be discussed in detail below

1- **Gravidity**: the number of pregnancies-including the current one- regardless the outcome; whether delivery or abortion. Abnormal pregnancies e.g., molar & ectopic pregnancies are included.

2- **Parity**: the number of deliveries; that's to say those pregnancies that had been terminated by whatever means *beyond 20 gestational weeks*, regardless the fetal outcome whether living or dead, single, or multiple.

3- **Duration of the current pregnancy:** it is calculated in *weeks* using different methods:

A- History Taking

1- Known LNMP. 2- Known single coitus date
3- Known date of Embryo transfer in IVF. 4-Known date of Queckening
5- Known early ultrasound

B. Clinical Examination: (see later)

1- Bimanual exam in early pregnancy. 2-Fundal level
3-Symphysis Fundal Distance. 4-Abdominal girth, and fetal tone.

C- Imaging: Ultrasound is the best, and safest. X-ray is no longer used.

Naegele's formula:

- used when the 1st day of the last normal menstrual period (LNMP) is certainly known. The expected date of delivery (assuming that human pregnancy is 40 weeks=280 days) is calculated by adding 7 days to the days & 9 months to the month. **Example**: if the woman informed you that the 1st day of the last normal menstrual period was the 2nd of January 2022, the expected date of delivery (EDD) will be the 9th of October 2022.
- The gestational age at the day of case taking can be calculated by *subtracting the remaining days from the calculated EDD.* From the above example, if today is August 2nd ,2022, the remaining days will be [9-10-2022 minus 2-8-2022] =68days=9weeks+5days, thus the gestational age today will be 30weeks+2days.

Known Single coitus:

- EDD= date of single coitus + 265 day. The duration of pregnancy can be calculated from the EDD as before.
- Example: the husband was abroad, he came to cairo as transit on 20/1/2022. Sexual relation occurred. The wife reported that she had missed 3 or 4 periods and she felt pregnant, confirmed by positive home pregnancy test.
- EDD= 20/1/2022+ 265days=14/10/2022.
- GA is calculated accordingly as before.

Known date of Embryo transfer (ET) in IVF:

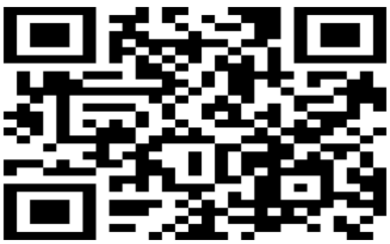
- GA= (date of ET -7 days)+ 9 months. EXAMPLE :Date of ET was at 20/4/2021 . EDD= (20/4/2021-7 days)+ 9 months = 13/1/2022.
- The GA can be calculated from the EDD as before.

Date of Queckening :

- Knowing the exact dat of quecknenig; we know the LMP (APPROXIMATELY) by sbtracting 18 weeks in multipara or 20 weeks in primigravida from the date of today. Accordingly, the EDD and GA can be calculated.

Knowing an early ultrasound:

- If the patient has an ultrasoud image early in her current pregnancy, the EDD, and GA can be easily known by correlating the GA recorded in the ultrasound to the date of that ultrasound exam. **How to calculate gestational age.**



4- Lie: the fetal lie means the *relationship between the longitudinal axis of the fetus to that of its mother*. Thus, we have ***longitudinal*** *lie* if both are in line with each other, ***transverse*** *lie* if they are perpendicular to each other, and *oblique lie* if the lie was neither longitudinal nor transverse. [figure 1-1]

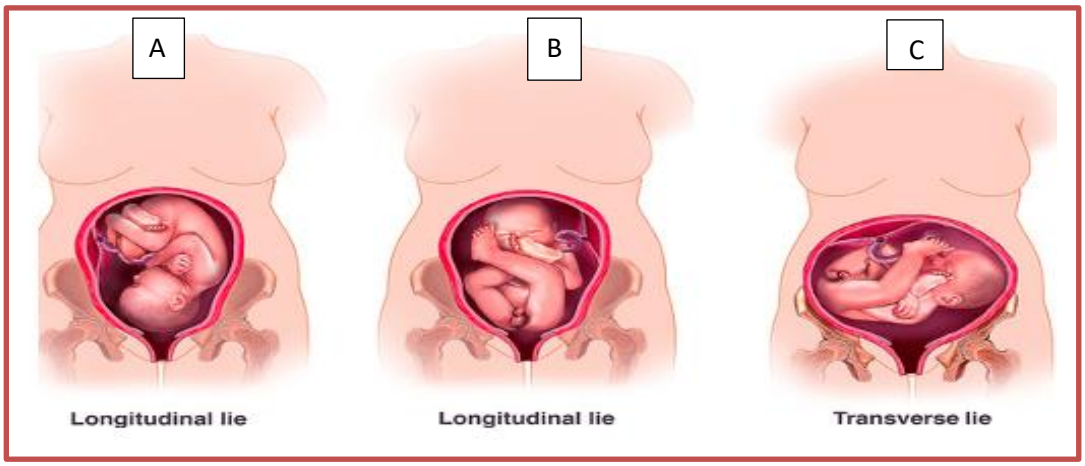


Figure (1-1): Fetal lie & presentation

5- Presentation: it means *which part of the fetus is in relation (i.e., presents) to the pelvic inlet & first felt during vaginal examination*. The fetus may present with its **head** (i.e., *cephalic presentation*), or by its **buttocks** with or without the feet (i.e., *breech presentation*), finally, if the lie is **transverse**, the fetus will present with its shoulder (i.e., *shoulder presentation*). The dominator is the bony landmark of the presenting part. [A, B, C respectively– figure 1-1]

6- Position: fetal position; on *abdominal* examination *means the position of the fetal back in relation to the anterior abdominal wall of the mother whether anterior or posterior to the right or to the left.* The 4 standard positions are left anterior (LA), right anterior (RA), right posterior (RP), or left posterior (LP) in sequence. On *vaginal* examination, *fetal position depends on the location of the dominator of the presenting part in relation to the pelvic sidewalls whether anterior, posterior, to the right or to the left.*

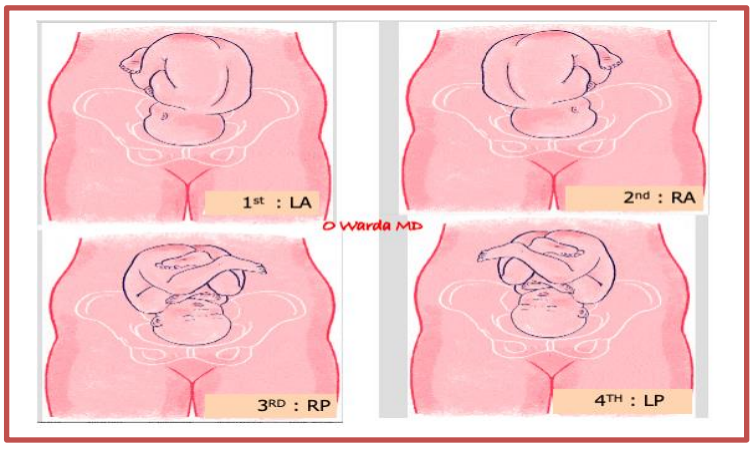


Figure 1-2: The 4 standard fetal positions

7- **Engagement**: It *means passage of the widest transverse diameter of the presenting part through the plane of the pelvic inlet.* The widest transverse diameter of the fetal head is the bi-parietal diameter (the distance between both parietal eminences= 9.5cm) and it is the transverse engaging diameter in all cephalic presentations. However, each cephalic presentation has its own longitudinal engaging diameter according to the attitude of the fetal head (LINK).

The plane of the pelvic inlet is that plane passing through the following points ***from posterior forward***; sacral promontory- alum of the sacrum-sacroiliac joint-iliopectineal line-iliopectineal eminence- upper border of superior pubic ramus-pubic crest and upper border of the symphysis pubis to the other side.

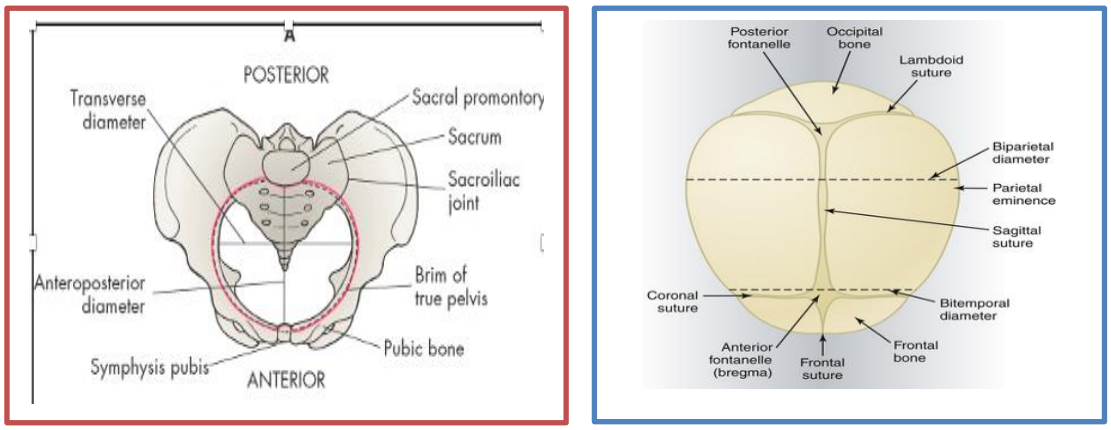


Figure [1-3]: Plane of pelvic brim & biparietal diameter

8- **Complications of the current pregnancy**: for example, pre-eclampsia, ante-partum hemorrhage, premature rupture of fetal membranes, fetal malformation, fetal death, Rh- iso-immunization…etc

9- **Previous diseases or surgical procedures that can affect the management of the current pregnancy:** for example, maternal cardiac disease, diabetes mellitus, uterine anomalies or fibroids, previous uterine scar,…..etc

Example of the obstetric diagnosis of a lady with the following data:

The current pregnancy is the 4th one & of 36 weeks gestational age with single living fetus. She had 2 deliveries; the last was by cesarean section (CS) & one abortion. She had rheumatic heart disease [all the mentioned data were obtained from history taking alone]. Examination revealed that the fetal head was towards the pelvic inlet, and the fetal back was anterior and to the left of the maternal anterior abdominal wall.

4th **gravida**, 2nd **para**, pregnant **36weeks**, longitudinal **lie**, cephalic **presentation**, left anterior **position**, non-engaged head, rheumatic heart disease, previous cesarean section.

From the above introduction, we can conclude that the requirements for proper ***obstetric diagnosis*** include the following items (items of obstetric case taking):

1- HISTORY TAKING
2- CLINICAL PHYSICAL EXAMINATION
3- BEDSIDE URINE ANALYSIS FOR PROTIEN & SUGAR.

HISTORY TAKING

- We used to start the obstetric history taking with ***gravidity & parity.***
- Items of history taking include the following:
  (1). Personal history, (2). The complaint, (3). Menstrual history, (4). Obstetric history, (5). Past history, (6). Family history, and (7). Present history.

PERSONAL HISTORY:

A. ***Name:*** the full name of the patient is asked for to call her with her name during history taking for familiarity, and also for registration purposes.

B. ***Age:*** most the obstetric patients fall in one age group; namely, the *childbearing* period (< 16 years & > 39years). Elderly primigravida (≥35years), young primigravida (<16years), or grand multipara (≥ para5), are considered high-risk pregnancy.

C. ***Residence:*** the full address of the pregnant lady should be asked for & registered. This will be of value during follow-up of pregnancy as it enables the obstetrician to know how far she is from a well-equipped hospital, and from the places that gives care to pregnant women. Her telephone (if she has) or the nearest telephone should also be registered as it may be needed for instructions that may be given to her during the antenatal period as well as the postpartum period.

D. ***Occupation:*** knowing the occupation of the pregnant lady gives information about the nature of physical, mental, and social stresses that may influence pregnancy outcome. It also gives an idea about the family income and hence the socio-economic standard.

E. ***Marital status & number (and sex) of living children:*** In our locality almost, all pregnancies result from legal marriages. The duration of marriage (and sometimes number of prior marriages) in relation to the number of living children give an idea about the magnitude of the problem of "*female efficacy*". On the other hand, this may give an idea about the daily burden that she is subjected to.

F. ***Special habits:*** there are 3 main special habits that are harmful to the fetus; **smoking** that may cause intrauterine growth retardation (IUGR), **alcohol ingestion** that may result in *fetal alcohol syndrome* with several fetal anomalies, and **opioid addiction** that result in neonatal withdrawal symptoms.

G. ***Personal history of the husband.*** (Name, age, occupation, special habits, other marriages).

The following is an example for the personal history:

Primigravida, nullipara, named Nada Ahmad Mahfouz, 23 years old, from al-Galaa street, Dumyat, schoolteacher, married since november,20,2021, with no special habits. The husband's name is Mohammad Ahmad Ali, 32 years old, carpenter, and cigarette smoker.

COMPLAINT:

- The 1st complaint in any obstetric case should be cessation of menstruation since the LNMP.
- This is followed by the main complaint(s) that brings the patient to hospital.
- Complaints should be in the patient's own words without using scientific terms.
- Complaints (if more than one) should be arranged chronologically (i.e. according to the onset of their occurrence).

The following is a module for the complaint of a pregnant patient with the LNMP started at July,25,2002 & she came to hospital because of ante-partum hemorrhage.

- Cessation of menstruation since the last normal menstrual period which started at July, 25,2022
- Passage of blood per vagina 2 days ago.

⇒ If the LNMP was uncertain, we can say *"cessation of menstruation (.....) Months ago"*.

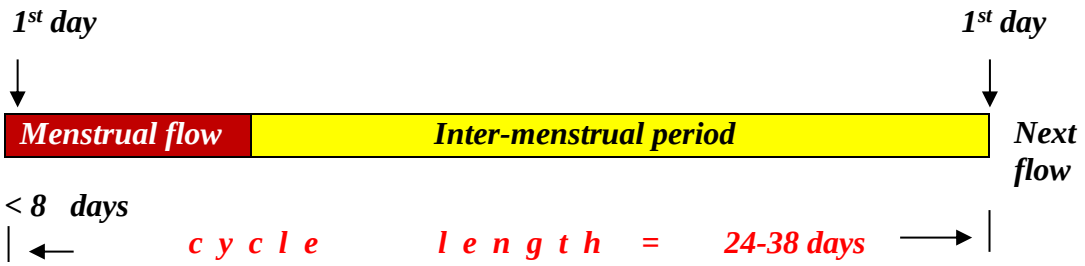
MENSTRUAL HISTORY:

The items of menstrual history include the following items in sequence:

1) ***Menarche***: It is the 1st menses in the woman's life. **Age** of menarche should be mentioned. Normal age of menarche is 9-16 years.
2) ***Cycle rhythm:*** whether regular or irregular. Regular cycles are those recurring at equal periods of time.
3) ***Cycle length:*** It is the duration from the 1st day of the cycle to the 1st day of the next cycle. The normal cycle length simply ranges from 24 to 38 days.
4) ***Duration of menstrual flow:*** It is the period during which menstrual blood flows through the vagina. The normal duration of menstrual flow ranges from < 8 days.

Table (1-1): FIGO parameters of menstrual cycle. The shaded rows are the abnormal.

Parameter	Normal	Abnormal	☑
Frequency	Absent (no bleeding) = amenorrhea		☐
	Infrequent (>38 days)		☐
	Normal (≥24 to ≤38 days)		☐
	Frequent (<24 days)		☐
Duration	Normal (≤8 days)		☐
	Prolonged (>8 days)		☐
Regularity	Normal or "Regular" (shortest to longest cycle variation: ≤7-9 days)*		☐
	Irregular (shortest to longest cycle variation: ≥8-10 days)*		☐
Flow Volume (patient determined)	Light		☐
	Normal		☐
	Heavy		☐
Intermenstrual Bleeding (IMB) Bleeding between cyclically regular onset of menses	None		☐
	Random		☐
	Cyclic (Predictable)	Early Cycle	☐
		Mid Cycle	☐
		Late Cycle	☐
Unscheduled Bleeding on Progestin ± Estrogen Gonadal Steroids (birth control pills, rings, patches or injections)	Not Applicable (not on gonadal steroid medication)		☐
	None (on gonadal steroid medication)		☐
	Present		☐



The normal values of menses

5) *Character of flow*: (**determined by the patient***);* the characters of menstrual flow regarding **amount**, **color**, and **odor** should be mentioned. The amount is regarded normal if the patient mentioned that it was as much as her previous cycles (normally not more than 80 ml total volume). Excessive flow can be indicated by presence of *clots*. The color of menstrual flow is usually dark red. Bright red color may indicate excessive flow especially if associated with clots.

6) ***Dysmenorrhea:*** It is *a pain related to menses severe enough to prevent the woman from doing her daily activities*. Presence or absence of dysmenorrhea should be mentioned. Dysmenorrhea may be primary or secondary. The tolerable pain at menses is called menstrual *molimina*.

7) ***The intermenstrual period (IMP):*** It is the period *from the last day of flow to the 1st day of the next flow.* The presence or absence of abnormal **pain**, **bleeding**, or **discharge** should be asked for. Normally there should be **no** intermenstrual bleeding, pain, or abnormal discharge.

8) ***The last normal menstrual period:*** The 1st day of the last normal menstrual period should be asked for. To be certain that the last menstrual period was normal it should fulfill the following criteria:

a. It should be of normal all characters.
b. It should be preceded by 3 consecutive normal cycles.
c. It should **not** be preceded by using **hormonal** contraception.

NB. - The expected date of delivery (EDD) is calculated and mentioned before.

The following is an example of a normal menstrual history:

> Menarche was at 13. Cycles were regular, recurring every month. Menstrual flow was of average amount, lasting for 5 days, dark red color & no specific odor. No associated dysmenorrhea. IMPs were free from pain, bleeding, or discharge. The LNMP was on December 12, 2021. EDD on September 19, 2022

Table; [1-1a]: new and old terminology

New terminology	Old terminology	Remarks
Heavy menstrual bleeding (HMB)	**menorrhagia Metrorrhagia Hypermenorrhea menometrorrhagia**	**Increased duration or amount of menstrual flow or both**
Infrequent menses	**oligomenorrhea**	**Recurs every 39 days or more**
Frequent menses	**Polymenorrhea**	**Recurs every 23 days or less**
AUB-O	**DUB**	Osama Warda

OBSTETRIC HISTORY:

The items of obstetric history include the following:

1. *Gravidity & parity*. (See before for definitions)

2. *Full term normal deliveries*: we mention the number, order, and outcome of each. By "full term" we *mean pregnancies of gestational age of completed 37 weeks or more*. By "normal delivery" we mean *spontaneous expulsion of a single viable (living ≥37weeks) fetus, presented by the vertex, through the natural birth canal, within a reasonable time (3-24 hours), without aid (except for Pitocin and/or episiotomy), and without complications to the fetus or the mother*.

3. *Preterm labors:* we mention the number, order & the outcome of each. By **"preterm labor"** we mean *pregnancies that had been terminated with their gestational ages ≥20weeks & <37 weeks despite the method of termination & the fetal outcome.*

4. *Stillbirth:* Stillbirth is the delivery of a **dead** fetus *(i.e. the gestational age is 20 weeks or more*). It may be ante-partum fetal death, or intra-partum fetal death. The number & order should be mentioned.

5. *Difficult labors:* The number, order & the outcome of each should be mentioned. By "*difficult labors"* we mean those which were **not** fulfilling the criteria of normal labor. Such as.

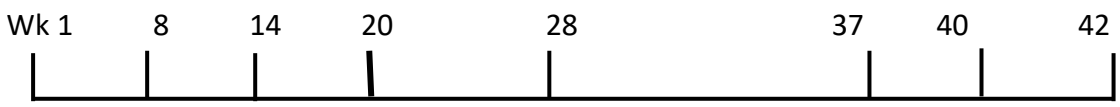
- **Being not spontaneous** (e.g., operative delivery like vacuum or forceps),
- **Being prolonged than 24 hours** (=prolonged labor), or shorter than 3 hours (=precipitate labor),
- **The fetal outcome** was more than one (twins or more), or the fetus was not presenting with the vertex (e.g., breech presentation).
- **Association of maternal complications** (e.g. perineal lacerations, rupture uterus,etc) **or fetal birth injuries.**

6. *Cesarean sections:* Cesarean section is the delivery of fetus or fetuses (≥20 weeks) through *an abdominal and uterine incisions*. The number, date, indication & complication of cesarean sections as well as the type whether lower segment or upper segment should be registered.

7. *Last delivery date:* should be mentioned.
8. *Abortions:* It is the *interruption or termination of pregnancy before 20 weeks' gestation*. The number, order, type (whether 1st or 2nd trimester). The onset (whether spontaneous or induced), the gestational age of each, the mode of termination (spontaneous, surgical evacuation, or medical evacuation), all should be mentioned. The date of last abortion is also mentioned.
9. Previous pregnancies; regarding complications.

10. *Previous Puerperia:* The **puerperium** is *the period following delivery or abortion*. If the event was delivery, the duration of the puerperium is the 6-8 weeks. If the event was 1st trimester abortion, the puerperium is the 2-4 weeks following abortion. The puerperium of the 2nd trimester abortion is approximately equal to that of delivery. The puerperium may be complicated by **pyrexia**, **sepsis**, or **bleeding**.

Nomenclature:



☒ *Early pregnancy*: gestational age < 8 weeks.
☒ *1st trimester*: gestational age 1- 14 weeks
☒ *2nd trimester*: gestational age 14- 28 weeks
☒ *3rd trimester*: 28-42weeks

- ☒ *Medico-legal viability of pregnancy*: It is the gestational age after which the fetus is officially considered a **citizen** e.g., regarding birth and death certificates. It is 28 weeks according to Egyptian law. It is only of medicolegal importance with no obstetrical importance.
- ☒ *Obstetric viability*: when the gestational age is completed 37 weeks. *It means that when the fetus is born after that age it can live unassisted extra-uterine life.* Delivery of a fetus with gestational age between 20-36 $^{+6}$ weeks is termed **pre-term birth**.
- ☒ *Term pregnancy*: is that with a gestational age 37-42 weeks. **Post-term** pregnancy is that with a gestational age of more than 42 weeks. When pregnancy is of gestational age 40-42 weeks it may be termed **prolonged pregnancy**.

The following is an example of obstetric history.

> 4th gravida, 2nd para. 1 FTND resulted in 1 living male. No preterm labors, no stillbirths, no difficult labors. One cesarean section (the 2nd pregnancy) for breech presentation, it was LSCS resulted in 1 living male, was 3 years ago & uncomplicated. One 1st trimester abortion of 8 weeks duration started spontaneously & terminated by surgical evacuation. Last delivery since 2/07/2021, last abortion since 14/06/2018. Previous pregnancies were apparently free, previous puerperia were apparently free.

NB. Some practitioners use a 4-digit parity system to designate the **T**erm deliveries, **P**reterm deliveries, **A**bortions, and **L**ive births (**TPAL** system). For example, G2P1001 indicates gravidity = 2, parity 1001= 1 prior term delivery, no preterm, no abortions, and 1 living.

PAST HISTORY:

1- *Past history of medical disease:* such as diabetes mellitus, hypertension, bilharziasis, tuberculosis, irradiation, drug sensitivity.
2- *Past history of surgical operations:* the nature& date of operation should be determined.
3- *Past history of gynecologic operation:* the nature& date of operation should be determined.
4- *Past history of contraception:* type of contraceptive method, duration of use, and complications. Some prefer to add the recent use of contraception (within 3 months before pregnancy) to the menstrual history instead of the past history. Contraception history is **always** mentioned in menstrual history in gynecological case taking.

FAMILY HISTORY:

1- *Family history of hereditary disease* e.g., diabetes, hypertension, chromosomal anomalies.

2- *Family history of consanguinity*.
3- *Family history of twinning* for both the lady & her husband's family.
4- *Family history of familial non-hereditary diseases* e.g., rheumatic heart disease, tuberculosis (those diseases occur in common bad socioeconomic conditions).

PRESENT HISTORY: The present history of an obstetric case consists of the following items:

1. Start with 'cessation *of menstruation* since the LNMP, or cessation of menstruation……months ago (if the LNMP was uncertain).
2. Ask for *early pregnancy symptoms*: such as nausea, vomiting, sleepy attitude, craving for certain types of foods, frequency of urine,etc.
3. *Documentation of early pregnancy:* by pregnancy test (urine, or blood test), or by ultrasound. The date & the result of each should be mentioned.
4. *Quickening:* it is the first maternal perception of fetal movement. The date when it is perceived should be asked for. Quickening occurs in primigravida at 18-20weeks, and at 16-18 weeks in multipara.
5. *Analysis of the complaint:* regarding its onset, course, duration, what increase, what decrease, special characters and associated symptoms.
6. *Symptoms related to high-risk pregnancy:* e.g. symptoms suggestive of **preeclampsia** (severe headache, blurring of vision, epigastric or right hypochondrial pain, swelling of lower limbs, upper limbs, or the face). Ask for vaginal bleeding (**antepartum hemorrhage**) , for escape of watery fluid per vagina (**PROM**). Ask also for **pathological pain**.
7. *Symptoms of approaching labor:* such as lightening (i.e. relief of upper abdominal symptoms), pelvic heaviness, increased mucous vaginal discharge, passage of Shaw (a mucous plug tinged with blood), increased frequency of micturition, and false labor pains (infrequent abdominal colicky pains that can be relieved by simple analgesics).
8. *Related GIT & urinary symptoms.* The following is an example of the **present history** of a patient with ante-partum hemorrhage:

The condition started by cessation of menstruation 8 months ago, followed by early pregnancy symptoms in the form of nausea, vomiting & increased desire for sleep. One week following the missed period the patient had undergone urine pregnancy test which revealed positive. Two months later, she had had abdominal ultrasound examination & she was informed that she is pregnant with a single living fetus of 3 months duration. Quickening was perceived 2 months following the ultrasound examination. The condition was associated with passage of blood per vagina one week ago. The onset of bleeding was sudden and was not precipitated by physical exertion nor intercourse. The bleeding started with considerable amount, associated with small blood clots, and of bright red color. The bleeding was not associated with abdominal or back pain. It continued for about one hour & stopped spontaneously with bed rest. The condition is not associated with symptoms of pre-eclampsia or escape of watery fluid per vagina. The condition is not associated with symptoms of approaching labor. The condition is not associated with urinary symptoms apart from frequency, and there were no associated gastro-intestinal symptoms.

OBSTETRIC CASE TAKING OF SPECIAL CASES

Some examples of obstetric case taking are shown as follows.

1. Hypertension in pregnancy
2. Diabetes mellitus in pregnancy
3. Heart disease in pregnancy
4. Previous cesarean section
5. Antepartum hemorrhage
6. Rhesus isoimmunization

HYPERTENSION IN PREGNANCY

Personal H.: as general

Complaint: coming for antenatal care as she has hypertension with pregnancy.

Menstrual H, Obstetric H, Past H., and **Family H.:** all as general (see before)

Present H.: The usual items, then ask about.

1. Headache: onset, site, character, and duration
2. Severe vomiting
3. Blurring of vision
4. Epigastric or right hypochondrial pain
5. Edema of lower limb or hands or face
6. History of chronic renal disease or proteinuria.
7. History of convulsions
8. Results of investigations that had been done

DIABETES MELLITUS IN PREGNANCY

Personal H.: as general

Complaint: coming for antenatal care as she has DM with pregnancy.

Menstrual H, Obstetric H, Past H., and **Family H.:** all as general (see before)

Present H.: The usual items, then ask about.

1. First known to be diabetic; during the current pregnancy (gestational DM) or previous pregnancies, or before pregnancies (frank DM)
2. Treatment of DM in preconception period
3. Symptoms of DM; polyuria, polydipsia, polyphagia.

4. Treatment of DM; diet control, insulin therapy (type of insulin, dose in units or CC, number of shots / day)
5. Last glucose testing; fasting & 2 hour postprandial
6. Urine testing for sugar & acetone.
7. Obstetrical complications of DM; Hypertension headache, edema , proteinuria, polyhydramnios or fetal macrosomia, urinary tract infections.
8. Vaginal discharge (moniliasis); amount, color, odor, itching.

HEART DISEASE IN PREGNANCY

Personal H.: as general

Complaint: coming for antenatal care as she has heart disease with pregnancy.

Menstrual H, Obstetric H, Past H., and **Family H.:** all as general (see before)

Present H.: The usual items, then ask about.

1. Onset of cardiac problem; congenital, rheumatic, hypertensive or ischemic.
2. Symptoms of heart disease:
   a) Pulmonary congestive symptoms; (dyspnea, cough, expectoration [amount-odor-color-consistency], orthopnea, or nocturnal dyspnea)
   b) Systemic congestive symptoms; (dyspepsia, right hypochondrial pain, yellowish discoloration of sclera, ascites, LL edema)
   c) Chest pain: (site, type, what increases, what relieves, its radiation)
   d) Palpitation; regular or not
   e) Low cardiac output symptoms; (dizziness, blurring of vision, syncope)
3. History of recent rheumatic fever activity
4. Difficulty on swallowing (cardiac enlargement)
5. Treatment of heart failure (taking digitalis)
6. Admission in hospital for how long, investigations done & their results.

Obstetric diagnosis as general but cardiac diagnosis should ideally include the following items:

- Etiology; (rheumatic, congenital, hypertensive, ischemic)
- Anatomy, which valve involved
- Functional; type of lesion (stenosis, incompetence…….)
- Complications; (SBE, Pulmonary hypertension,)
- Cardiac capacity; Grade I, II, III, IV.

PREVIOUS CESAREAN SECTION

Personal H.: as general

Complaint: coming for antenatal care as she has previous …… cesarean section (s).

Menstrual H, Obstetric H, Past H., and **Family H.:** all as general (see before)

Present H.: The usual items, then ask about.

1) History of her previous sections in detail.
    i) Her first CS was in her ….. pregnancy, …. years ago.
    ii) Place (which hospital)
    iii) Indication (important)
    iv) Intra-or-postoperative complications; anesthetic, surgical, need to blood transfusion, postoperative wound infection.
2) Next cesarean section; after how many years, history in details as the 1st CS.
3) Investigations and results.

ANTEPARTUM HEMORRHAGE

Personal H.: as general

Complaint: coming for antenatal care as she has vaginal bleeding.

Menstrual H, Obstetric H, Past H., and **Family H.:** all as general (see before)

Present H.: The usual items, then ask about.

1) Onset of bleeding; following trauma, following intercourse, causeless.
2) Duration of bleeding
3) Course of bleeding; continuous or intermittent
4) Amount of bleeding; spotting, excessive, blood clots? how many diapers?
5) Color of bleeding
6) Need for blood transfusion
7) Single or recurrent attacks
8) Painless or painful; if painful; site, type, what increase, what decrease, radiation of pain
9) Associated symptoms
10) Investigations and results

RH-ISOIMMUNIZATION WITH PREGNANCY

Personal H.: as general

Complaint: coming for antenatal care as she is Rh –negative and has repeated IUFD.

Menstrual H, Obstetric H, Past H., and **Family H.:** all as general (see before)

Present H.: The usual items, then ask about,

1) When she first knew that she is Rh-negative? During pregnancy or in-between pregnancies?
2) Intake of Rh immunoglobulin?
3) History of neonatal jaundice, or history of admission to neonatal unit.
4) History of neonatal phototherapy or exchange transfusion
5) History of neonatal or intrauterine fetal death
6) History of hydrops baby
7) History of performing serum Rh- antibody titer estimation and its results
8) Ultrasound results
9) Need for amniocentesis or intrauterine transfusion?
10) Investigations and results.

CLINICAL EXAMINATION

Components of clinical examination of an obstetric case are:

1.General examination. 2. Abdominal examination.

3.Obstetric maneuvers. 4. Vaginal exam in an obstetric case.

5.Bedside urine analysis for protein & sugar.

GENERAL EXAMINATION

1- Gait: By gait we mean the *type of walking*. **Limping gait** usually indicates *asymmetrically contracted pelvis* due to the short limb [figure 2-1]. Pelvic contraction is found toward the short limb. **Waddling gait** may be caused by sub-laxation of the pelvic joint ligaments, deeply engaged head in the pelvis, separation of the symphysis pubis, or disease of the hip joint or denervation of corresponding muscles. [QR-Code]

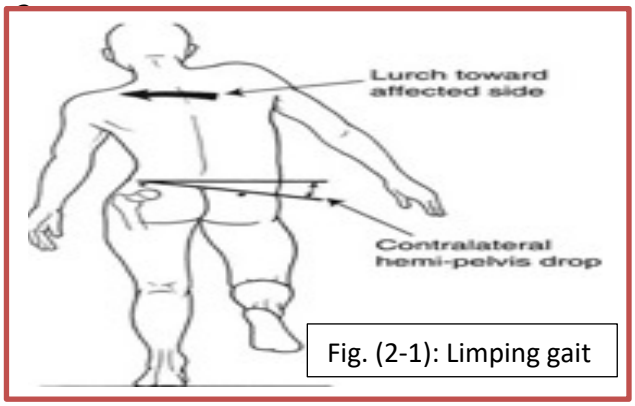


Fig. (2-1): Limping gait

3- Constitution: By constitution we *mean the body configuration whether feminine or masculine.* This can simply be identified by correlation between the *shoulder* girdle & the *pelvic* girdle. In **feminine** constitution, the **pelvic** girdle is **wider** than the shoulder girdle, while in **masculine** constitution the reverse exists. Masculine constitution may indicate some types of pelvises such as **android** pelvis which favors occiput posterior position due to its roomy hind pelvis & narrow fore-pelvis [figure 2-2].

Figure [2-2] feminine & masculine constitutions

4- **Built:** It is the *relationship between the weight & height of the patient*. The most used formula for assessment of built is the *body mass index* (BMI) figure [2-3].

$$\text{BMI} = \frac{\text{the body weight in kilograms}}{(\text{height in meters})2}$$

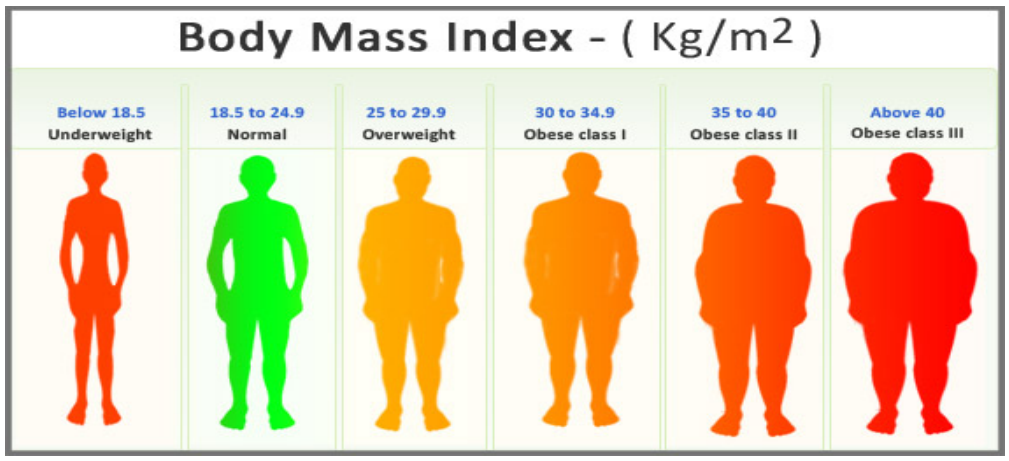


Figure (2-3): Body mass index values

4. Vital signs: including blood pressure, pulse, temperature, and respiratory rate.

[A] Blood pressure (BP): It should be measured for a pregnant woman while she is semi-sitting & on her side (preferably left) to avoid supine hypotension that results from compression of the inferior vena cava by the pregnant uterus. Single measurement is **not** sufficient, but instead, at least 2 measurements 6 hours apart. The *4th Kurtakoff sound* is usually used as the limiting sound. Normal systolic BP ranges between 100-135mmHg, and diastolic BP between 60-90mmHg. *Hypertension in pregnancy is diagnosed if BP is 140/90mmHg or more* or if there is an increase of 30mmHg in the systolic BP or 15 mmHg in the diastolic BP than the baseline blood pressure of the patient during her antenatal follow-up [figure 2-4].

Figure (2-4); measuring BP for pregnant in lateral position

[B] Pulse: Radial pulse is usually used as a standard for measurement of peripheral pulse. During evaluation of radial pulse, the pulse *rate, volume, regularity, equality on both arms,* as well as the *condition of the arterial wall* should be all commented on. Normal range of pulse rate is 60-90 bpm. [figure 2-5]

Figure (2-5); measuring the pulse: digitally, and with pulse oximeter

[C] Temperature: The proper measurement of temperature is by taking the average of 3 measurements at different occasions. Normal temperature measured per mouth ranges from 36.6 to 37.2 C˚. The rectal temperature is higher by about 0.5 C˚, while axillary temperature is lower by about 0.5 C˚.

[D] Respiratory rate: respiratory cycles (cycle = inspiration + expiration) are counted after extraction of the patient's attention to avoid holding her breath. The normal range of respiratory rate is 16-20 cycles/minute.

5. General examination of the patient from the head to the heel: *[Only the positive findings are mentioned]*

[A]. The head: the head is examined for the ***hair line*** (temporal recession denotes androgen excess that may be associated with android pelvis , ***scalp disease, forehead abnormalities*** (frontal bossing may be a stigmata of congenital syphilis) (fig. 2-6), ***eye brows*** (loss of the outer third may result from hypothyroidism, leprosy, or artificial removal), ***sclera*** (for jaundice), ***eyelid*** for anemia, ***cornea*** for abnormalities, ***eye ball*** (protrusion in thyrotoxicosis) the ***cheeks*** for butterfly pigmentation (e.g. chloasma of pregnancy, SLE), ***nose*** (for bridging in congenital syphilis, and abnormal discharge), ***mouth*** (the inner aspect of the lip for anemia, teeth for caries & artificial teeth, the upper surface of the tongue for vitamin -B deficiency [glazed tongue] & undersurface of the tongue for central cyanosis, throat for tonsillitis).

[B]. The neck: The neck is examined for the ***thyroid gland*** enlargement the thyroid is inspected while the patient is swallowing, if any movable mass seen, the patient is asked to protrude her tongue, if the mass moved up with the protrusion of the tongue, it is thyro-glossal cyst, if not it is a thyroid swelling).

Cervical lymph nodes (sub-mental, sub-mandibular, pre-auricular, anterior cervical, posterior cervical). The left supra-clavicular lymph node (Virchow's gland) is of special importance as it enlarges with intra-abdominal malignancy (Troisier's sign).

The neck is also examined for ***congested neck veins*** (they should be examined while the patient is semi-sitting to minimize the pressure gradient between the neck veins & the right side of the heart).

Figure (2-6): Head examination

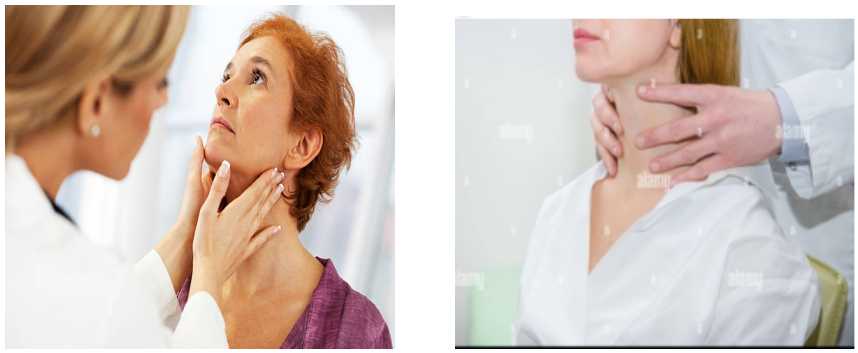


Figure (2-7): thyroid examination

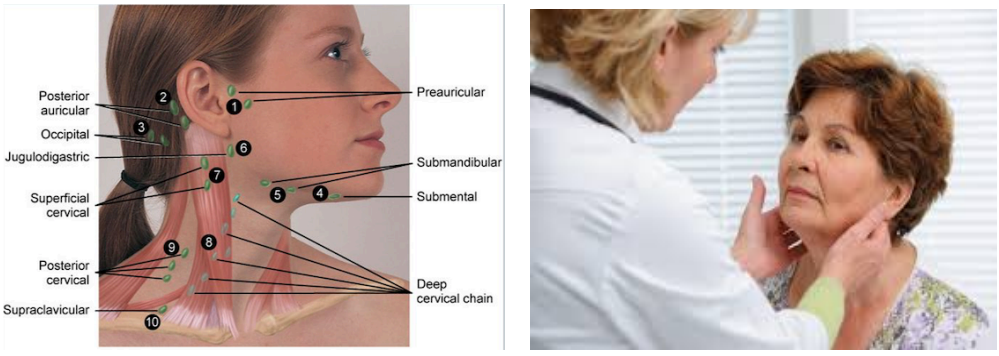


Figure (2-8): anatomy & examination of cervical lymph nodes

C. The breasts: are examined for *symmetry* on both sides, breast *masses*, *signs* of *pregnancy* in primi-gravida, dilated veins. The breast is divided by 2 perpendicular lines crossing each other at the areola into 6 compartments; upper medial (UM), upper lateral (UL), lower medial (LM), lower lateral (LL), retro areolar (RA), and axillary tail (AT).
If any breast mass is found, the axillary lymph nodes must be palpated (both the ipsilateral & contralateral axillae). The nipples are examined for development, retraction, cracking, or discharge.

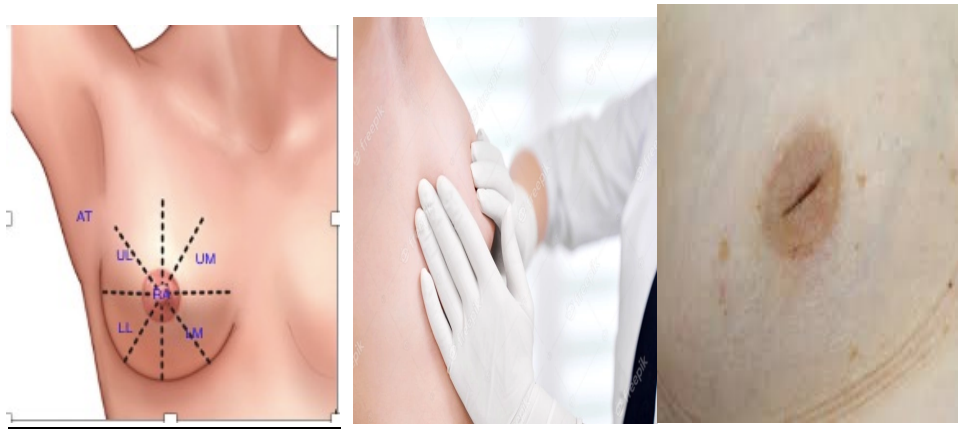


Figure (2-9): Breast compartments, breast exam, nipple retraction.

D. Chest & Heart: The chest is inspected for deformity (e.g., kyphosis is associated with funnel pelvis). Breathing sounds & abnormal wheezes or crepitations should be mentioned if auscultated. Murmurs –if auscultated- should be identified as regards the type, site of maximum intensity, and propagation. If the patient has known chest or heart disease, then complete examination (inspection, palpation, percussion, and auscultation) is mandatory.

Figure (2-10): Kyphotic pregnant woman

E. Extremities & the back: both ***upper*** & ***lower limbs*** are examined regarding *edema* (figure (2-11), table 2-1,), *varicosities*, *ulcers*, or *deformities* & any abnormality should be commented on. ***The spine*** is examined for deformities, defects (e.g. spina bifida), or any other abnormality.

Figure (2-11): Edema during pregnancy; lower limbs, hands, and face

Table (2-1): Clinical degrees of edema.

Degree	Description
1+	**Minimal edema of the pedal & pre-tibial areas**
2+	**Marked edema of the lower limbs**
3+	**Edema of face, hands, lower abdominal wall & sacrum**
4+	**Generalized anasarca with ascites.**

NB. According to the NICE GUIDELINES 2019 edema **is no longer** included in the diagnosis of preeclampsia.

ABDOMINAL EXAMINATION

Abdomino-pelvic Regions & Quadrants:

The abdomen is divided into 9 areas by 4 lines; the lines are 2 mid-clavicular (or mid-inguinal lines), an inter-crestal line (a line passing between the farthest points on the iliac crests), and a line passing through the lower costal margin.

The 9 areas are the *epigastric region, the umbilical region, the supra-pubic (= hypo-gastric) region in the middle. There are other bilateral regions which are 2 lumbar, 2 iliac, and 2 hypochondriac regions* [Fig.2-12]**.**

Another simpler method is to divide the abdomen into 4 quadrants (*upper right, upper left, lower right, and lower left*) using the midline & a transverse line passing through the umbilicus.
The abdomen is fully examined using *inspection*, *palpation*, *percussion*, and *auscultation*. We may go clockwise or anticlockwise.

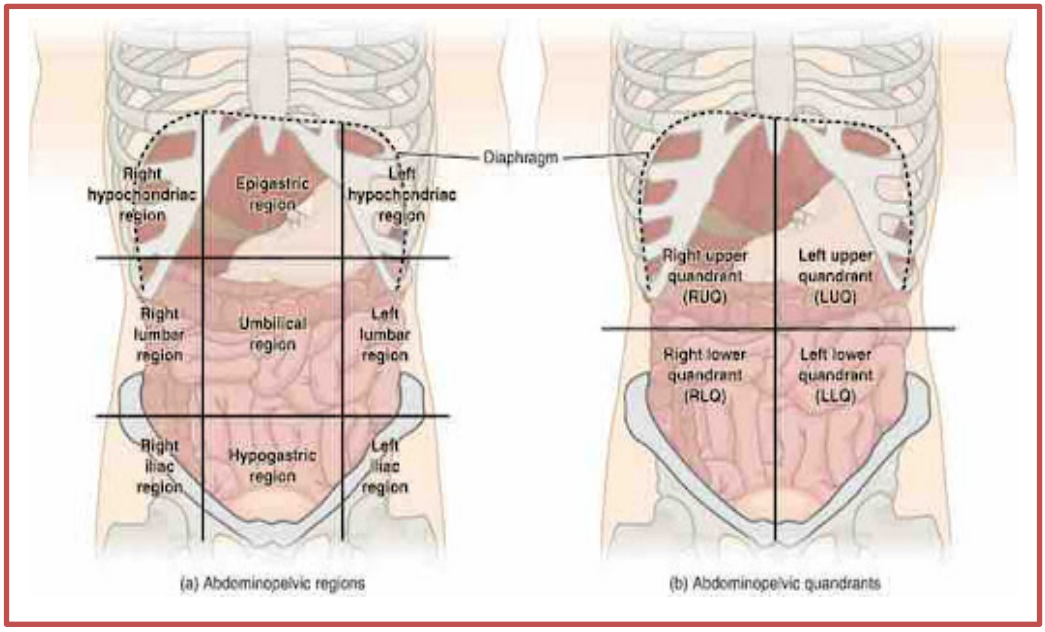


Figure (2-12); regions and quadrants of the abdomen

A- **Inspection:** the following is inspected: [fig. 2-13], [fig.2-14]

1) *Contour*: the longitudinal versus the transverse diameter. *Normal contour* in pregnancy when distended with the longitudinal diameter is longer than the transverse. *Special signs*, such as inspection of fetal movements, presence of sub-umbilical groove in cases of occiput posterior positions, or presence of supra-umbilical groove in cases of breech presentation. The groove corresponds to the area between the fetal head & shoulders when the fetal back is posterior.

Figure (2-13): abdominal contour in pregnancy

2) *Movement of* the anterior abdominal wall with respiration.
3) *Subcostal angle*, whether it is acute, or obtuse due to abdominal distension.
4) *Umbilicus*: position, shape (flat, inverted, everted), hernia, scars, sinuses, pigmentation, dilated veins (e.g. caput medusa).
5) *The skin:* regarding pigmentations (lineal nigra, striae albicans, striae rubra), scars (specify site, type, length, healing pattern), sinuses, dilated veins.
6) *Hernial orifices*; umbilical, para-umbilical, epigastric, inguinal, femoral.
7) *Pubic hair*: the upper border is inspected whether transverse, or triangular.

Figure (2-14); linea nigra(A), striae albicans & rubra (B), and varicosities (C)

B- **Palpation:**

i. ***Superficial palpation:*** the 9 regions are palpated superficially in a clockwise or anti-clockwise pattern for ***tenderness***, ***rigidity***, or ***superficial masses*** *(* the parietal mass becomes more evident, while the intraabdominal mass disappears *when the patient tries to raise her head & trunk unaided with her hands*).

ii. ***Deep palpation:*** includes palpation of abdominal organs for enlargement and obstetric grips (see later for obstetric grips);

- **The liver:** the lower border of the *right* lobe of the liver is palpated in the right mid-clavicular line starting from the right iliac fossa upwards. Normally, it is not felt below the right costal margin, or at maximum one finger below it. The upper border of the right lobe is only detected by percussion due to presence of ribs. The *left* lobe of the liver being uncovered by the ribs, it is palpated in the epigastric region. Normally it is one patient's hand breadth below the xiphi-sternum & is normally soft enough to be difficult to palpate.

- **The spleen:** in a patient with uterine fundus at the umbilicus or higher, we start palpation from the *left iliac fossa* upwards towards the left costal margin. The normal spleen is not palpable below the costal margin. When the uterine size is smaller, we start palpation in the standard method from the right iliac fossa to the left costal margin.

- **The renal angles:** It is the angle between the lateral border of the Sacro-spinalis muscle & the last rib). The left hand of the examiner is always below while the right hand is always above. The renal angles are palpated for tenderness, fullness, or masses. Normally the kidney is not palpable. However, when there is fullness in the renal angle, the kidney swelling is *ballot able.*

- **Palpation of any other mass:** to determine its ***s****ite, **s**hape, **s**ize, **b**orders,* **s**urface, **c**onsistency, ***t****enderness*, ***m****obility* in different axes, ***s****kin* over it, ***s****urrounding* tissues.

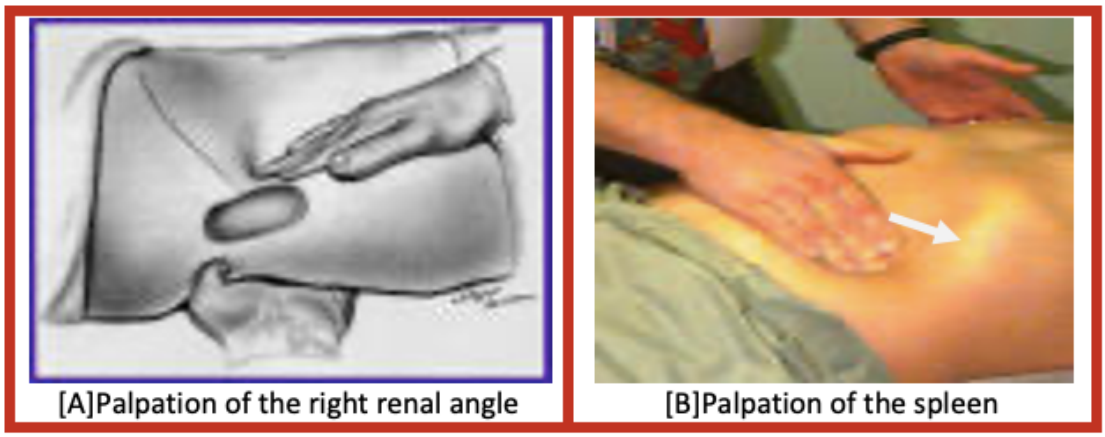


Figure (2-15): palpation of renal angle and spleen

C- Percussion: It has a limited value in abdominal examination in a pregnant woman because of the presence of the pregnant uterus (dullness) which fills the abdominal cavity at term. However, percussion may be used early in pregnancy for detection of ascites (shifting dullness & fluid thrill tests) or to detect dullness over any abnormally palpated mass.

D- Auscultation: The abdomen is auscultated for the intestinal sounds (normal average 7/minute), venous 'hum' especially around the umbilicus in cases of portal hypertension. The **fetal heart sound [FHS]** are heard starting from 16 weeks' gestation if we use the *Pinard's stethoscope* and heard as early as 10 weeks by using *Doppler ultrasound machine* [Fig.2-16].

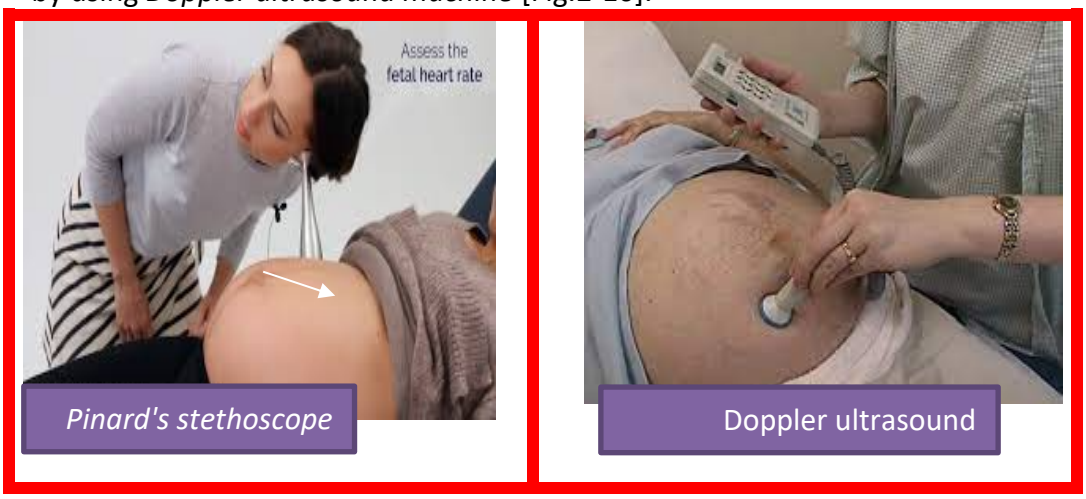


Figure (2-16): Auscultation of FHS

The site of maximum intensity of FHS differs according to fetal presentation and position; in cephalic presentations with the fetal *back anterior*, it is best heard **below** the umbilicus **at the *anterior shoulder of the fetus***. In cases of cephalic presentation with the fetal *back posterior*, FHS are best heard on the anterior shoulder of the fetus (if vertex) or directly below the umbilicus in the midline (in face & brow) i.e., directly over the *fetal anterior chest wall*.

Accordingly, in *breech presentation* the FHS are heard **above** the umbilicus to the right or left according to the fetal position. In *transverse lie*, FHS are best heard in the **flank** medial to the fetal head.

The normal fetal heart rate (FHR) is 120-160 bpm. FHR <120 bpm indicates fetal bradycardia, while FHR > 160 bpm indicates fetal tachycardia.

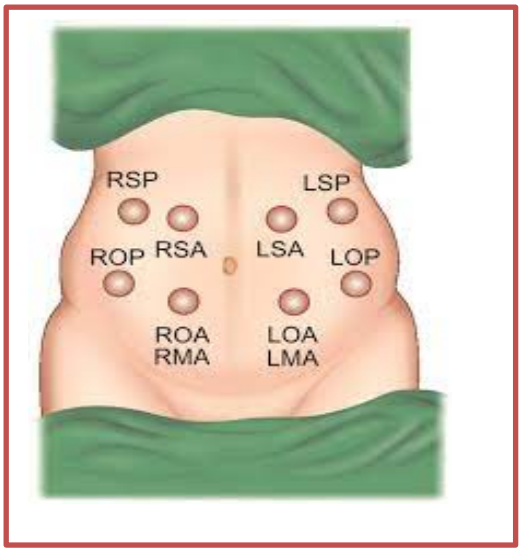


Figure (2-17): Sites for auscultation of FHS in different presentations & positions: [LSP= left Sacro posterior, LSA= left sacro anterior, RSA= right Sacro anterior, RSP= right sacro posterior in breech presentation],

[LOP= left occiput posterior, LOA= left occiput anterior, LMA= left mento anterior, ROA= right occiput anterior, RMA=right nonanterior, ROP= right occiput posterior (in cephalic presentations)

OBSTETRICAL MANEUVERS

These include the following 6 procedures; *Fundal level, Fundal grip, Umbilical grip, First pelvic grip, Second pelvic grip, and Combined grip.*

Each of them has its **aim**, **technique**, and **result**. All these maneuvers should be performed *in sequence* because each one depends on the findings of the proceeding maneuver.

These maneuvers are usually done at gestational ages **28 weeks or more**. This is because before that age the value of doing them is questionable, the technique is difficult due to increased amount of amniotic fluid & decreased fetal tone; hence *only fundal level* is the only maneuver done before 28 weeks pregnancy.

Table [2-2]: The aim of each of obstetric maneuver:

THE MANEUVER	THE AIM
Fundal level	Uterine size in gestational weeks
Fundal grip	Determine which fetal part occupies the fundus uteri.
Umbilical grip	Determine the position of fetal back.
First pelvic grip	Determine which fetal part occupy the lower uterine segment.
Second pelvic grip	Determine the fetal **head attitude**; whether flexed, deflexed, or extended.
Combined grip	A quick method to determine the fetal lie, presentation, and fetal tone in cases of doubt.

The Examiner: In all maneuvers the examiner is on the patient's right side facing her **except** during the 2nd pelvic grip when he (she) is facing her feet.

The **results** of these grips are best obtained in a *singleton pregnancy* with average amount of amniotic fluid. In cases of multi-fetal pregnancy, the condition is confusing because of the presence of *more than 2 fetal poles*. On the other hand, *hydramnios* is suspected clinically when the fetal parts cannot be palpated, and the diagnosis is supported by a uterine size exceeding the period of amenorrhea, and the possibility to elicit *fetal ballottement* at an advanced gestational age.

I - FUNDAL LEVEL:

With the pregnant woman in dorsal position with her shoulders slightly elevated on a pillow & the abdomen is uncovered, the following steps are done, [figure 2-18].

1-Centeralize the uterus with the **right** hand if it is *pronated* (dextro-, or levoposed).

2- With the ulnar border of the left hand, start palpation of the fundus uteri (starting from the xiphi-sternal junction).

3-When the resistance of the fundus uteri is met with, mark the level, and correlate according to the following: [FL at xiphisternum= 36weeks, at umbilicus= 24 weeks, at symphysis pubis=12 weeks]. The distances in-between these landmarks can be divided at equal distances.

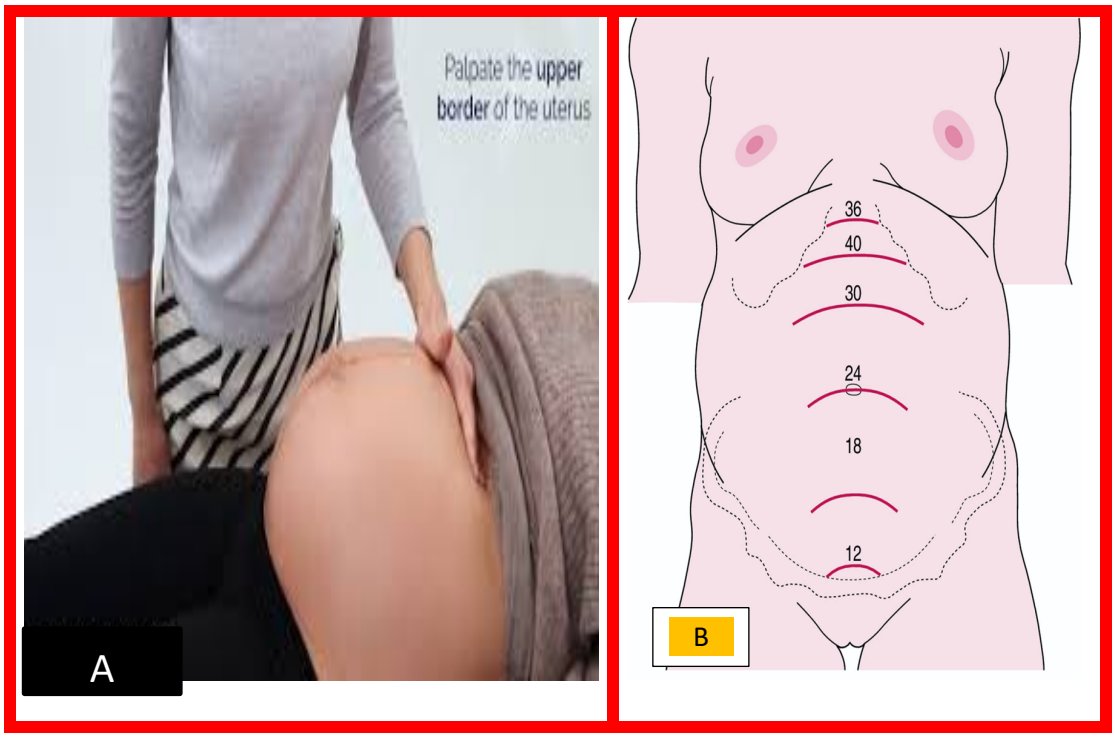


Fig [2-18]: Fundal level estimation; technique (A), week landmarks(B)

Table (2-3): abnormal uterine size in pregnancy

The uterus is LARGER than the period of amenorrhea	The uterus is SMALLER than the period of amenorrhea
1.Miscalculation. 2.Multifetal pregnancy 3. Polyhydramnios 4.Fetal macrosomia; generalized or localized macrosomia e.g., fetal ascites, 5.Hydatidiform mole (50% of cases). 6.Uterine tumors with pregnancy (fibroids), or ovarian tumor in pregnancy 7.Concealed accidental hemorrhage.	**1.**Miscalculation 2.Small for- date- fetus (IUGR) **3.** Intrauterine fetal **4.**Missed abortion **5.**Oligohydramnios **6** Hydatidiform mole (minority of cases)

II- FUNDAL GRIP: *[fig.2-19], [table 2-4]*

With both hands try to grasp (=grip) the uterine fundus provided that the tips of your fingers must not exceed the previously determined fundal level.

Then try to identify the fetal part that occupy the fundus uteri whether **head** or **buttocks** according to the characters listed below in (table 2-4): If the fundus uteri does not contain any fetal part, the fetus is a **transverse lie**.

Table(2-4): differences between the fetal head & breech in palpation

Character	Head	Buttocks (breech)
1- Size	Small	Bulky
2- Consistency	Hard	Soft –to- firm
3- Surface	Smooth , rounded	Irregular
4- Tenderness	Tender	Not tender
5- Ballottement	Ballot able	Not ballotable

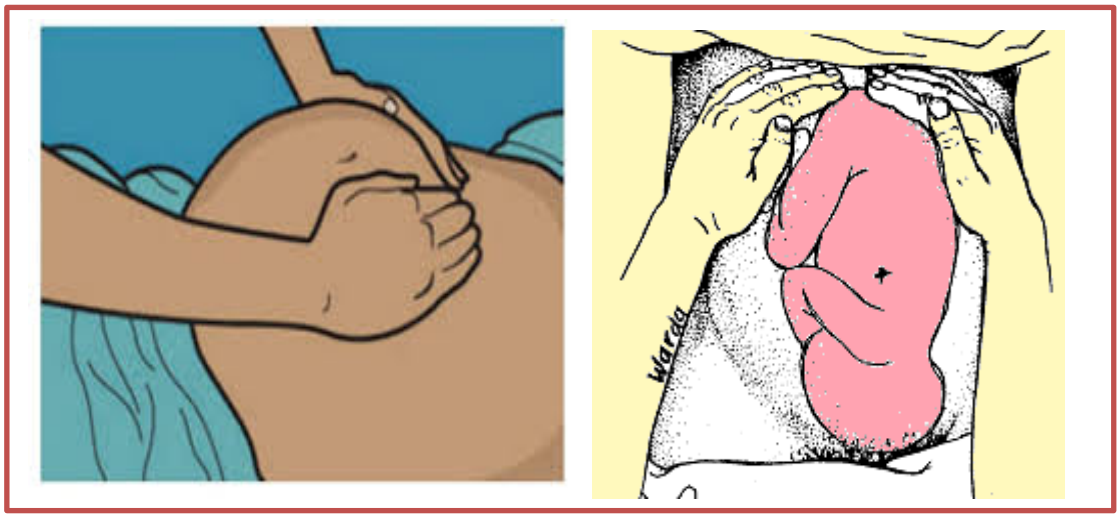


Figure (2-19): Fundal grip technique

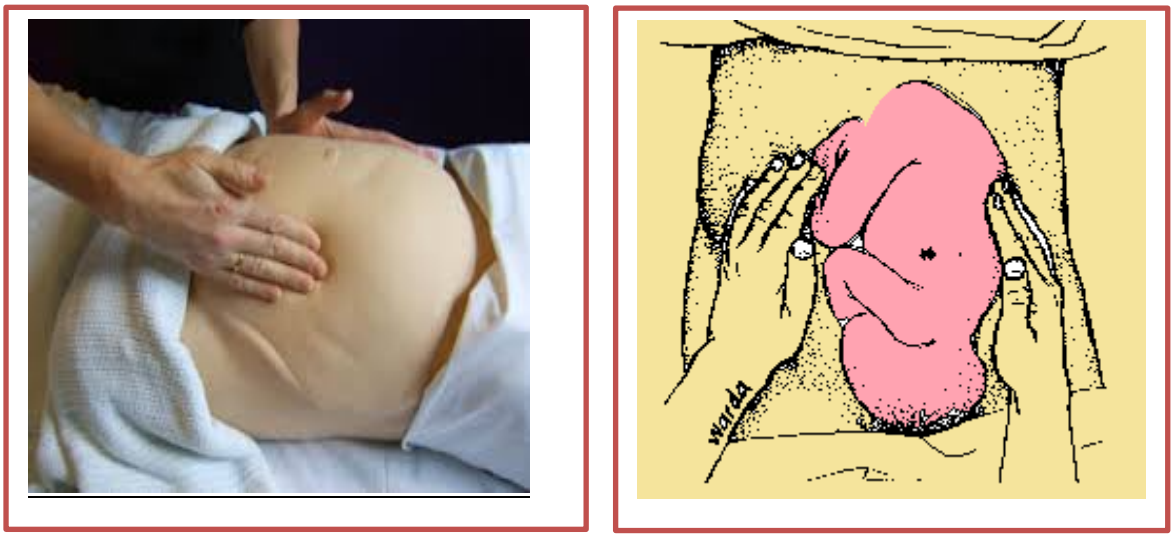


Figure (2-20): Technique of umbilical grip

III- UMBILICAL GRIP (Leopold's maneuver): [Fig.2-20]

The maternal abdominal wall is imaginarily divided into 3 compartments on either side of the midline (right & left) by 2 lines which are the mid-clavicular line & the mid-axillary line. These compartments are *anterior, lateral (or transverse), and posterior* compartments.
Each compartment is palpated from the fundus uteri down to the symphysis pubis searching for the fetal back, provided that the counterhand supports the counter compartment. The fetal back is identified by being, *firm, smooth, and continuous convexity*.

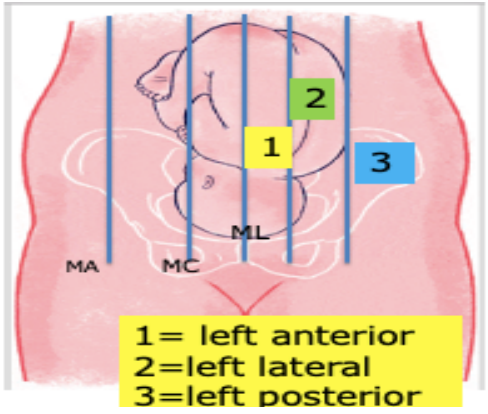


Figure (2-21):
Compartment in umbilical grip (ML= midline, MC= midclavicular line, MA= midaxillary line)

The position of the fetal back determines the fetal position. Table (2-5) shows the 4 **standard** positions in different fetal presentations.

We should know that by umbilical grip alone we can determine the fetal position as regards the position of the fetal **back**. But when we do the 1st & 2nd pelvic grips, we can add to our knowledge the fetal presentation & the attitude of the fetal head (2nd pelvic grip), the dominator of the presenting part is known (Table2-5).

Table 2-5: ***The 4 standard fetal positions in different presentations***

	1st position	2nd position	3rd position	4th position
The Back	**Left-anterior**	**Right - anterior**	**Right-posterior**	**Left-posterior**
Vertex [Occiput] *	LOA	ROA	ROP	LOP
Brow [Fortnum]	RFP	LFP	LFA	RFA
Face [Mentum]	RMP	LMP	LMA	RMA
Breech [Sacrum]	LSA	RSA	RSP	LSP
Shoulder [Scapula]	LScA	RScA	RScP	LSc P

* Presentation [dominator]

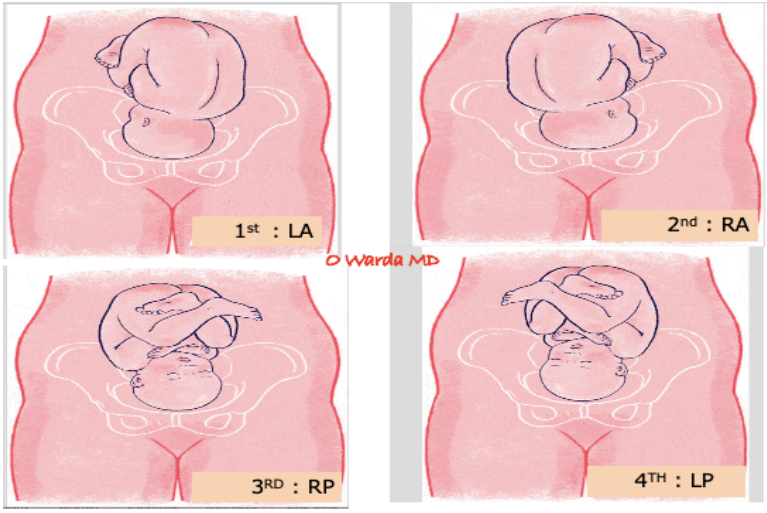


Figure (2-22): the 4 standard fetal positions: 1st = back anterior left, 2nd = back anterior right, 3rd = back posterior right, 4th =back posterior left

IV- FIRST PELVIC GRIP [Pawlik grip]:

Figure (2-23): Technique of the first pelvic grip

In the 1st pelvic grip, [Fig.2-23] we try to identify the fetal part in the lower uterine segment. The patient flexes her knees & hips, and slightly abducts them. The examiner sits on the couch facing her, passing his right hand between her knees to rest the palm over the symphysis pubis & the forearm in line with the patient's abdomen.

The fingers are fanned so that the thumb is parallel to her right inguinal ligament, and the 4 fingers are parallel to her left inguinal ligament. Then try to catch the fetal part in the lower uterine segment. By determining its characters (see table1- 3), you can differentiate between the fetal **head** & **breech**.

V- SECOND PELVIC GRIP: [*only done in cephalic presentations]*

This maneuver is performed to determine the attitude of the fetal head whether flexed, deflexed, or extended. This is done by palpating the sinciput & the occiput & and determining the level of each in relation to the pelvic inlet [Fig. 2-24].

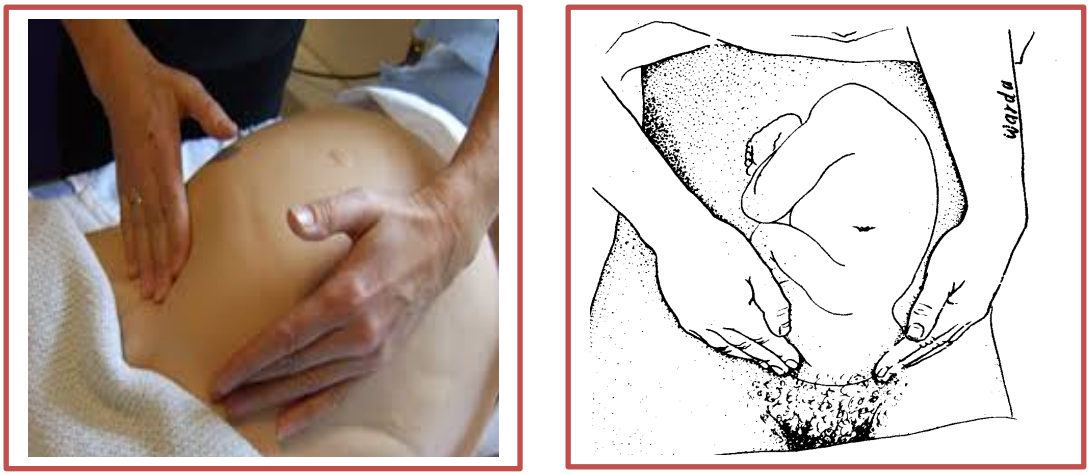


Figure [2-24]: *Technique of the 2nd pelvic grip*

With the patient on her back, her legs extended & slightly separated from each other, with the examiner facing her feet, try to palpate with both hands the 2 bony prominences of the head (the occiput & sinciput). Palpation is started from the patient's flanks, and is directed towards the pelvic inlet (i.e., downwards, inwards, and backwards).
When both bones are felt, determine the level of each. If the bony prominence which is in the same side of the fetal back (i.e., the occiput) is nearer to the pelvic inlet than the other bone (i.e., the sinciput), then the fetal head is fully flexed, and the presenting part is the vertex (occiput presentation). If both bones are at the same level, the fetal head is deflexed, and the presenting part is the forehead (brow presentation). If the sinciput is nearer to the pelvic inlet than the occiput, the fetal head is extended, and the presentation is face presentation [figure 2-24].

The **fetal attitude** is the main determining factor of the type of presentation. This will be shown in tables (2-6) . The 1, 2& 3 attitudes occur through the **long axis** of the fetal head, while the 4th attitude occurs through the transverse axis, causing the sagittal suture **not** to be at equal distance from the symphysis pubis & the sacral promontory (i.e., **asynclitism**). When the sagittal suture is deviated towards the sacral promontory, the anterior parietal bone becomes lower in the pelvis, thus the condition is called **"anterior parietal bone presentation"**. When the sagittal suture is

nearer to the symphysis pubis, the reverse occurs **(i.e., posterior parietal bone presentation).**

*Table [2- 6]: The effect of fetal **attitude** on **cephalic** presentations.*

Attitude	Presentation	Dominator*
1- Flexion	Vertex	Occiput
2- Deflexion	Brow	Forehead (frontum)
3- Extention	Face	Chin (mentum)
4- Side-tilt	Asynclitism	Parietal bone

*NB. The dominator is the bony landmark that characterizes the presenting part.

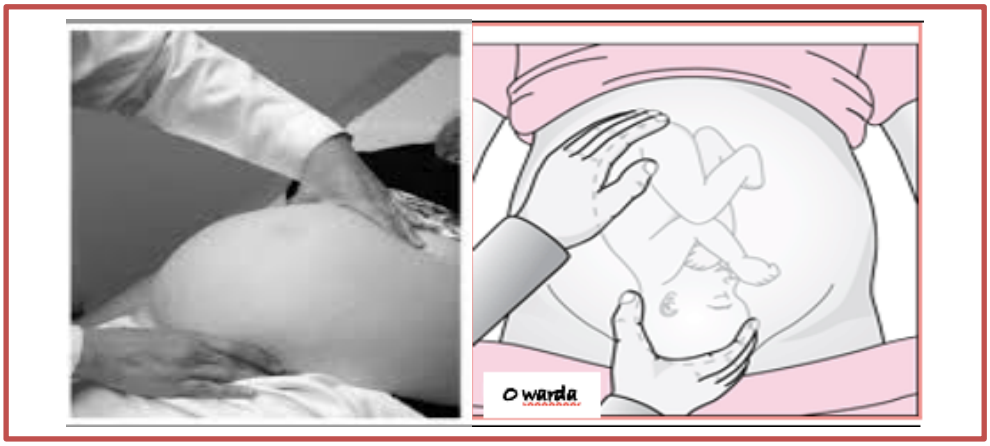
Table [2- 7]: The effect of fetal attitude on **breech** presentations.

Attitude	*Presentation*
1- Complete flexion (hip, knee, ankle)	*Complete breech*
2- Incomplete flexion: - *hip & knee flexed* - *knee only flexed* - *hip only flexed*	 - *Footling presentation* - *Knee presentation* - *Frank breech (breech with extended legs)*

NB. The dominator of all breech presentations is the **sacrum**.

VI- Combined Grip:

It is a quick method used by the experienced obstetrician to determine the location of the cephalic & the podalic poles of the fetus in one procedure. While the patient is in dorsal position, the left hand of the obstetrician grasps the fundus uteri, while his right hand grasps the lower uterine segment. The criteria for identifying the head & the breech are the same as described above [Fig.2-25].



Figure; (2-25); the combined fetal grip

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VAGINAL EXAMINATION IN OBSTETRIC CASE

Vaginal examination is **NOT** a routine procedure in obstetrical case taking. However certain circumstances may indicate it. ***These indications include the following:***

Figure (2-26): Vaginal examination in obstetrical case

1) ***Diagnosis of early pregnancy:***

This was a practice of the past because the evolution of ultrasound (which is more safe, more accurate, and more comfortable to the patient), has made this procedure belonging to the history of medicine.

In the past, **inspection** of the vulva, vagina, and the cervix for changes in color (e.g., purple or violet) due to increased vasculature was used as signs of pregnancy and were named after the physicians described them (e.g., Chadwick's sign). Palpation of pulsations through the vaginal fornixes was also used as a sign for pregnancy (O'Siander sign).

Bimanual examination was also used for both diagnosis of early pregnancy and determination of gestational age (if the uterus is not felt abdominally). When the lower part of the uterus was felt empty & soft while the upper part was enlarged due to presence of conceptus (Hegar's sign). The uterus with a size as an orange was reported as 8 weeks pregnancy, while that of a size as a fetal head was reported as 12 weeks pregnancy. These approximate figures are no longer used in obstetric practice. However, some gynecologists still use them for reporting uterine enlargement due to gynecologic cause.

2) ***Diagnosis of the Clinical Type of Abortion*:**

In cases where there is bleeding in early pregnancy, examination of the cervix uteri-*in addition to ultrasound*- may give the *clue* for diagnosis. If ultrasound detects fetal cardiac pulsations, the vaginal bleeding is mild-to-moderate, and the cervix uteri is felt as closed, then the condition is diagnosed as *threatened* abortion which requires treatment hoping for continuation of pregnancy. If the ultrasound could not detect fetal cardiac motion (after 7 weeks gestation if using trans-abdominal ultrasound, or after 6 weeks if using endo-vaginal ultrasound), vaginal examination to determine the cervical condition is important procedure; if the cervical internal os is closed, the condition is mostly missed abortion, while if it is open the condition is diagnosed as incomplete abortion or inevitable abortion (table 2-7).

Table (2-8): Clinical types of abortion.

Clinical Type of abortion	Bleeding	Discharge	Uterine size	Internal cervical os	Fever	Septicemia
1.Threatened	+	-	= amenorrhea	closed	-	-
2.Inevitable*	+++	-	< amenorrhea	open	-	-
3.Incomplete	++	-	< amenorrhea	open	-	-
4.Complete	+	+	< amenorrhea	closed	-	-
5.Missed	+	+ brown	< amenorrhea	closed	-	-
6.Infected	Any	Pus	Any	Any	+	-
7. Septic	any	Pus	Any	Any	++	+

**Cervical abortion* is a sub-type of inevitable abortion in which the products of conception are in the cervical canal.

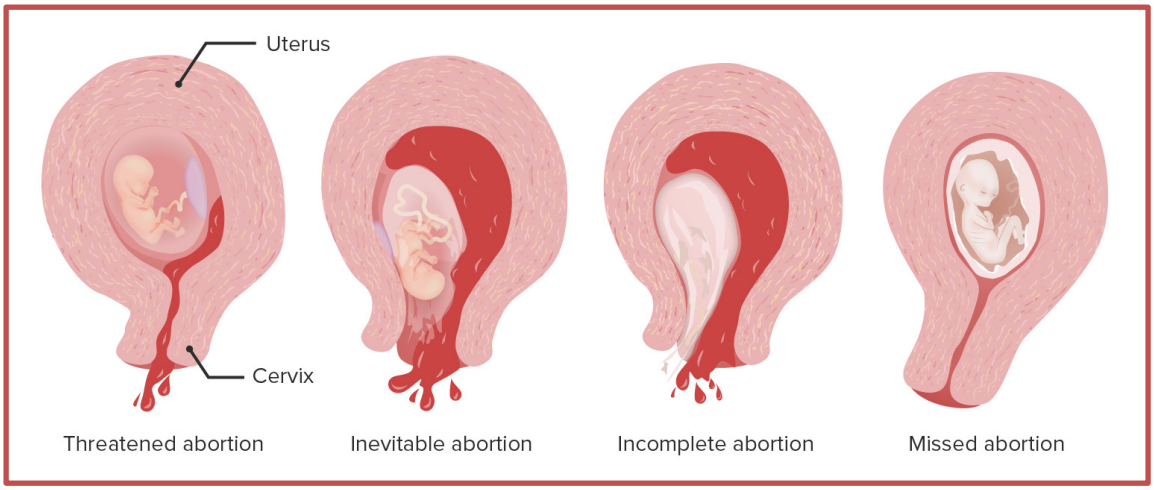


Figure (2-27): Clinical types of abortion

3) ***Cases of ante-partum hemorrhage*:**

When the ultrasound examination **excludes** placenta previa, or placental abruption, speculum examination is indicated to *diagnose local gynecologic cause of bleeding*. Also, when we need to determine the type of vaginal bleeding whether maternal or fetal, a sample of blood taken from the vagina through a Cusco's speculum and testing for fetal hemoglobin.

Before evolution of ultrasound, diagnosis of placenta previa depended on vaginal examination (*the double set-up examination*) which was so risky that it was done in the operative theatre with everything ready for cesarean section if the examination caused severe vaginal bleeding.

4) ***Cases of suspected (premature rupture of fetal membranes; PROM)*:**

When the diagnosis of PROM is to be confirmed, a dry sterile vaginal speculum is inserted, and a sample of the fluid is obtained to be tested. The characters of the amniotic fluid may roughly indicate the fetal condition (e.g., meconium-stained amniotic fluid is a clinical method for suspicion of fetal distress that needs more confirmatory tests as fetal scalp PH). Moreover, vaginal examination once the patient complained of PROM is essential to exclude *cord prolapse* which is considered a fetal catastrophe.

5) ***Trans-vaginal diagnostic procedures*:**

Many diagnostic fetal procedures are done via the vaginal route.

i. Endovaginally ultrasound,
ii. Trans-vaginal & trans-cervical chorionic villus sampling,
iii. Transvaginal amniocentesis,
iv. Trans-cervical embryoscopy, fetoscopy

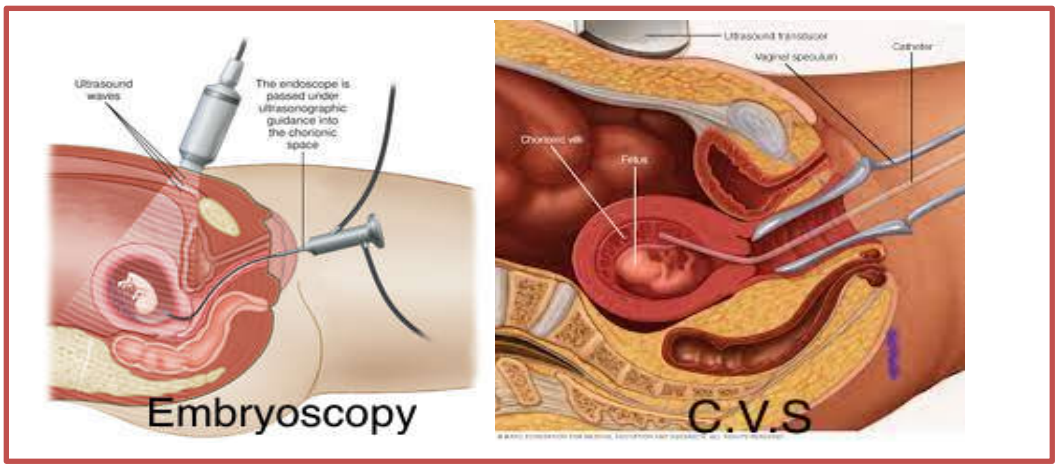


Figure (2-28): Embryoscopy & Chorionic villus sampling (CVS)

6) *Assessment of pelvic capacity*:

Clinical pelvimetry for the **inlet** (diagonal conjugate), the **cavity** (pelvic side-walls, ischial spines, and the Sacro-spinous ligament breadth), the outlet (the bi-tuberous diameter, and the sub-pubic angle) are all done via vaginal examination at 37weeks or more in all *nulliparous* women. Moreover, the *cephalo-pelvic disproportion tests* (e.g. Muller-Kerr test) are also done via the vaginal route [Fig2-29].

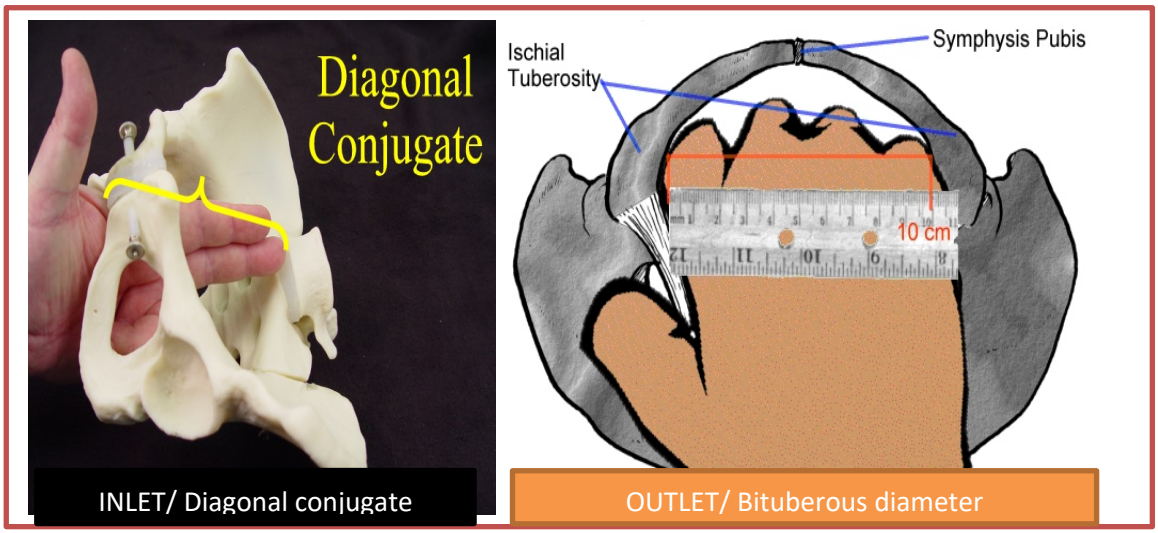
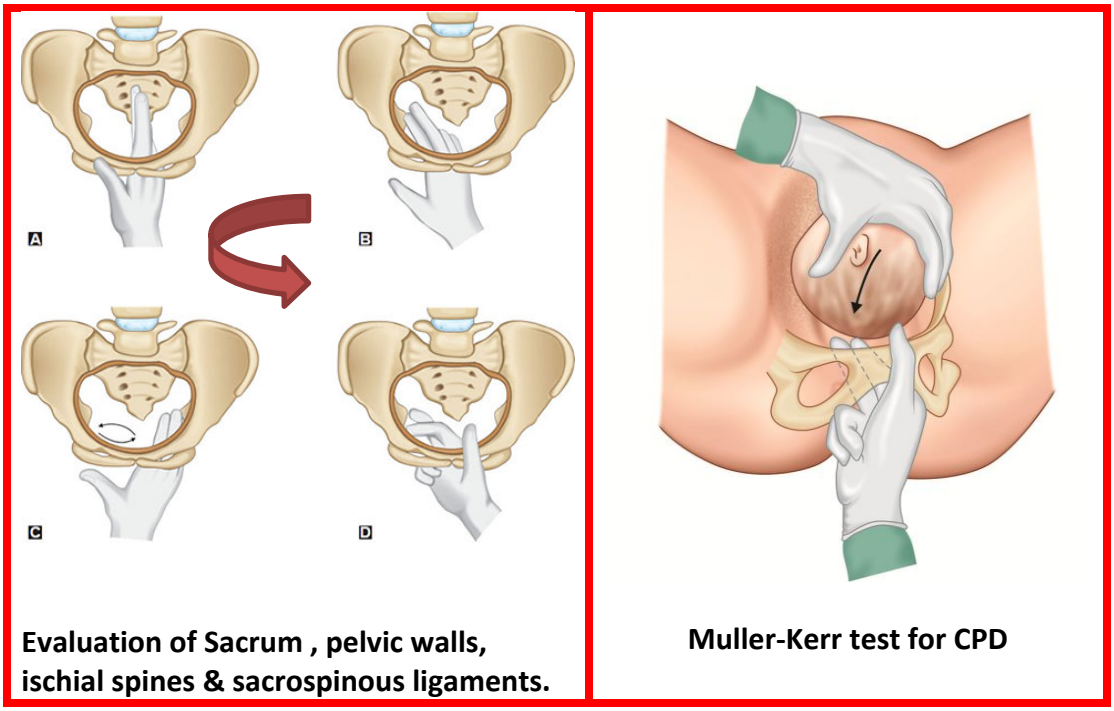


Figure (2-29): measuring diagonal conjugate (inlet), and bi-tuberous D. (outlet)



Evaluation of Sacrum , pelvic walls, ischial spines & sacrospinous ligaments.

Muller-Kerr test for CPD

Figure (2-30): clinical pelvimetry steps

7) ***Diagnosis of labor & follow-up of its progress*:**

When true labor pains [**regular, painful, colicky abdominal pains, referred to the lower back, with progressive increase in frequency, strength, and duration**] are experienced by the patient, vaginal examination is necessary to assess the associating cervical changes (i.e. *effacement* & *dilatation*).

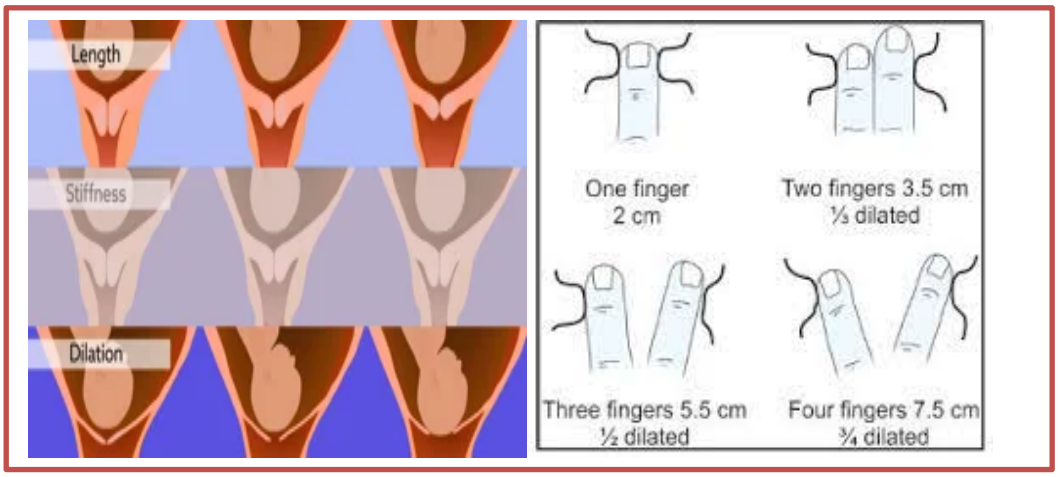


Figure (2-31): Assessment of the cervix uteri during labor

The cervical effacement (=taking up of the cervical canal into the lower uterine segment) is evaluated by estimation of the cervical length, a fully effaced cervix is less than half a centimeter long, while a non- effaced cervix is much longer.

Cervical dilation (the internal os diameter) denotes the progress of labor process & is evaluated by introducing the examining index & the middle finger into it to estimate the magnitude of cervical dilation. Cervical dilation is expressed in centimeters. It is used to consider each finger to equal 2 Cm. A fully dilated cervix is 10 Cm dilated (5 fingers) and at this stage the cervical tissues cannot be detected by the examining fingers [Fig.2-31].

*The **station*** of the presenting part (i.e. the degree of descent of the presenting part into the pelvis) is determined by vaginal examination. De Lee had classified the station according to the descent in relation to the **ischial spines**; if the lowermost part of the presenting part is at the level of the ischial spines, the station is **zero**. If it is 1,2,3,4,5 Cm lower the station is +1,+2,+3,+4,+5 respectively. On the contrary, if the presenting part is 1, 2,3,4,5 Cm higher, the station is –1, -2,-3,-4,-5respectively [Fig1-16].

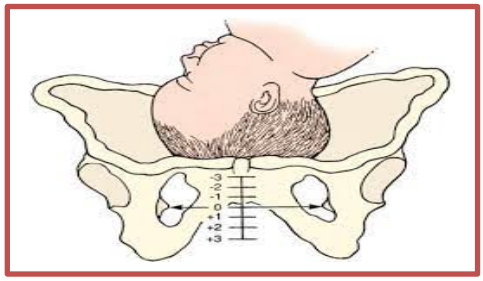


Figure: (2-32): De Lee stations of fetal head

8) <u>Confirmation of fetal presentation & position:</u>

When the cervix is dilated the fetal presenting part can be identified by palpation. The **vertex** is identified by the presence of the sagittal suture & the posterior fontanel. The anterior fontanel (wide & membranous) is not accessible in a fully flexed head & and only accessible when the head is deflexed figure (2-33).

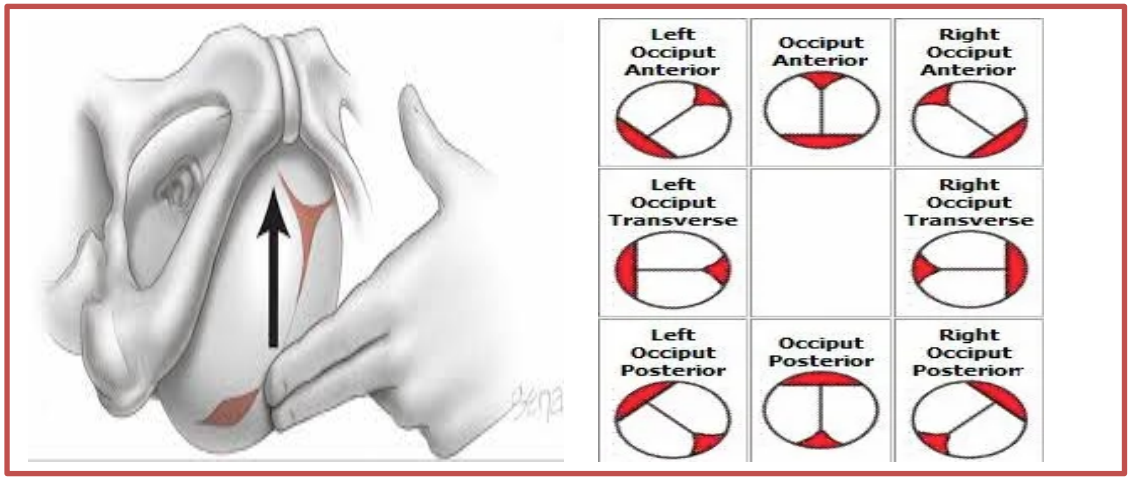


Figure: (2-33): determination of fetal position by vaginal exam of head.

The **face** presentation is identified by the presence of the eyes, nose, the alveolar margin in the fetal mouth, and the chin which should be completely felt. Suckling of the examining finger when introduced in the fetal mouth may occur. The **brow** presentation is diagnosed if the forehead, the nose, and the alveolar margin are all felt. In brow presentation it is impossible to feel the fetal chin completely (i.e., if you can get below the chin, it is a face presentation not brow).

Breech presentation is diagnosed when you feel the fetal buttocks +/- the feet. The buttocks are identified by the 3 bony landmarks felt at the same line: namely the 2 ischial tuberosities, and the sacral tip in-between. The fetal anus can be felt & thick meconium may be passed on the examining finger if the membranes are ruptured. The external genitalia of a male fetus may confirm the diagnosis. The fetal feet are differentiated from its hand by the criteria listed in table (2-8).

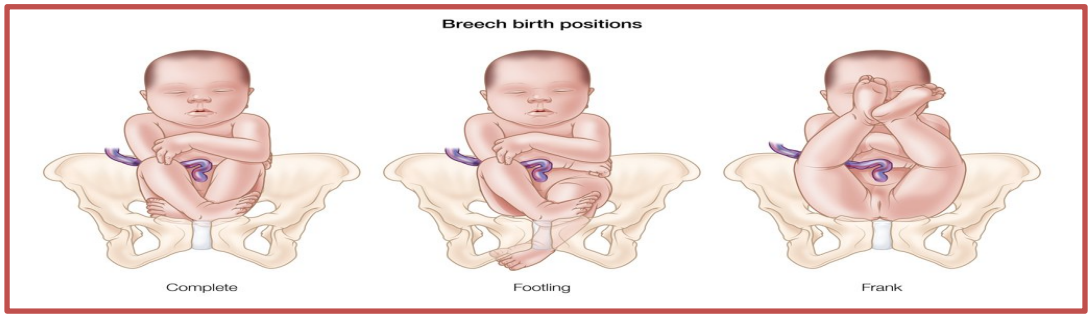


Figure (2-34): breech presentations

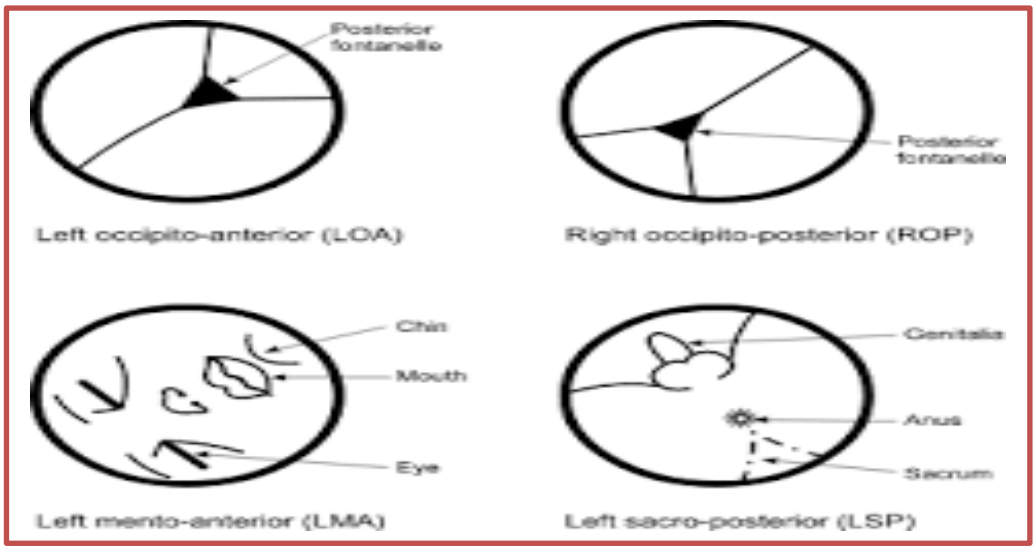


Figure (2-35): Differences among face, frank breech on vaginal palpation.

Table (2-8): Differences between face and frank breech on vaginal palpation

	Face	Frank breech
1	Firmer less yielding jaws	Muscular resistance with anus
2	No meconium from mouth	Meconium on finger from anus
3	Mouth and malar eminences form a triangle	Anus and ischial tuberosities are in straight line

Table [2- 9]: ***The difference between the fetal foot & hand on vaginal palpation.***

Fetal hand	Fetal foot
The fingers are long	The toes are short
Presence of mobile, long thumb	The big toe is short & not freely mobile
No heel	Presence of the heel at the junction with the leg.

In **shoulder** presentation the side wall of the fetal chest can be recognized by palpation of the fetal ribs (grid iron sign). The dominator is the scapula, hence its position (right, left; anterior, posterior) determines the fetal position [figure; 2-36].

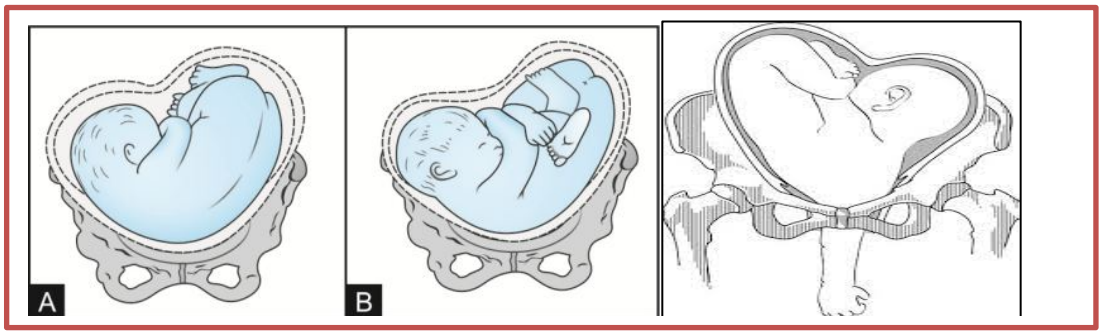


Figure [2-36]: Shoulder presentation (transverse lie)

If the **umbilical cord** is felt below the presenting part with the fetal membranes still *intact*, the condition is termed *cord presentation.* But if the membranes are previously ruptured, the condition is termed *cord prolapse*. If the cord is seen outside the vulva, the condition is termed *cord expression*. When the umbilical cord is palpated, it is crucial to know whether it is pulsating or non-pulsating [figure 2-37].

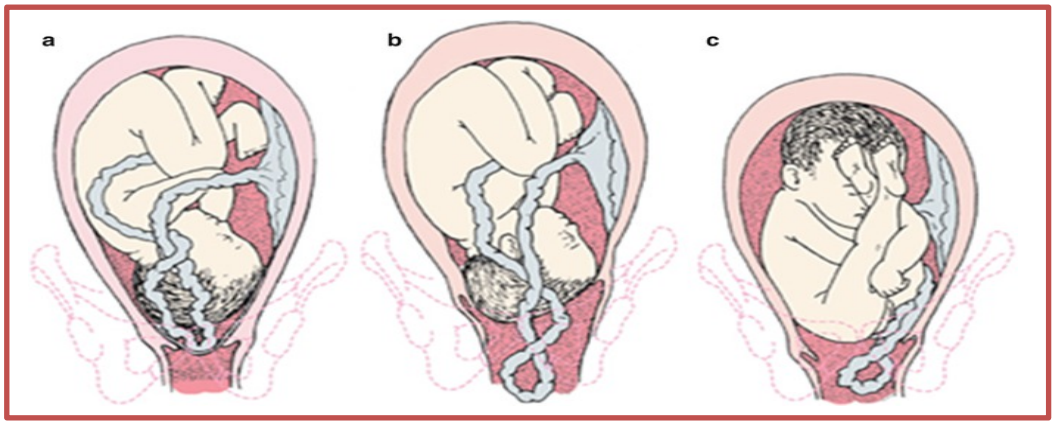


Figure: [2-37]: Umbilical cord prolapse [(a)presentation, (b)prolapse, (c) expression].

The **fetal position** [Figures 2-33] can be easily identified by palpation of the presenting part through the dilated cervix. This is achieved by determining the location of the dominator of the presenting part in relation to the pelvic cavity. If it is directed toward the pubic bone, it is an *anterior* position (right or left). If it is directed toward the sacroiliac joint, it is a posterior position (right or left). If the dominator is directed toward the side wall of the pelvis, it is a transverse position (right or left). Two more possible sites remain for the dominator to occupy; to be direct anterior (i.e., directly behind the symphysis pubis), or directly posterior (i.e. directly in front of the sacral promontory).

BEDSIDE URINE ANALYSIS FOR SUGAR & PROTIEN

The obstetric case taking is ***not*** *complete except* after urine analysis to detect **glucose**, and **protein**. This is simply done nowadays using special strips with reasonable accuracy & sensitivity for routine screening. Presence of glucose in urine (i.e., glucosuria) may suggest presence of *diabetes mellitus* whose diagnosis is further confirmed by special tests to detect blood glucose level (e.g.,75 gm 3hours glucose tolerance test). For details refer to the chapter/ lecture of diabetes mellitus with pregnancy.

The presence of **protein** in urine (proteinuria) may indicate pre-eclampsia especially if associated with hypertension. Proteinuria can be detected by a simple bed-side

test using special commercial strips or by an older method which is qualitative (***the standard turbidimetric method***); in this method the urine sample is boiled after addition of few drops of sulphosalicylic acid (to precipitate crystals), the result is reported in [table 2-10]:

Table [2-10]: *The standard turbidimetric method for proteinuria estimation.*

Result	Description
Negative	Clear
Trace	Cloud barely perceptible against a black background
1+	Cloud distinct against a black background
2+	Cloud distinct & granular against light but no definite flocculation.
3+	Dense cloud & heavy flocculation.
4+	An extremely heavy precipitate, specimen may solidify (coagulum)

Quantitatively, trace = +/- 300mg/L, 1+ = +/- 1g/L, 2+ or more = > 2 g/ L

NB. According to the NICE guidelines 2019; proteinuria (urine protein/creatinine ratio of 30 mg/mmol or more or albumin/creatinine ratio of 8 mg/mmol or more, or o at least 1 g/liter [2+] on dipstick testing which should be read by special apparatus not by naked eye. For more details refer to chapter / lecture of hypertension in pregnancy.

-Print friendly an obstetrical case taking sheets via scanning of these codes.

- A 3-D animation and an actual video of normal labor can be watched via scanning the following codes.

Gynecological Case-taking

Introduction:

The science of gynecology is that branch of medicine that deals with the woman's health from her birth onwards taking the aspect of being a *female*. The aspects included are her *reproductive function* (excluding pregnancy), the conditions of the *genital tract*, *sex organ & sexual function.*

The tools by which the physician reaches the appropriate diagnosis are history taking, clinical physical examination & the required investigations. Case taking is that part which includes *history taking, physical examination and clinical investigations*.

Diagnosis of a gynecologic case:

The ideal gynecological diagnosis should include the following:

1. *Etiological diagnosis*; including the offending cause.
2. *Anatomical diagnosis*; including the anatomical alteration.
3. *Functional diagnosis*; including disordered function.

For how to write a gynecological diagnosis a separate chapter is added to this 4th edition (i.e., chapter 6).

HISTORY TAKING

Unlike in obstetric case taking, gynecological case taking is NOT started with gravidity and parity. Items of history taking include the following:

1-Personal history. **2-Complaint.** **3-Menstrual history.**

4-Obstetric history. **5-Past history.** **6-Family history.**

7- Sexual history; only in cases of infertility. **8-Present history.**

PERSONAL HISTORY:

1- *NAME:*

The full name of the patient is asked for, to call her with her name during history taking for familiarity, and for registration purposes.

2- *AGE:* [Table; 3-1]

Knowing the age of a gynecologic case is of great help in diagnosis because certain gynecological diseases are common in some age groups than others. In the female **neonate** vaginal bleeding (i.e., *birth crisis*) is due to the sudden withdrawal of high levels of steroid hormones after birth. Also, some **malignant** vaginal neoplasms are found in the neonatal & childhood such as *sarcoma potyroides;* the most of its cases occur under the age of 5 years.

Precocious puberty is diagnosed when one or more of the pubertal events appear before the age of 8. ***Amenorrhea*** is diagnosed if the female reaches 16 years of age without menstruation.

In the **childbearing period** (16-40 years) the complaints, especially in sexually active females, are usually related to *infection* of the female genital tracts, *infertility*, the *benign neoplasm* such as fibroids, and complications of childbearing.

Pre-menopausal (40-45years) & **peri-menopausal** (45-55years) periods are mainly characterized by abnormalities in the hormonal milieu of the female that may be reflected as *abnormal uterine bleeding* with endometrial hyperplasia as the underlying pathology in most cases. Moreover, *malignancies* must be put as a differential diagnosis for the related symptoms and must be excluded by the appropriate investigations. The **postmenopausal period** is the period of most of the *genital tract malignancies* more than any other period in the woman's life. Postmenopausal disorders due to ovarian hormone deficiency is unique to this period. Some pre-existing conditions are aggravated when the patient reaches the menopause e.g. *genital prolapse*.

Table: [3-1]: Common gynecological disorders per woman's age period

Age period	Common Gynecological Disorder
Infancy & childhood [birth-to-9 years)	Birth crisis, witch's milk, ambiguous genitalia, *sarcoma potyroides*, some malignant germ cell ovarian tumors, precocious puberty, vulvo-vaginitis of children, iatrogenic
Adolescence &puberty [9y-16y]	Abnormal uterine bleeding due to ovarian dysfunction (AUB-O), Infrequent menses, primary amenorrhea
Childbearing period [16y-40y]	Pregnancy complications, infertility, genital infection, benign tumors (e.g., fibroid)
Perimenopause [45-55y]	DUB, tumors (benign &malignant)
Post-menopause	Malignancy, estrogen-deficiency sequelae

3- ***Residence:*** the full address of the woman should be asked for & registered. This will be of value for diagnosis of some diseases e.g., *bilharziasis* is much more common in rural areas than in urban areas. Also, poor women living in slums are usually of bad genital hygiene that may predispose to some diseases e.g., *cancer vulva*.

4- ***Occupation:*** Cancer cervix is common in *prostitutes & those with multiple sex partners*. Women who have chronic chest disease (e.g., who are working in dusty environment) are more liable to develop genital descent than others. Some environmental toxins are found to have relation to some gynecologic disease (e.g., dioxin & endometriosis).

5- ***Marital Status & Number of Living Offspring****:* The early age at the 1st coitus (<15 years), as well as presence of multiple sexual partners are predisposing factors to **cervical neoplasm**. The presence of *sufficient number of children* may be a determining factor in selection of the *surgical procedure* in certain diseases (e.g., conservative versus radical surgery for (stage IA) ovarian cancer in a young lady). The ***current sexual activity*** is also important in the selection of the surgical procedure for certain disease (e.g., vaginal hysterectomy & repair of the pelvic floor *versus* Le Fort operation in the treatment of advanced genital descent in an old woman).

6- ***Special habits****:* **Smoking** may be a risk factor for cervical neoplasm; lung cancer, cardiovascular disease. Some studies recorded endometrial cancer with higher incidence in nonsmokers than smokers! (Figure 3-1)

7- ***Personal history of the husband:*** see obstetric case taking for details.

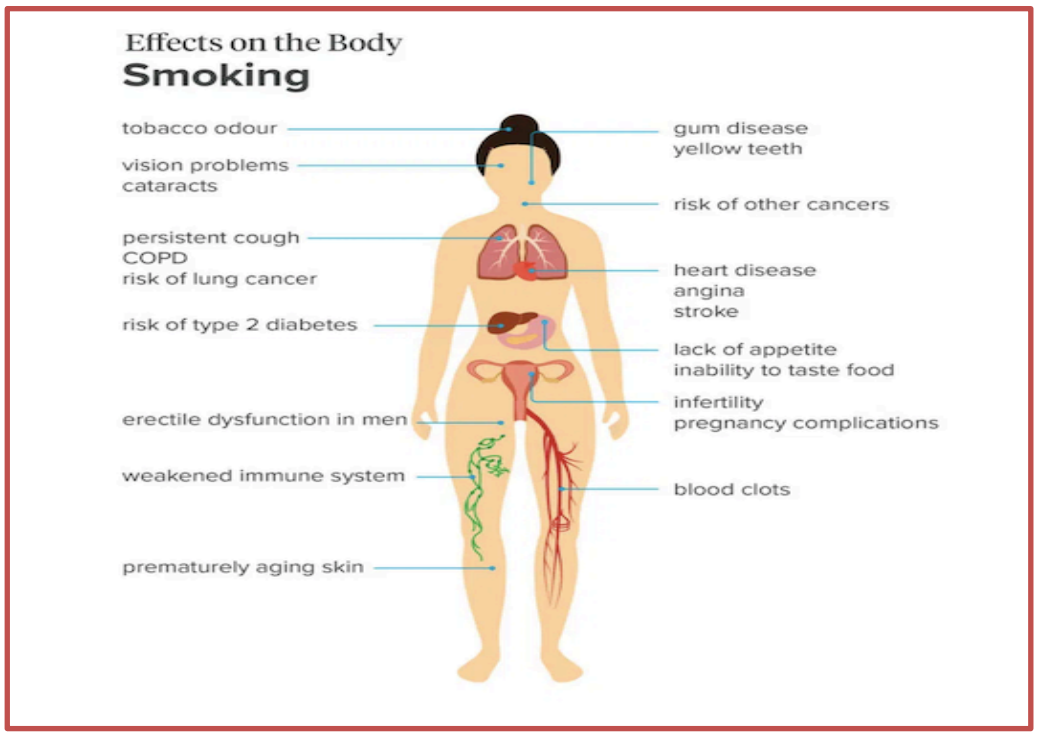


Figure [3-1]: Effects of smoking on woman's body

THE COMPLAINT:

- The gynecologic case may complain of one or more of the following 5 complaints: ***Pain, Bleeding, Discharge, Swelling, or Infertility***.
- Complaints should be in the patient's own words without using scientific terms.
- Complaints (if more than one) should be arranged chronologically (i.e., according to the onset of their occurrence). Or they may be arranged according to their importance from the patient's point of view.

MENSTRUAL HISTORY:

- The same as mentioned in pages 7,8, and 9.
- The use of contraception is mentioned at the end menstrual history of a gynecological case.
- The international federation of obstetrics & gynecology (FIGO) had changed the terminology of abnormal menstrual patterns so that *menorrhagia*, *metrorrhagia*, *oligomenorrhea*, *polymenorrhagia*, hypermenorrhea is no longer be used. The new normal and abnormal parameters are shown in (table 3-2)

Table (3-2): the FIGO classification of uterine bleeding

Category	Normal	Abnormal	☑
Frequency	Absent (no periods or bleeding) = amenorrhea		☐
	Frequent (<24 days)		☐
	Normal (24 to 38 days)		☐
	Infrequent (>38 days)		☐
Duration	Prolonged (>8 days)		☐
	Normal (up to 8 days)		☐
Regularity	Regular variation (shortest to longest ≤ 9 days)		☐
	Irregular (shortest to longest 10+ days)		☐
Flow volume	Heavy		☐
	Normal		☐
	Light		☐

Intermenstrual Bleeding (IMB) Bleeding between cyclically regular onset of menses	None		☐
	Random		☐
	Cyclic (Predictable)	Early Cycle	☐
		Mid Cycle	☐
		Late Cycle	☐

Unscheduled Bleeding on Hormone Medication (eg Birth Control Pills, Rings or Patches)	Not Applicable (not on hormone medication)	☐
	None (on hormone medication)	☐
	Present	☐

The following is an example of a normal menstrual history:

Menarche was at 13. Cycles were regular, recurring every month. Menstrual flow was of average amount, lasting for 5 days, dark red color & no specific odor. No associated dysmenorrhea. IMPs were free from pain, bleeding, or discharge. The LNMP was on December 12, 2021. The patient is not using contraception.

NB. In certain circumstances menstrual history is not mentioned in details such as in postmenopausal women, we say instead ***"the patient is postmenopausal ….. years ago***". In cases of primary amenorrhea there is **no** menstrual history.

OBSTETRIC HISTORY:

The items of obstetric history include the following: [for details refer to pages 9,10,11].

1- *Gravidity & parity*.
2- *Full term normal deliveries (FTNDs)*.
3- *Preterm labors*
4- *Stillbirth (SB).*
5- *Difficult labors.*
6- *Cesarean sections (CS).*
7- *Abortions.*
8- *Last delivery date, last abortion*
9- *Previous pregnancies*
10- *Previous puerperia*

Here is an example of obstetric history of a gynecological case:

3rd gravida, 2nd para. 1 FTND resulted in 1 living male. No preterm labors, no stillbirths, no difficult labors. One cesarean section (the 2nd pregnancy) for breech presentation, it was LSCS resulted in 1 living male, was 3 years ago & uncomplicated. One 1st trimester abortion of 8 weeks duration started spontaneously & terminated by surgical evacuation. Last delivery since 2/07/2021, last abortion since 14/06/2018. Previous pregnancies were apparently free, previous puerperia were apparently free.

PAST HISTORY:

1- *Past history of similar condition.*

2- *Past history of medical disease:* such as diabetes mellitus, hypertension, bilharziasis, tuberculosis, irradiation, drug sensitivity.

3- *Past history of surgical operations:* the nature& date of operation should be determined.

4- *Past history of gynecologic operation:* the nature& date of operation should be determined.

5- *Past history of gynecologic therapy:* as gestagen therapy in cases of abnormal uterine bleeding; the drugs, duration of therapy, and response to treatment should be all mentioned.

6- *Past history of contraception:* if not currently used.

FAMILY HISTORY:

1- *Family history of hereditary disease* e.g. diabetes, hypertension, chromosomal anomalies,….etc

2- *Family history of familial non-hereditary diseases* e.g. rheumatic heart disease, tuberculosis (these diseases result in common bad socioeconomic conditions).

3- *Family history of a similar condition in the family*: this is of special importance in certain diseases such as *'cancer family syndrome'* including **ovarian**, **breast**, **endometrial** cancers plus familial colonic polyposis. Other conditions require asking for other affected members of the family such as '*androgen insensitivity syndromes*' which are inherited as x-linked from the mother resulting in what is called '*testicular feminization syndrome*'

SEXUAL HISTORY: It should be taken in cases of infertility. items are as follows;

1. *Frequency of coitus:* it is registered per week.
2. *Position during coitus:* the commonest position is female dorsal position.
3. *Presence of libido:* it is the female sexual desire. It is mentioned as positive or negative. Lack of libido is called *frigidity*.
4. *Presence of orgasm:* it is the climax of sexual pleasure. It is mentioned as positive or negative. It is not mandatory for conception as pregnancy may occur following rape.
5. *Dyspareunia:* it is pain during intercourse. It may be *superficial* dyspareunia, or *deep* dyspareunia. It should be mentioned as positive or negative, with specification of its type. In rare cases the intercourse is impossible (i.e. apareunia) because of **vaginismus** (violent reflex spasm of the levator ani, perineal muscles, gluteal muscles, and adductors of the thigh on any attempt at sexual intercourse making intromission impossible. It is usually of psychogenic origin).
6. *Use of lubricants:* to facilitate intromission, should be mentioned.
7. *Flour semenis:* it means escape of semen from the vagina immediately after ejaculation. In most fertile women some degree of flour semenis occurs.

8. *Post-coital vaginal douches:* the female should be asked if she perform immediate postcoital vaginal douches or not. Water per se is considered as spermicidal.

PRESENT HISTORY:

The present history of a gynecologic case consists of the following items:

1. *Analysis of the complaint*: regarding its **character**, the **duration**, the **onset** (acute, gradual, insidious), the **course** (progressive, regressive, or stationary), **what increase**, **what decrease**, **association of other symptoms**, **previous treatments** (since what time, its duration, its types, results of treatments).

2. *Related urinary & gastrointestinal symptoms*.

Examples:

1- **Pain:** onset, course, duration. Type of pain. Sites of pain, and sites of its referral. What increase, and what relieves. Association with other gynecologic or non-gynecologic complaints.

2- **Bleeding:** onset, course, duration. Amount of bleeding, and its relation to menstruation. Bleeding from other body orifices. What increase, and what decrease. Use of anticoagulant drugs or other medicaments. Association with other gynecologic or non-gynecologic complaints.

3- **Discharge:** onset, course, duration. Characters of discharge regarding amount, color, and odor. Association with pruritus vulvae. What increase, and what decrease. Association with other gynecologic complaints.

4- **Mass (swelling):** onset, course, duration. Site of the swelling. What increase, and what decrease. Association with other gynecologic or non-gynecologic complaints.

5- **Infertility:** duration of infertility (inability to conceive despite regular, unprotected marital relationship). Association with other gynecologic complaints. Investigations previously done and the date and the result of each. Previous therapies with their date and results.

By scanning this code you can friendly download a printable form of gynecological sheet.

CLINICAL EXAMINATION

Examination of a gynecologic case consists basically of the following items:

(1). General examination. **(2). Abdominal examination.**

(3). Local examination: includes.

a). Vulvar inspection. b). Vaginal palpation.

c). Bimanual examination. d). Speculum examination

e). Special clinical tests (in certain cases)

The sequence is as previously arranged except if a cervico-vaginal swab (for culture or cytology) is required, the speculum is the first step of local examination.

GENERAL EXAMINATION

[Also refer to general examination in obstetrical case]

1. GAIT:

By gait we mean the type of walking (*see obstetric case taking*). Some gynecologic diseases may affect the gait e.g., tender Vulvar lesions.

2- CONSTITUTION:

By constitution we mean the body configuration whether feminine or masculine *(see obstetric case taking)*. Feminine constitution may indicate that the lady is well estrogenized. On the other hand, masculine constitution indicates androgen excess which is usually associated with hirsutism and/or ovulatory dysfunction.

3. BUILT:

It is the relationship between the weight & height of the patient. Short stature is characteristic of certain chromosomal anomalies *(e.g., Turner's syndrome- 45XO syndrome)* which present to the gynecologist with amenorrhea. Obesity on the other *syndrome)* which is an androgenic obesity. Also, obesity together with hypertension & diabetes mellitus were considered predisposing to endometrial carcinoma in postmenopausal women *(cancer corpus triad)* -figure (4-1).

4. VITAL SIGNS:

A. ***Blood pressure (BP):*** measuring the blood pressure is important in acute gynecologic conditions to exclude shock e.g., neurogenic shock during intrauterine manipulations as during uterine sounding. Also, preoperative measurement of blood pressure to diagnose hypertension & its control is mandatory.

B. ***Pulse:*** tachycardia may indicate hypovolemia as well as fever. Bradycardia when associated with hypotension may indicate neurogenic shock.

C. ***Temperature:*** fever is found in infective gynecologic conditions.

D. ***Respiratory rate:*** The normal range of respiratory rate is 16-20 cycles/minute.

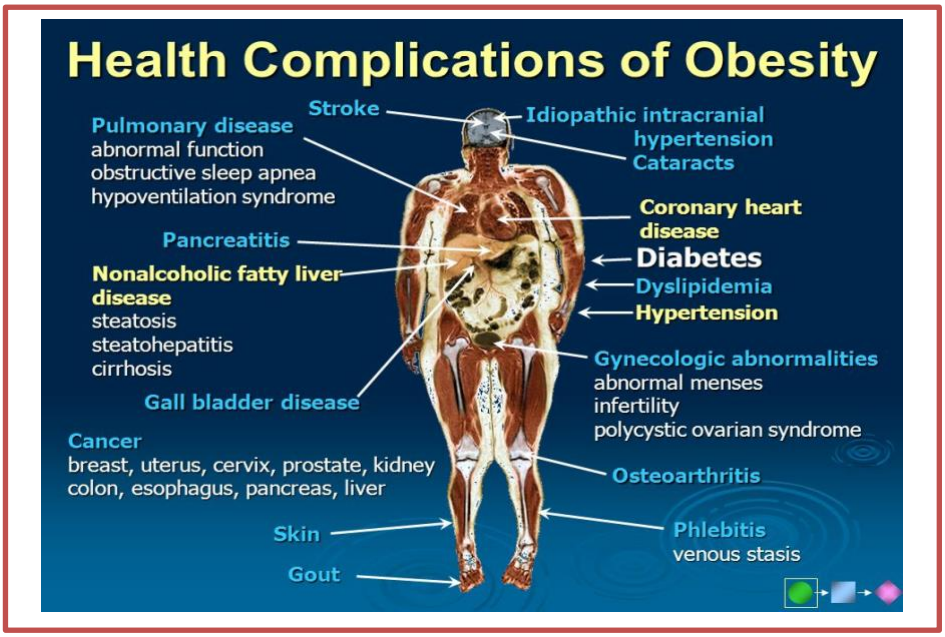


Figure [4-1]: Health complications of obesity

5. SYSTEMATIC PHYSICAL EXAMINATIONFROM THE HEAD TO THE HEEL:

[Only the positive findings are mentioned]

A] The Head:

i. *The hair line*: temporal recession denotes androgen excess.

ii. S*calp disease*& *forehead abnormalities*; frontal bossing may be a stigma of congenital syphilis.

iii. *Eyebrows:* loss of the outer third may result from hypothyroidism, leprosy, or artificial removal,

iv. *Sclera* for jaundice, *eyelid* for anemia, *cornea* for abnormalities, *eyeball* for protrusion in thyrotoxicosis,

v. The *cheeks* for butterfly pigmentation (e.g., SLE),

vi. *Nose* for bridging in congenital syphilis, and abnormal discharge),

vii. *Mouth*; the inner aspect of the lip for anemia, teeth for caries & artificial teeth, the upper surface of the tongue for vitamin -B deficiency [glazed tongue] & undersurface of the tongue for central cyanosis, throat for tonsillitis).

B] <u>The Neck:</u> is examined for the *thyroid gland* enlargement, *cervical lymph nodes* (sub-mental, sub-mandibular, pre-auricular, anterior cervical, posterior cervical). The left supra-clavicular lymph node (Virchow's gland) is of special importance as it enlarges with intra-abdominal malignancy (Troisier's sign). The neck is also examined for *congested neck veins*. *Webbing* of the neck is one of the stigmata of Turner's syndrome.

C] <u>The Breasts:</u> are examined for their degree of *development, symmetry* on both sides, breast *masses* & dilated veins. The *nipples* are examined for development, retraction, cracking & *galactorrhea*. Breast development reflects the degree of estrogenicity of the female. Tanner [1962] had classified breast development, and pubic hair growth into 5 stages, while axillary hair development was classified into 3 stages: table [4-2], figure [4-2]

<u>Table [4-2]: Tanner stages for pubertal events.</u>

Stage	Breast	Pubic hair	Axillary hair
1	Pre-pubertal, papilla elevated only	Pre-pubertal, no hair	Pre-pubertal, no hair
2	Breast bud	Pre-sexual hair	Scanty hair
3	Breast elevation	Sexual hair but sparse.	Adult hair
4	Areolar mound	Sexual hair over mons only	-
5	Adult contour	Sexual hair over mons, labia majora; transverse upper border.	-

Figure [4-1]: Tanner's female pubertal scale

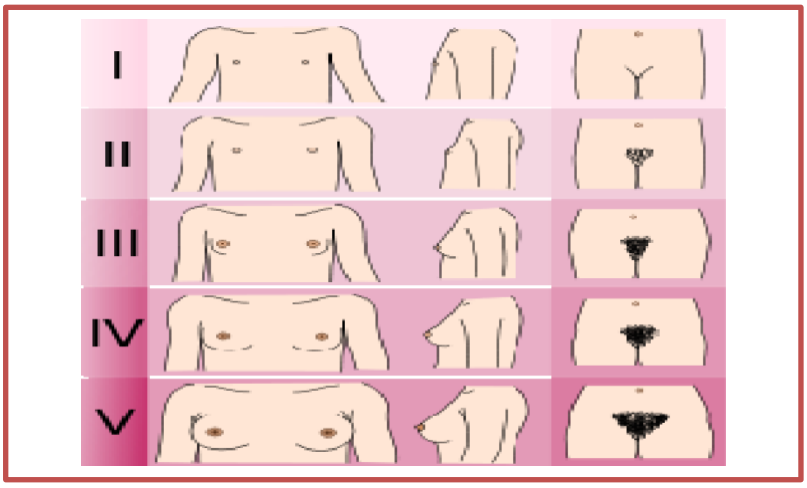


Figure [4-2]: Female tanner stages

D] <u>The chest & heart:</u> The chest is inspected for deformity. Breathing sounds & abnormal wheezes or crepitations should be mentioned if auscultated. Murmurs should be identified as regards the type, site of maximum intensity, and propagation. If the patient has known chest or heart disease, then complete examination (inspection, palpation, percussion, and auscultation) is mandatory.

E] <u>Extremities & Back:</u> both lower & upper limbs are examined regarding *edema*, *varicosities, ulcers*, or *deformities* [e.g., cubitus valgus in Turner]. The *spine* is examined for deformities, or defects e.g., spina bifida which may be associated with genital descent due to denervation of the pelvic floor muscles (fig. 4-3).

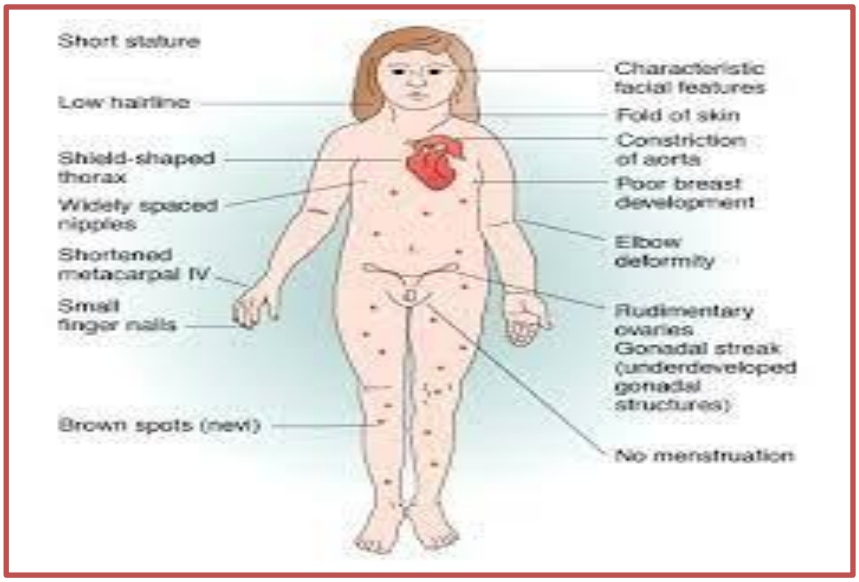


Figure (4-3): Turner's syndrome: 45XO syndrome

ABDOMINAL EXAMINATION

The abdomen is fully examined using inspection, palpation, percussion, and auscultation. Division of the abdomen into 9 areas, or 4 quadrants will facilitate the mission (see figure 2-12).

A. **<u>Inspection:</u>** the following is inspected:

i. *Contour*: *Normal contour* of abdomen of average non pregnant female is flat with supra-public fullness. *Localized bulge (swelling) is noted &described.*

ii. *Movement of the anterior abdominal wall with respiration*

iii. *Subcostal angle*, whether it is acute, or obtuse due to abdominal distension.

iv. *Umbilicus*: position, shape, hernia, scars, sinuses, pigmentation, dilated veins.

v. *Skin:* regarding pigmentations, scars (specify site, type, length, healing pattern), sinuses, dilated veins.

vi. *Hernia orifices*; umbilical, para-umbilical, epigastric, inguinal, femoral.

vii. *Pubic hair*: the upper border is inspected whether transverse, or triangular. It is normally transverse, but when it is triangular with its apex reaches the umbilicus, it may indicate androgen excess. Hair is absent in *testicular feminization syndrome* (female presents with primary amenorrhea).

B. **Palpation:**

i. ***Superficial palpation:*** the 9 regions are palpated superficially in a clockwise or anti-clockwise pattern for *tenderness, rigidity, or superficial masses.*

ii. ***Deep palpation:*** the abdominal organs are palpated for enlargement as follows:

- **The Liver:** The technique is described before in obstetric case taking.
- **The Spleen:** we start palpation from the *right iliac fossa* upwards towards the left costal margin. The normal spleen is not palpable below the costal margin.
- **The Renal angles:** The technique is described before in obstetric case taking.
- **Palpation of any other mass:** to determine its *site, size, shape, borders, surface*, *consistency, movement in different axes, skin over it, and the draining lymph nodes.*

C. **Percussion:** for detection of ascites (shifting dullness & fluid thrill tests) or to detect dullness over any abnormally palpated mass.

D. **Auscultation:**

The abdomen is auscultated for the intestinal sounds (normal average 7/minute), venous **'hum'** especially around the umbilicus in cases of portal hypertension.

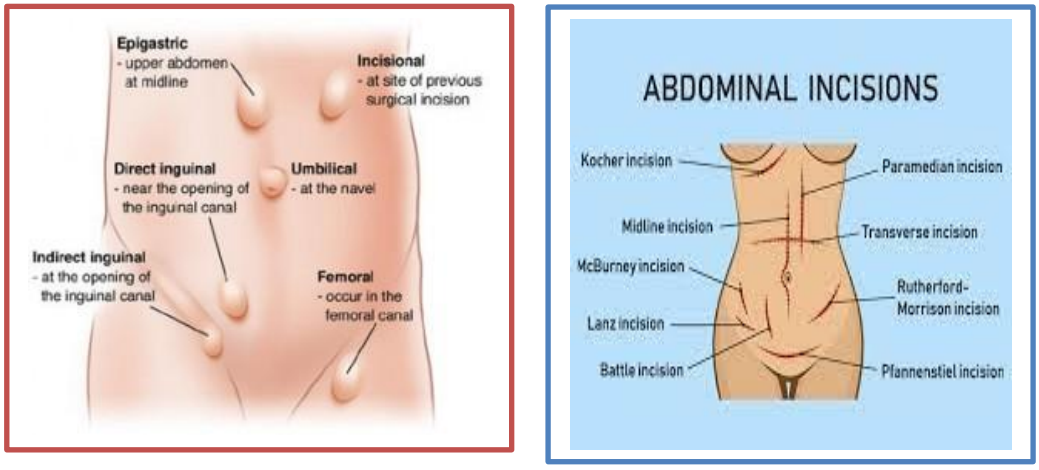


Figure (4-4): Anterior abdominal wall hernias (left), and scars (right)

LOCAL GYNECOLOGICAL EXAMINATION

It consists of vulvar *inspection*, *vaginal palpation*, *bimanual examination*, and *speculum examination*. Special tests are done under certain circumstances, and they are not routine.

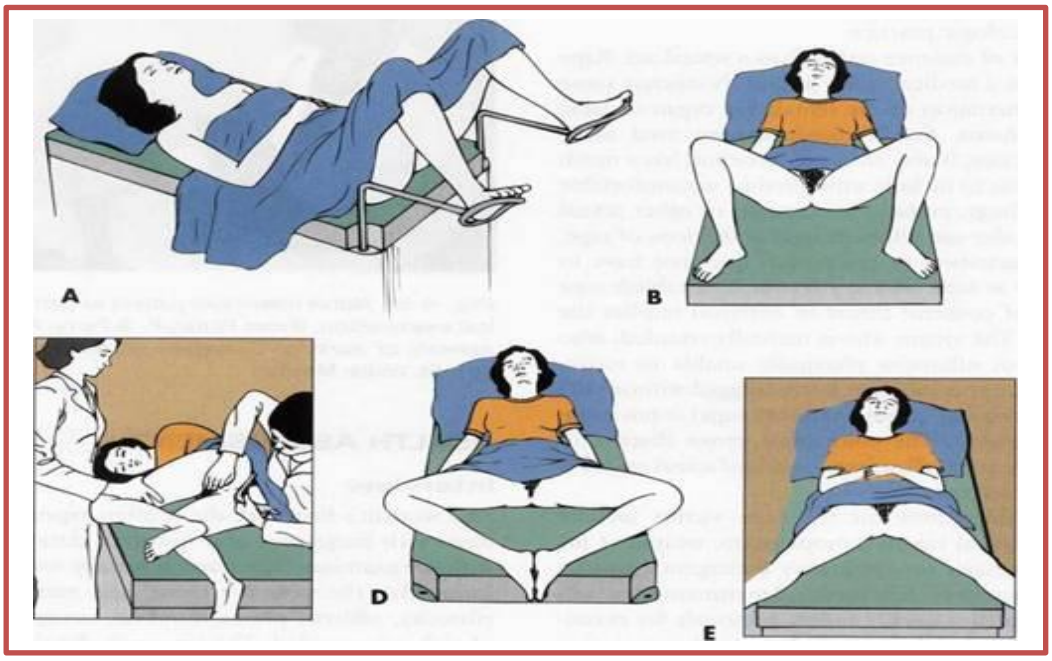


Figure [4-5]: Different positions for gynecological examination. *A= lithotomy position, B= dorsal position flexed knees, C= Right lateral position with Sims' speculum, D= frog position for children examination, E= dorsal extended knees.*

The standard position for gynecologic examination is the '*dorsal-lithotomy*' position. *Frog* position is used in children. Other positions may be used in certain circumstances; for example, the *Sims' position* (exaggerated left lateral position) is used for better visualization of the anterior vaginal wall as in vesico-vaginal fistula [Fig.4-5].

A]. **Vulval inspection:** [Fig 4-6].

The structures of the vulva & perineum are inspected systematically for their development & the presence of any abnormalities such as ***bleeding, discharge, masses, ulcers, sinuses, scars, or trophic changes*.** Any abnormality found should fully described. The patient is then asked to strain or cough to declare pelvic organ prolapse or stress urinary incontinence.

Inspect the following structures systematically:

1- *Mons pubis*: for its development, hairs, any abnormality.

2- *Labia majora*: for development, coaptation, and any abnormality.

3- *Labia minora & clitoris*: for their presence (they might be removed by circumcision), and any abnormality.

4- *The vestibule:* it is the diamond- shaped area formed by the meeting of both labia minora, with its anterior apex at the clitoris & its frenulum, and the posterior apex at the fourchette. The urethral orifice & the vaginal opening open in the vestibule. Any abnormality should be mentioned.

5- *The vaginal opening:* for gapping, prolapse or relaxation of the vaginal walls, or any other abnormality.

6- *The fourchette & posterior commissure*: the fourchette is the meeting of the posterior borders of both labia minora. It is torn following the 1st vaginal delivery. The meeting of the labia majora posterior forms the posterior commissure. There is a depression between the fourchette anteriorly & the posterior commissure posterior named '*fossa navicularis*'.

7- *The perineum*: Unlike the anatomical perineum that includes all the structures of pelvic outlet, the gynecological perineum is **only** the area between the vaginal opening anterior, and the anal orifice posterior. The normal perineum is one inch or more long. Short perineum is a predisposing factor to genital prolapse.

8- *Anal orifice*: is inspected for any abnormality. Link

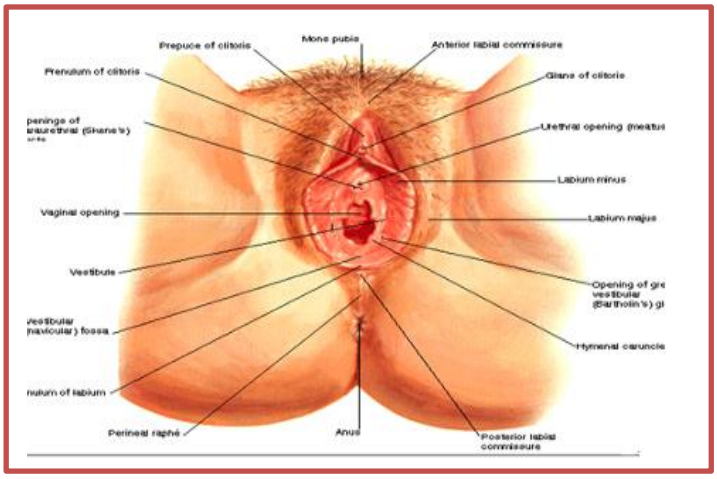


Figure (4-6): Structures of the vulva

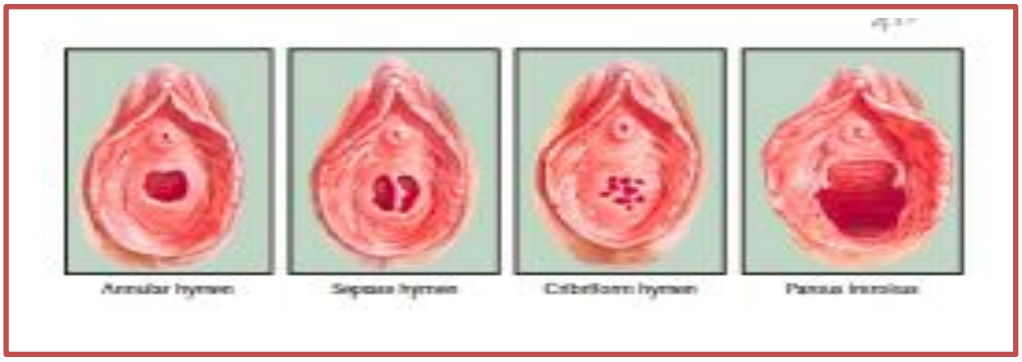


Figure (4-7): Different types of the hymen

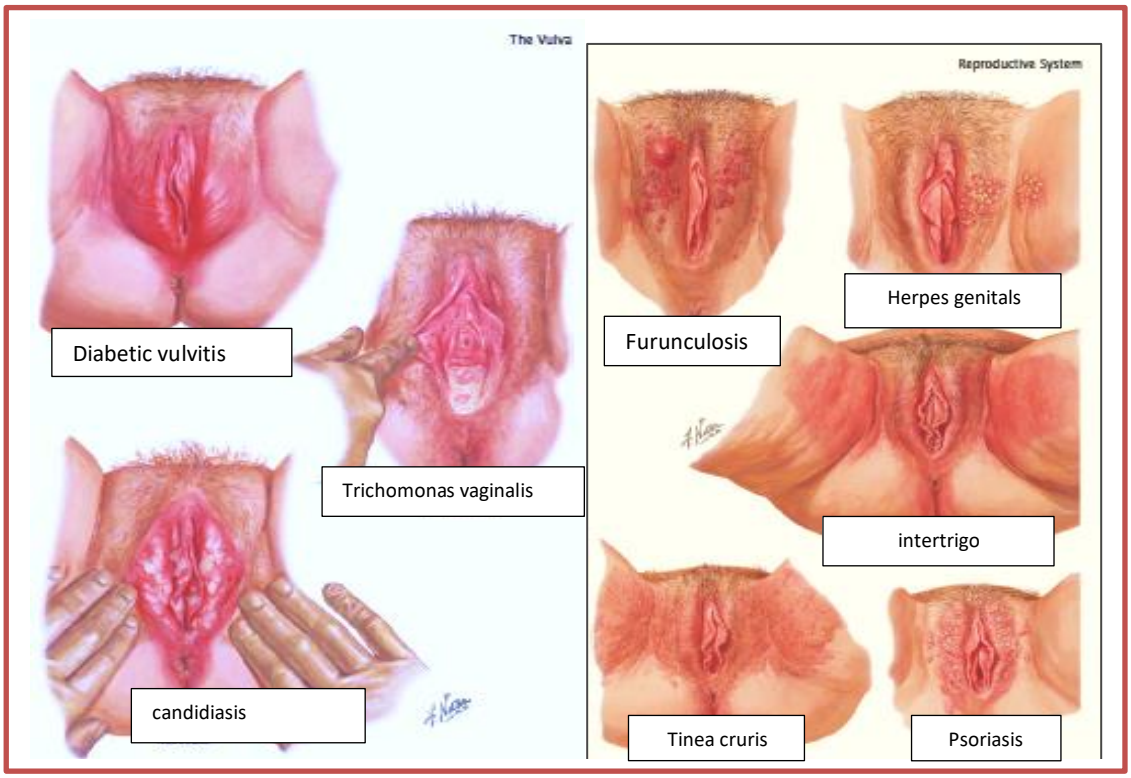


Figure (4-8-A): vulvar lesions on inspection

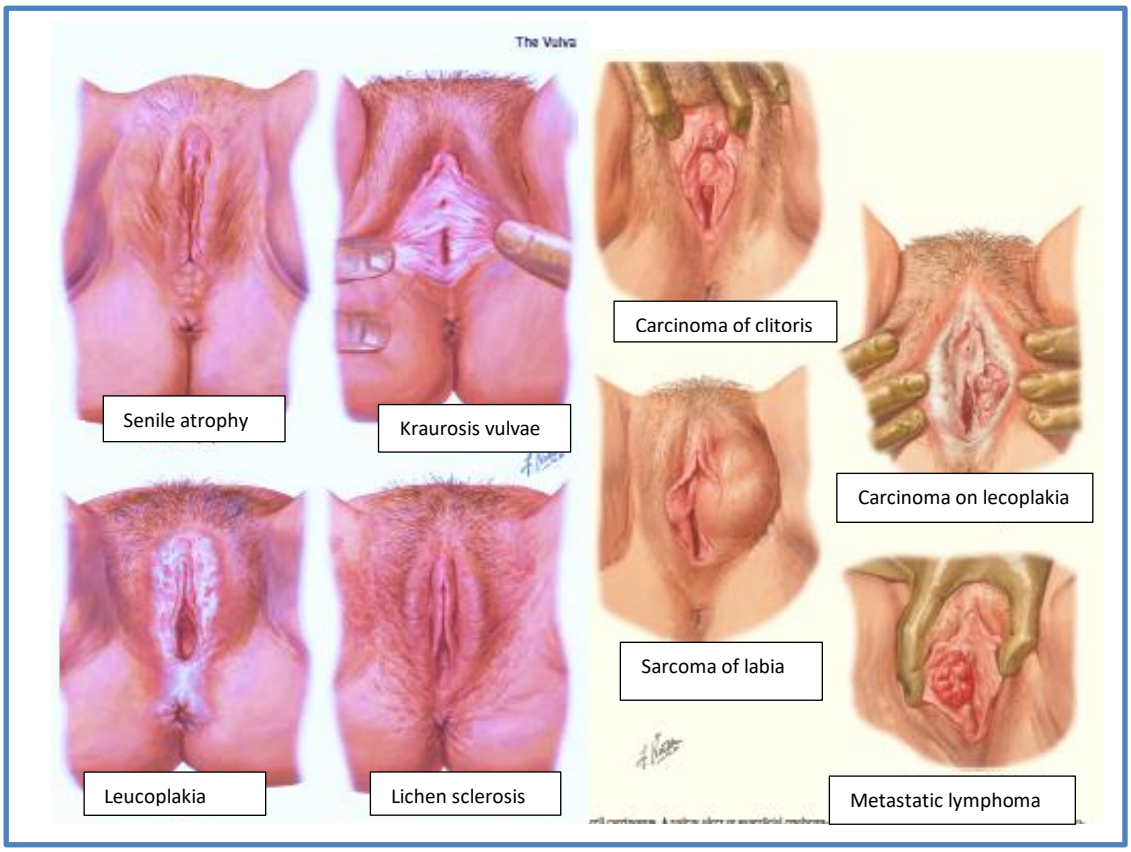


Figure (4-8-B): vulvar lesions on inspection

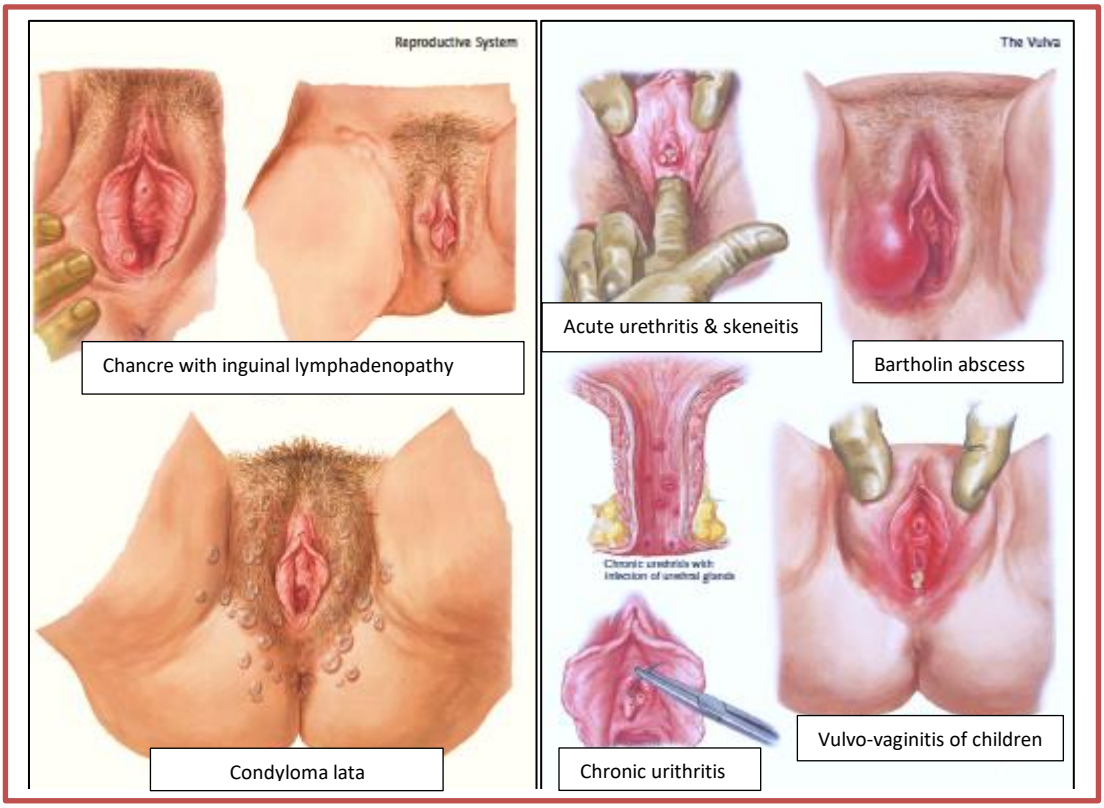


Figure (4-8-C): vulvar lesions on inspection

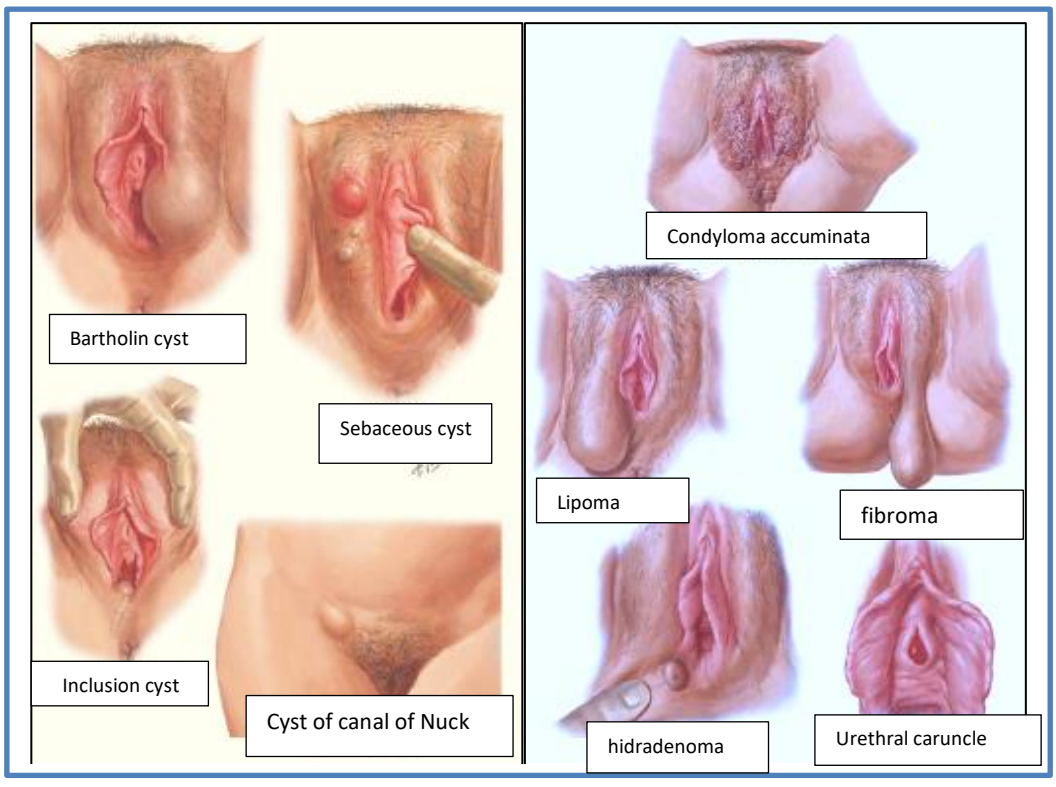


Figure (4-8-D): vulvar lesions on inspection

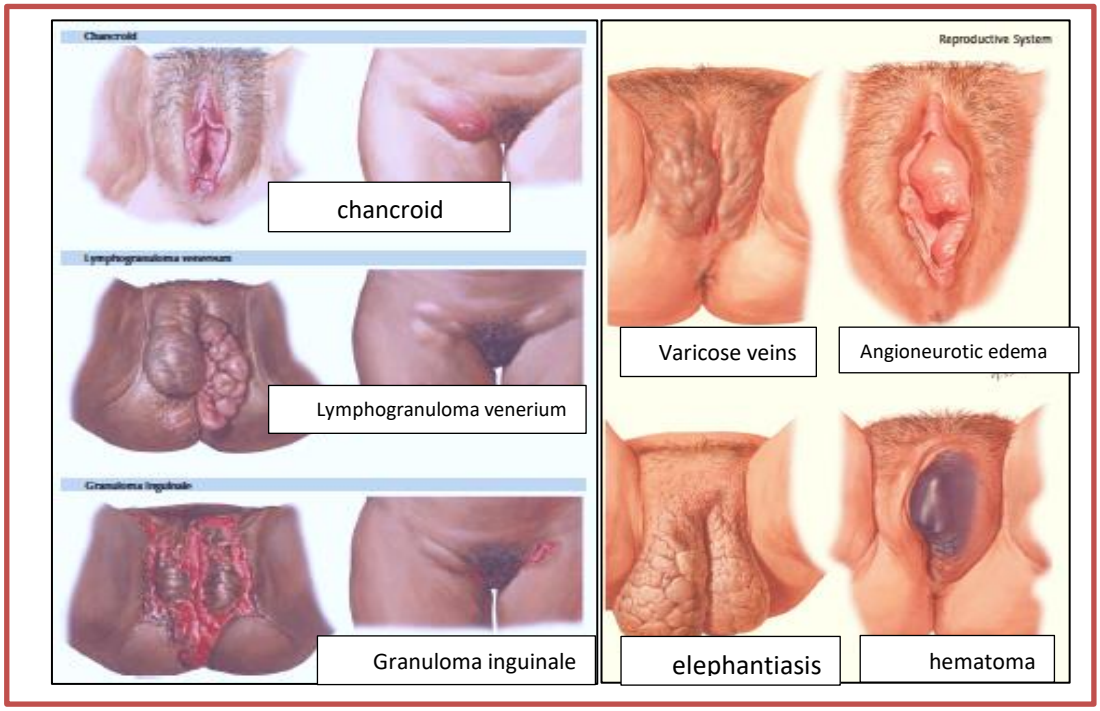


Figure (4-8-E): vulvar lesions on inspection

B]. <u>Vaginal Palpation [P/V]:</u>

While the patient in dorsal position [fig.4-9], the lubricated index & middle fingers of the gloved right hand are introduced through the vaginal opening, while separating the labia with the index & thumb of the left hand. The introduced fingers are put edgewise until the middle of the vagina then they are turned 90 degrees. The direction of the intromission should take the vaginal axis i.e.,upwards, and backwards.

Figure [4-9]: Vaginal palpation

The following structures are palpated in *sequence*.

1- ***<u>Vaginal walls</u>***: the anterior, posterior, and lateral vaginal walls should be palpated for *ulcers*, *masses,* or any other abnormality.

2- ***<u>Vaginal fornices</u>***: the anterior, posterior, and lateral fornices are palpated. Masses or nodularity in the cul-de-sac are palpated through the posterior vaginal fornix. The patient is asked to strain while the examining fingers in the posterior fornix to diagnose enterocele if present.

3- ***The portio vaginalis of the cervix*** is palpated for its *size*, *direction*, *shape*, *consistency, surface, mobility, shape & level of the external Os.* Normally the portio is about one inch long, pointing towards the posterior fornix (in anteverted-flexed uterus), conical in shape, firm in consistency, smooth surface, mobile with no tenderness on mobility. The external cervical os is a transverse slit in shape in women with prior vaginal delivery, while it is rounded in women with **no** previous vaginal deliveries (i.e., nullipara or previous deliveries were by cesarean sections). This difference in shape of the external cervical os is the result of the inevitable physiologic cervical tears occurring during labor. Normally, the external os is at the level of the ischial spines in the non-anesthetized patient. When it is below that level, uterine prolapse is diagnosed. Under anesthesia, the external os can be pulled (with a volsellum) down to the introitus in the absence of prolapse in a multipara.

4- ***Tone of pelvic floor muscle*** is evaluated by pressing against the muscles by the vaginal fingers, and estimating the muscle bulk by pinching the muscles at vaginal introitus between the examining fingers and the thumb figure [4-10]

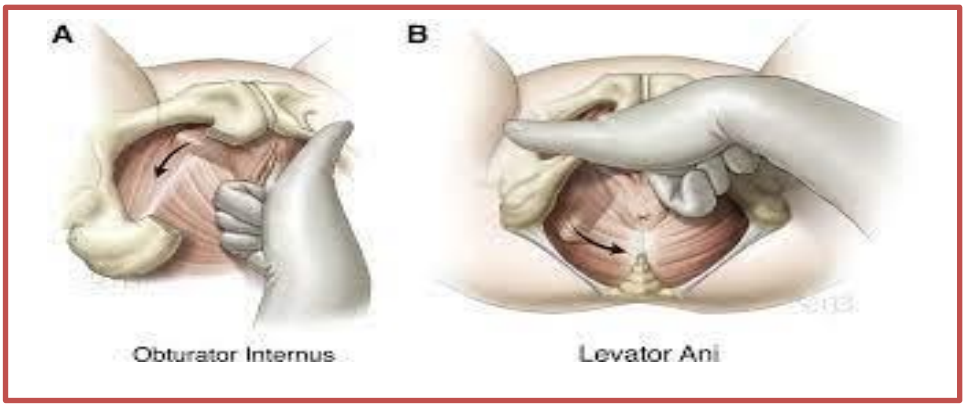


Figure [4-10]: Pelvic floor muscle tone testing

C]. Bimanual Examination: (Fig.4-11, 4-12 & 4-13)

- The vaginal fingers are put in the anterior fornix & the ulnar border of the left hand is put on the suprapubic region & both hands are approximated together. The body of the anteverted flexed uterus is felt between them. The uterus is palpated for **size, position, consistency, tenderness**, **surface, and mobility**. If the uterus is not found, it should be palpated through the posterior fornix.

- The vaginal fingers are then moved into the lateral vaginal fornix while the abdominal hand moved to the corresponding iliac fossa for assessment of the adnexa [Fig.4-12a & b]**.**

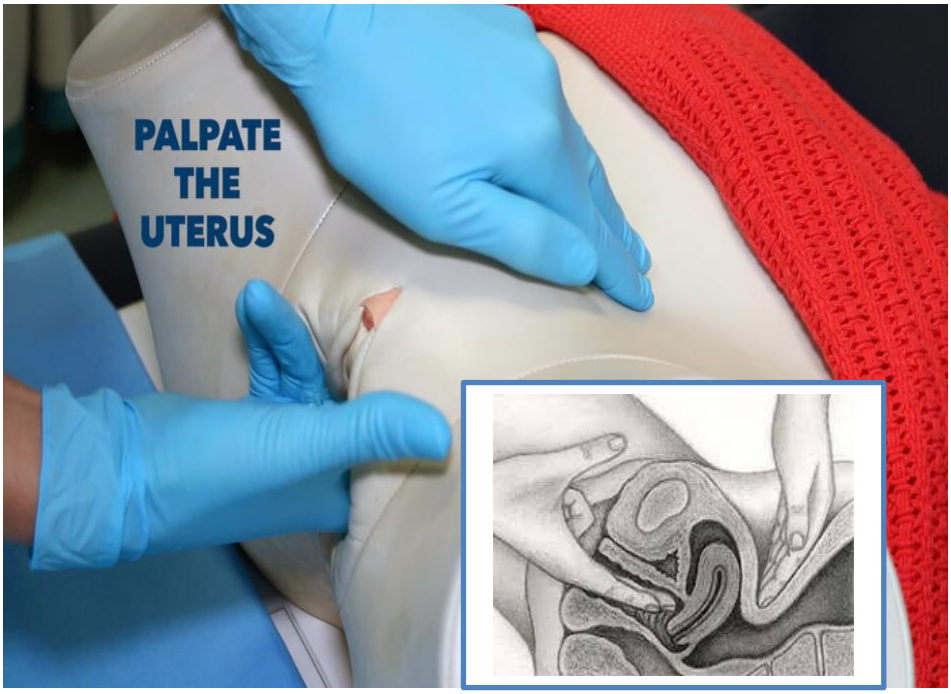


Figure [4-11]: Technique of bimanual examination

- Normally, the adnexa are *not palpable except in very thin patient* where the ovary feels as tender mass (the patient experiences a sickening pain like testicular pain in male). The contra-lateral adnexa are then palpated similarly.

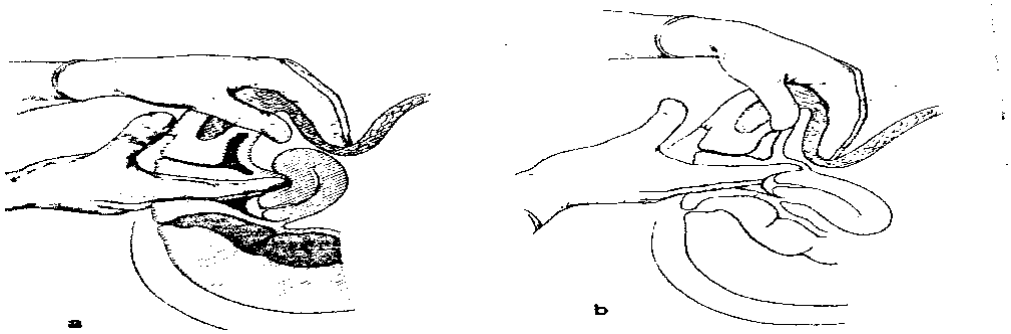


Figure [4-12]: Bimanual examination through the anterior fornix in AVF (a), and RVF (b)

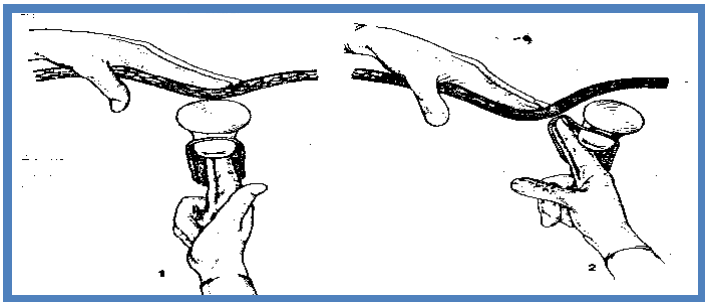


Figure [4-13-A]: Palpation of cul-de-sac (1) & right normal adnexa (2)

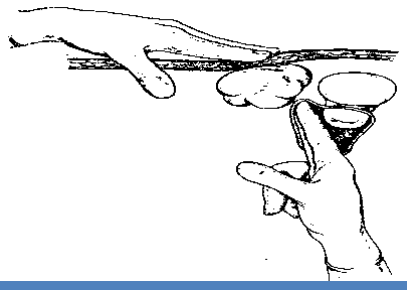


Figure [4-13-B]: Palpation of right adnexal mass

-The vaginal fingers are then moved to the posterior fornix, and the abdominal hand in the supra-pubic region, and both hands approximated to palpate the posterior aspect of the uterus & the cul-de-sac for any masses.

-Any palpable mass should be evaluated as regards its *site, size, shape, surface, consistency, borders, mobility, and tenderness.*

-The parametrium can be evaluated through the lateral fornices and evaluated as regards its indurations.

The vaginal fingers when withdrawn from the vagina are inspected for bleeding, or abnormal discharge.

- Bimanual examination can be used using a rectal finger (index finger) instead of the vaginal fingers in certain circumstances such as virgins, children, and neonates. Also parametrial evaluation is more informative especially in obese women if the internal finger is rectal [figure 4-13].

Figure [4-13]: Bimanual exam In Neonate girl.

D]. Speculum Examination: [Figs. 4-14 & 4-15]

The aim of speculum examination is direct visualization of the vaginal walls & the portio vaginalis of the cervix. For this purpose, different types of vaginal specula are used. The most used speculum in routine gynecologic examination is the double bladed, self-retaining **Cusco's** vaginal speculum. Other specula may be used under certain circumstances e.g., Sims' speculum which is used for visualization of the anterior vaginal wall as in diagnosis of vesicovaginal fistula.

The Cusco's speculum can be used with the patient lying either in lithotomy or in the left lateral position. After separation of the labia with the fingers of the left hand, the lubricated speculum in the right hand is introduced edgewise until it is halfway in the vagina, it is turned 90 degrees bringing the handle posterior, and then the introduction is continued. The blades are then opened to expose the cervix vaginal walls.

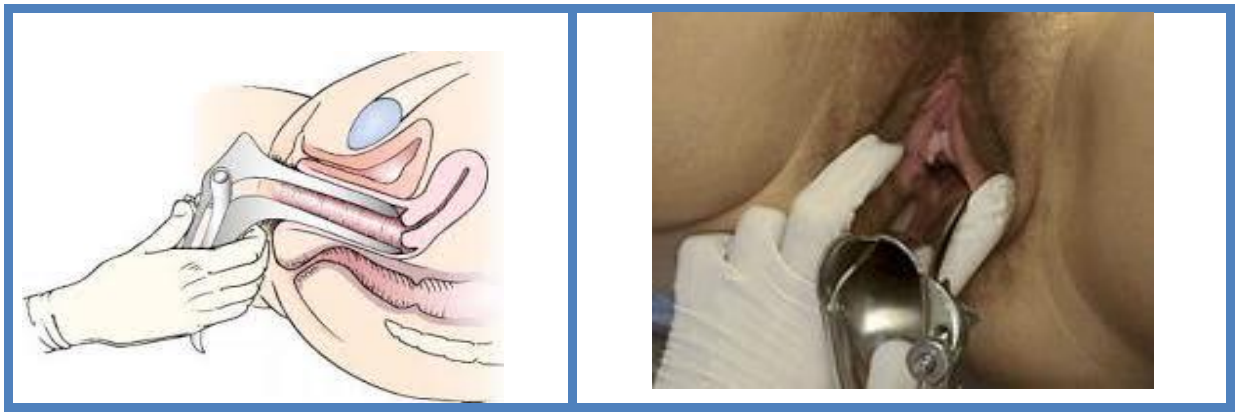


Figure [4-14]: Speculum examination

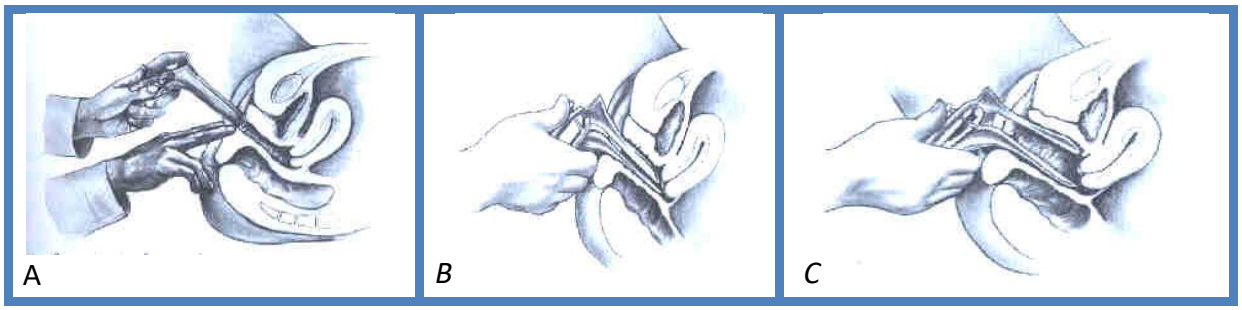


Figure [4-15]: Speculum examination in steps [A, B,C]

The vaginal portion of the cervix is visualized regarding its **size**, **color**, **shape**, **position**, **external os**, and any abnormality should be noted. The lateral vaginal walls are also seen for abnormalities. While the speculum is withdrawn, the anterior & posterior vaginal walls are inspected.

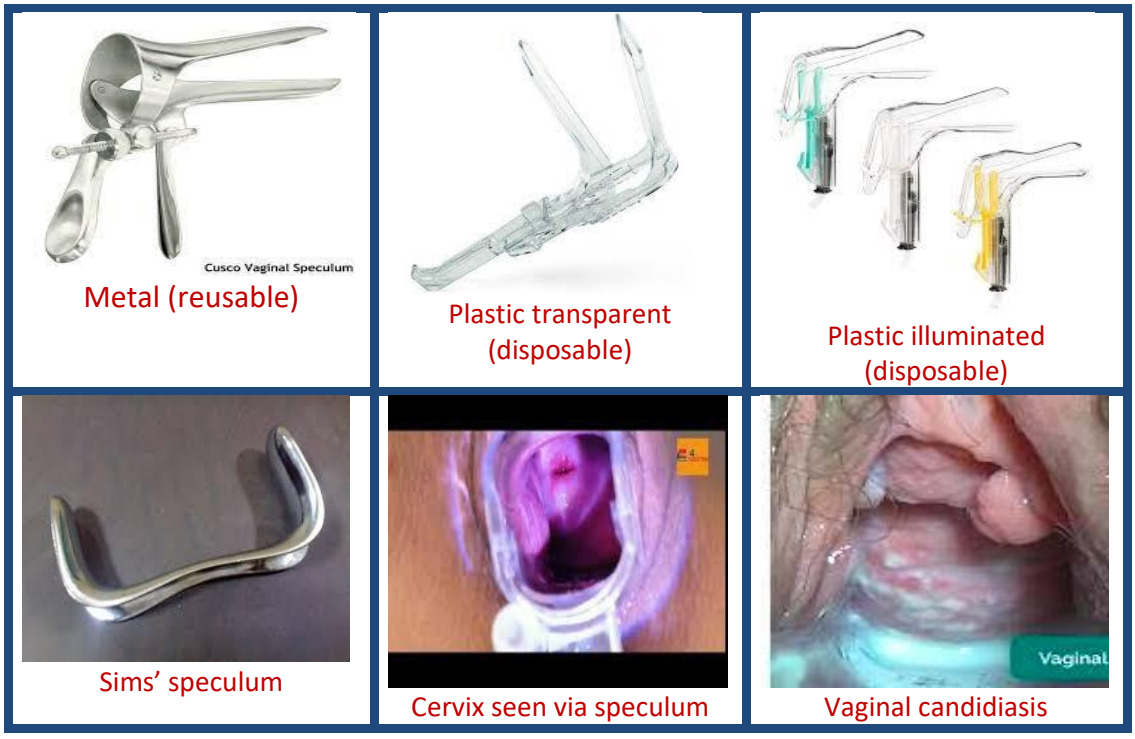


Figure (4-16): Different types of vaginal specula, speculum examination

- Speculum examination may be done second to vulvar inspection when cervico-vaginal swabs are needed for culture and sensitivity for infective microorganisms or
- cytology e.g., PAP smear. It is done before vaginal palpation with a dry sterile speculum to avoid disturbance of the vaginal medium; figure (4-17).

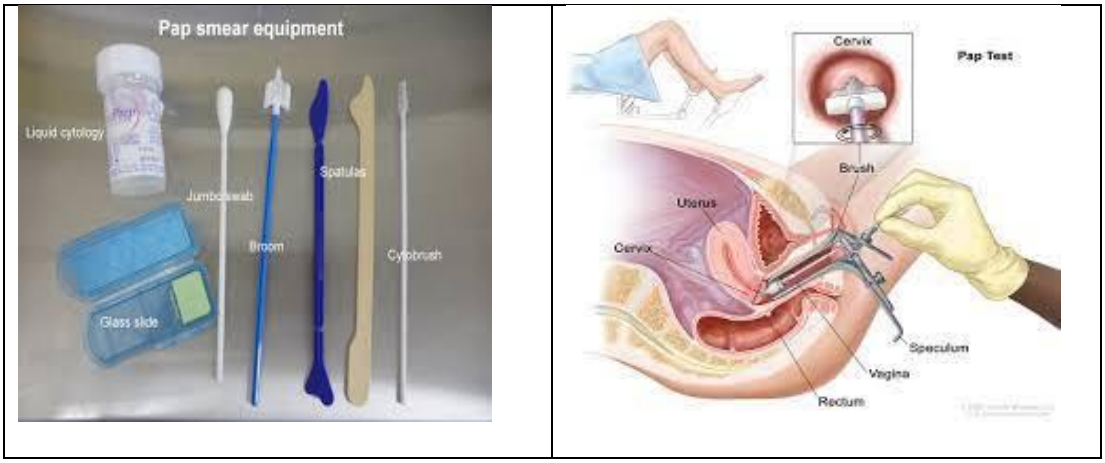


Figure (4-17): cervical cytology (pap-smear)

E]. Special Clinical Tests:

These tests are **not** part of **routine** gynecologic examination but indicated in certain cases. They include *uterine sounding, PR, combined PR/PV, clinical tests for urinary incontinence, clinical tests for pelvic mass, clinical tests for VVF, clinical tests for RVF, and tests for cervical cancer screening*.

1- ***Uterine sounding:*** the uterine sound is a malleable, graduated (in centimeters or inches) metallic rod used to probe the uterine cavity. The diameter of the sound is 3mm, except the knob which is 4 mm in diameter. The normal cervical os can admit the sound without prior dilation and without pain Fig. [4-18].

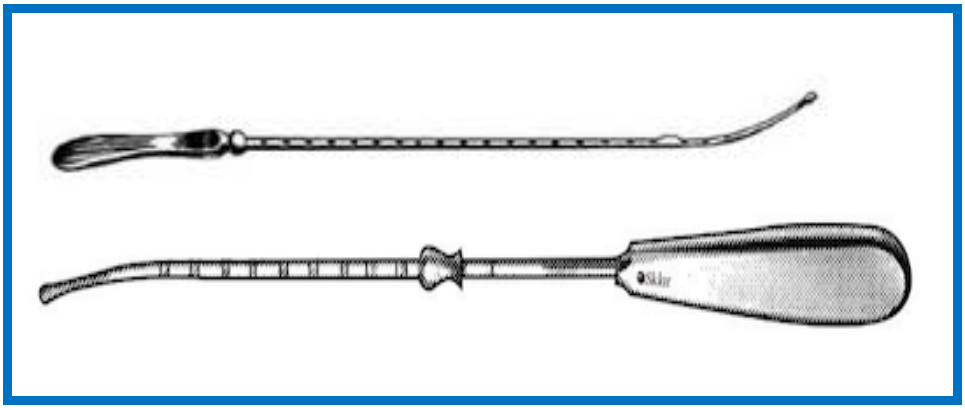
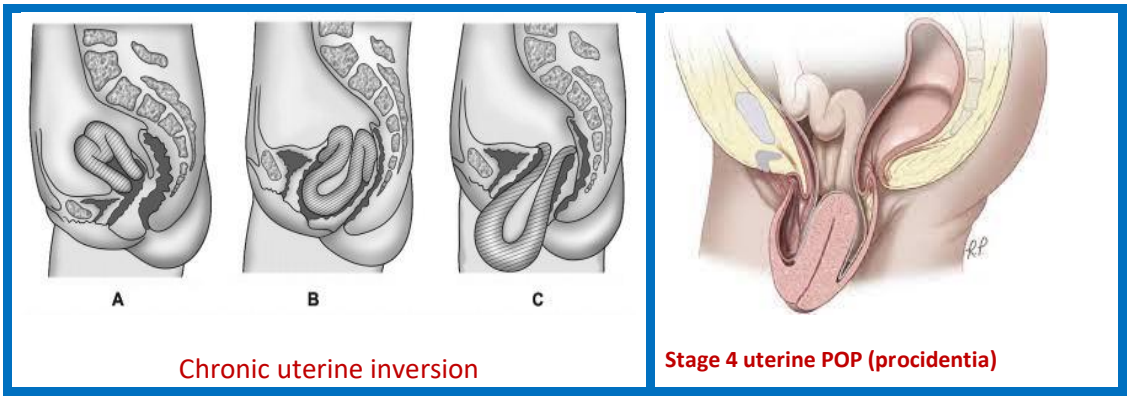


Figure (4-18): uterine sound

INDICATIONS OF UTERINE SOUNDING:

i. Measurement of the length of the cervico-uterine canal (normal 7-8 cm).
ii. Determination of the direction of the uterus [AVF or RVF].
iii. To differentiate uterine *inversion* from *sub-mucous* fibroid (Figure: 4-19)

iv. To differentiate sub mucous fibroid polyp (originating from the fundus) and cervical fibroid polyp.
v. Determination of the relationship of the uterus to any pelvic mass.
vi. In cases of prolapse it differentiate *true prolapse* from *congenital elongation of the portio vaginalis of the cervix.*
vii. Diagnoses supra-vaginal elongation of the cervix in vagino-uterine prolapse.
viii. Diagnosis of intrauterine masses e.g., sub-mucous fibroid, uterine septum, bicornuate uterus [these findings are only suggestive and should be further investigated].
ix. Diagnosis of intrauterine foreign body e.g., IUCD.
x. Probe test of friability for cancer cervix (Krobac's test).
xi. Click test for diagnosis of vesico-vaginal or urethra-vaginal fistulas.



Chronic uterine inversion

Stage 4 uterine POP (procidentia)

Figure (4-19): uterine sound can differentiate between chronic uterine inversion & procidentia.

2- ***Rectal examination [P/R]:***

The gloved index finger of the right hand is introduced into the anal canal after a moment of sustained pressure to one side of the sphincter to relax it. This is done while the patient is in dorsal or lateral position. The ano-rectal wall is explored digitally [fig. 4-20/left].

Rectal examination technique (on model)

Recto-vaginal examination

Figure (4-20): per rectal examination & rectovaginal examination.

Rectal examination is indicated in gynecology in the following conditions:
i . Pelvic examination in a *virgin* it substitutes P/V, and bimanual examination for evaluation of the uterus, adnexa, or pelvic masses.
ii. Diagnosis of parametrial infiltration in cancer cervix.
iii. Detection of mass in cul-de-sac.

iv. Diagnosis of rectal infiltration in gynecologic malignancy.
v. Differentiation between true & false rectocele.
vi. Diagnosis of recto-vaginal fistula.

3- Recto-vaginal examination: It is done by the *middle* finger in the *anal* canal & the *index* in the *vagina* (Fig. 4-20/ right)

Recto-vaginal examination is indicated in the following conditions:

i. Evaluation of the recto-vaginal septum e.g.in endometriosis.
ii. Diagnosis of enterocele (Malpas' test).
iii. Evaluation of the tone of levator ani muscle in cases of prolapse pre-operatively.
iv. Diagnosis of recto-vaginal fistula.

4- Clinical Tests for Stress Incontinence:

i. **Marshall stress test**: with about 200 ml of urine in the bladder (=some desire to urinate), the patient is asked to cough, *a positive test* is indicated if there is a brief spurt of urine loss limited to the period of increased intra-abdominal pressure. If the test is negative in supine position, it should be repeated in standing position.

ii. **Yousef's test**: this test is done to *detect inhibited incontinence in cases of pelvic organ prolapse* (*the patient has prolapse & she is continent)*. With the use of a volsellum on the anterior cervical lip, the bladder neck is pushed upwards, and the patient is asked to cough. If the urine comes down through the urethra, the patient has *inhibited incontinence* that may be evident after correction of prolapse.

iii. **Bonney's test**: this test is done in patients with *prolapse & urinary incontinence to differentiate between incontinence due to descent of bladder neck (prolapse) and that due to intrinsic sphincteric weakness*. Two fingers are put in the vagina to push the bladder neck upwards, and the patient is asked to cough. If the urine comes out the urethra, there is weakness of the sphincter. If no urine comes out, the incontinence is due to prolapse (inhibited by correction of the bladder neck). Another possibility is that the incontinence is inhibited due to urethral compression by the vaginal fingers [*the next 3 tests were designed to avoid this misleading possibility*].

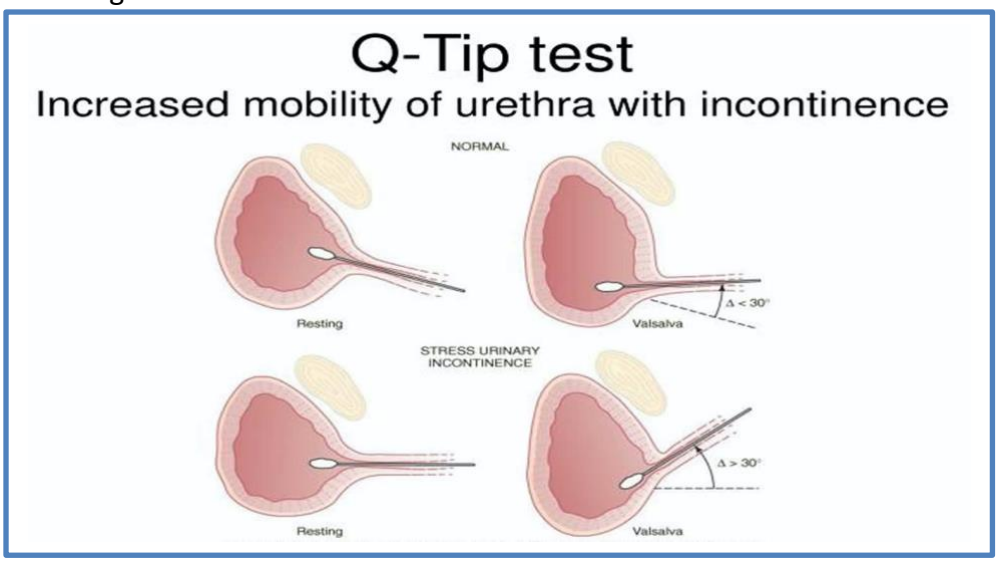
iv. **Marshall- Marchetti test:** it is exactly as Bonney's test but using Allis forceps to elevate the bladder neck instead of fingers to avoid urethral compression.

v. **Hodge-Smith pessary test**: it is exactly as Bonney's test, but the bladder base is elevated by inverted Hodge-Smith pessary.

vi. **Hodge-Linson test:** it is exactly as Bonney's test, but the bladder base is elevated by the largest contraceptive diaphragm.

vii. **Pad test**: it is done when all other tests fail to prove stress incontinence. A pre-weighed vulval pad is applied, and the patient is allowed to perform her usual activities for *one* hour, then the pad is taken off & weighed. Any increase in the weight of the pad (urine loss) is observed. The one-hour pad test is the most used pad test (international continence society [ICS], 1979).

viii. **Q-tip test** (figure; 4-21): the direction of the urethra is detected by a metallic catheter or by a *lubricated cotton swab*. Normally, the urethra goes up by about 15 degrees with the horizon. In stress incontinence the angle is increased (+/- 50 degrees) and this angle is further increased with straining.



Figure; (4-21): Q Tip test for urethral hypermobility

5- ***Clinical Tests or Procedures Used in Cases of Pelvic Mass:***

(a). To differentiate pelvi-abdominal from purely abdominal swelling: this is done abdominally by trying to get below the lower border of the mass. If the lower border is reachable, the mass is purely abdominal & vice versa.
(b). To differentiate large ovarian cyst from ascites: by doing shifting dullness; in ascites shifting dullness is positive, while in ovarian cyst dullness is constantly central with absent dullness in the flanks when the patient turned on her side.
(c). To differentiate uterine from adnexal masses: During bimanual examination the criteria of the mass are identified according to those listed in [table 4-3].

Table [4-3]: differences between uterine & adnexal mass on bimanual examination

Character	Uterine mass	Adnexal mass
1- Position	Usually, **central**	Usually, **lateral**
2- Transmission of movement to cervix	Present	Absent.
3- sulcus between the mass & uterus	Absent.	Present.
4-Consistency	Mostly solid	Cystic or solid

(d). Fluctuation tests: these tests are performed to determine cystic consistency of a mass. In large masses (>5cm diameter) we perform *double fluctuation test* by pressing one pole of the mass by one index & receive fluctuation by the other index at the opposite pole. In small masses, a modification of the test is done by grasping the mass in-between the index & the thumb of the left hand and pressing at the center of the mass by the index of the right hand, fluctuation will be perceived by the index & the thumb of the left hand.

Figure (4-22): Fluctuation test (A, B= large cyst, C= small cyst)

6. Clinical tests to diagnose vesico-vaginal fistula:

a) *Intravesical dye test:* the urinary bladder is filled with diluted solution of **methylene blue** or **indigo carmine.** careful inspection of the anterior vaginal wall & the vaginal vault with Sims' speculum for the colored (blue) urine.

b) *Three tampon test of Moir:* three vaginal tampons (or cotton balls) are placed one after the other. Bladder is filled with diluted methylene blue solution. The patient is asked to walk for 10-15 minutes. Then the tampons are removed & examined for the colored solution (blue); if the lowest tampon is the only colored one, there is no fistula but there may be transurethral urinary incontinence (stress or urge). If the upper tampon is wet & stained blue, there is a vesico-vaginal fistula. If the upper one is wet but not stained blue, there is a uretro-vaginal fistula.

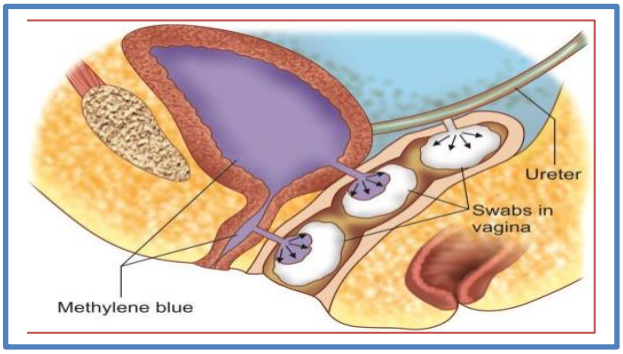


Figure (4-23): 3 cotton test for VVF.

c) *Flat tire test:* the patient is put in the knee-chest position, and the **vagina** is filled with water or saline. Intravesical instillation of air or CO_2 through a

urethral catheter. Localization of the small fistula is done by visualization of gas bubbles in the vagina.

7. Clinical Tests to Diagnose Recto-vaginal Fistula:

a) *Probe test:* a small caliber probe is pushed through the vaginal orifice of the fistula can be felt on rectal examination.

b) *Methylene blue test:* methylene blue instillation from the vaginal orifice can be seen in the rectum via a proctoscope.

c) *Carey's test:* a Foley catheter (10ml balloon) is inserted into the anal canal while the vagina is painted with concentrated solution of soap & water. The balloon is inflated with 10ml saline to make the anus tight. As the rectum is distended with air from a syringe attached to the Foley catheter, air bubbles in the vagina can locate the site of the fistula

8. Tests for cervical neoplasia screening:

a). Visual inspection acetic acid test (VIA-test):

- VIA can be done with the naked eye or with low magnification. Visual inspection with Lugol's iodine (VILI), also known as Schiller's test, uses Lugol's iodine instead of acetic acid.
- Performing a vaginal speculum exam during which a health care provider applies dilute (3-5%) acetic acid (vinegar) to the cervix.
- Abnormal tissue temporarily appears **white** when exposed to vinegar.
- Viewing the cervix with the naked eye to identify color changes on the cervix.
- Determining whether the test result is positive or negative for possible precancerous lesions or cancer.

Table (4-4): VIA -test findings:

VIA CATEGORY	CLINCAL FINDINGS
Test -Negative	No acetowhite lesions or faint acetowhite lesions; polyp, cervicitis, inflammation, Nabothian cysts.
Test-positive	Sharp, distinct, well-defined, dense (opaque/dull or oyster white) acetowhite areas—with or without raised margins touching the squamocolumnar junction (SCJ); leukoplakia and warts.
Suspicious for cancer	Clinically visible ulcerative, cauliflower-like growth or ulcer; oozing and/or bleeding on touch.

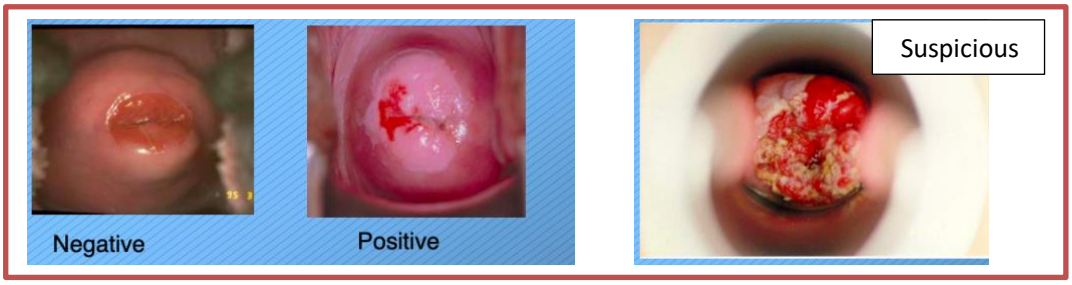


Figure (4-24): results of VIA test

(b). Pap smear or Pap test: It is a screening procedure for cervical cancer. It tests for the presence of precancerous or cancerous cells on cervix. During the routine procedure, cells from your cervix are gently scraped away and examined for abnormal growth. The procedure is an office procedure.

(c). Colposcopy: figure (4-25): A colposcopy is a simple procedure used to look at the cervix and vagina with magnification. It's often done if cervical screening finds abnormal cells in your cervix.

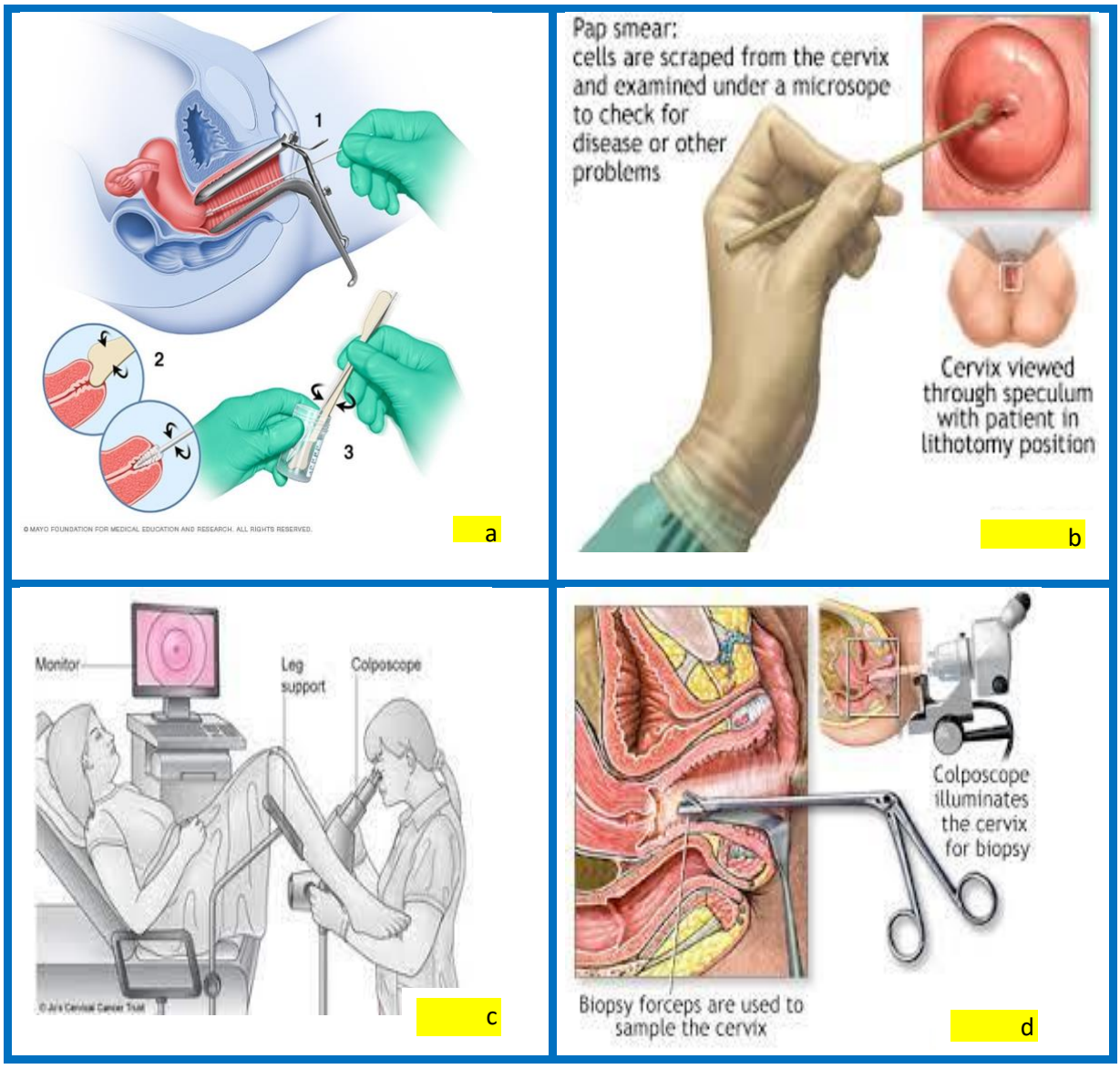


Figure (4-25): cervical smear procedure (a), (b) , colposcope examination (c), colposcope guided biopsy(d)

Figure [4-5]: HPV self-sampling.

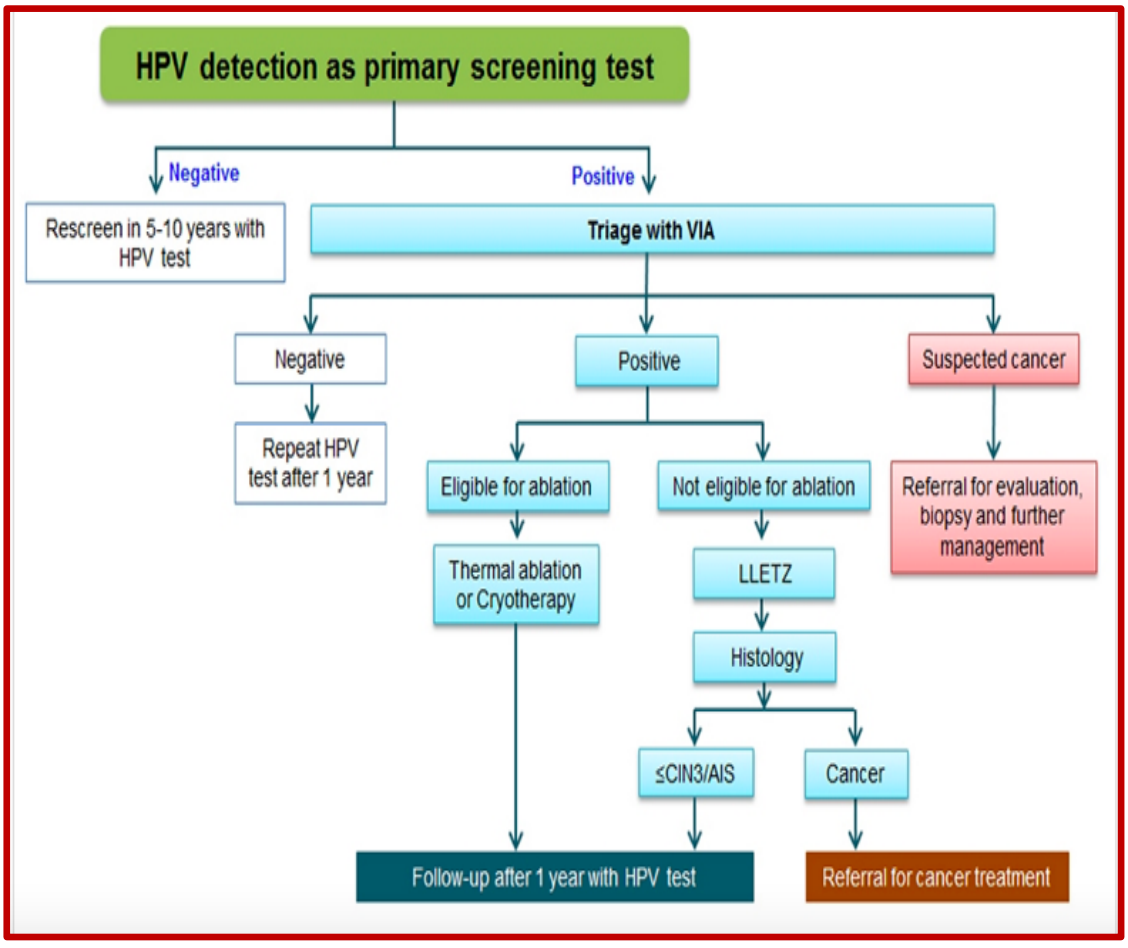


Table (4-6): management scheme for cervical screening tests

GYNECOLOGIC COMPLAINTS (S Y M P T O M S)

Gynecologic complaints are **five** including the following:

1.Pain **2. Bleeding.** **3. Vaginal Discharge**
4.Mass (swelling). **5.Infertility.**

PAIN

CHARACTERS OF GYNECOLOGICAL PAIN: Gynecologic pain may *colicky, dull aching, throbbing, itching, or referred pain*. A special gynecologic pain that occurs during sexual intercourse is called "*dyspareunia*" that may be superficial or deep.

1-Colicky pain: usually in the lower abdomen (supra-pubic region), and of uterine origin e.g., the colicky pain of menstruation which when tolerable is called *'menstrual molimina'* and this is a normal finding, but when it prevents the woman from performing her usual daily activities is called *'dysmenorrhea'* and this is abnormal finding that require treatment. Uterine colic could be found with menses during expulsion of endometrial casts, during expulsion of products of conception of undiagnosed pregnancy, or during disturbance of ectopic pregnancy. Uterine colic is mediated by prostaglandins and hence it will improve by anti-prostaglandin drugs.

2-Dull-aching pain: it is usually experienced by the woman in her lower back. This backache may result from gynecologic conditions such as *retro-verted- flexed uterus (RVF uterus)* due to *congestion* resulting from kinking of the uterine vessels. In some instances, this type of pain may be experienced in the lower abdomen in cases that lead to increased uterine size (e.g., tumors), or increases congestion *(e.g., pelvic inflammation).*

3-Throbbing pain: this type of pain usually indicates distension of a cavity to a degree that arterial pulsation in that region is felt painful to the patient. An abscess is the best example for such type of pain.

4-Referred pain: By '*referred'* we mean that this pain does not originate from the site where it is felt but instead it is referred from another organ

that shares innervations with the painful site. In gynecologic practice most back pains are due to conditions in the cervix and the stimulated nerves pass to the back via the *utero-sacral ligaments.* This theory is the basis for LUNA "laparoscopic uterine nerve ablation" used as a last resort management of intolerable chronic pelvic pain. In this operation the uterosacral ligaments are divided by bipolar diathermy. **[video]**

5-Itching: this type of pain is exclusive – in gynecology- for the *vulva* and is called **'***pruritus vulvae'*. It may result from many causes such as *monilial vaginitis, trichomonas vaginitis, vulvar dystrophies, vulvar intraepithelial neoplasia, chronic irritation of the vulvar skin* by abnormal discharges such as urine *(in urinary fistulas)*, or stools *(in recto-vaginal fistula),* or insect bites as lice *(pediculosis)* or *scabies*. The cause of pruritus may be general affecting other sites as *allergic conditions, psoriasis, diabetes mellitus, obstructive jaundice.*

6-Dyspareunia: (dys=difficult; pareunia= coitus). Dyspareunia means painful intercourse. Pain during sexual intercourse may be felt at the vulval or the vaginal levels '*superficial dyspareunia'* and this is usually due to inflammation or trauma, or it may be felt deep in the pelvis '*deep dyspareunia'* and usually due to pelvic inflammation, mass, or endometriosis.

Differential Diagnosis of Pelvic Pain

A]. *Acute pelvic pain:*

(i). Genital Causes:

(1). Pregnancy complications: ruptured ectopic pregnancy, abortion, degenerated leiomyoma.
(2). Acute infections: endometritis, pelvic inflammatory disease (acute PID), tubo-ovarian abscess.
(3). Adnexal disorders: hemorrhagic functional ovarian cyst, torsion of adnexa, twisted Para ovarian cyst, ruptured ovarian cyst.
(4). Recurrent pelvic pain; midcycle pain (Mittelschmerz pain), dysmenorrhea (1ry or 2ry)

(ii). Extra-genital Causes:

(1). Urinary: cystitis, urethritis, ureteral stones.
(2). Gastrointestinal: gastroenteritis, appendicitis, diverticulitis, intestinal obstruction, inflammatory bowel syndrome.
(3). Musculo-skeletal: abdominal wall hematoma, strangulated hernia.
(4). Others: acute porphyria, pelvic thrombophlebitis, aneurysm.

B]. CHRONIC PELVIC PAIN:

(i) . Genital Causes:

1). Endometriosis. 2). Pelvic adhesions.
3). Pelvic support disorder: pelvic relaxation, intended tensing the levator plate, excess mobility of pelvic organs (universal joint or Allen-Masters syndrome).
4). Pelvic vascular congestion.
5). Residual ovary: following hysterectomy with or without removal of one ovary.
6). Ovarian remnant syndrome. 7). Cervical stenosis.

(ii). Extragenital Causes:

1). Gastro-intestinal; constipation, irritable bowel syndrome, inflammatory bowel syndrome, diverticulitis.
2). Urinary; urethral syndrome, interstitial cystitis.
3). Musculo-facial or neurologic; pelvic floor tension myalgia, piriformis syndrome, nerve entrapment, ventral hernia, rectus tension strain, myofascial pain, back or postural changes.

ABNORMAL UTERINE BLEEDING

NORMAL UTERINE BLEEDING: includes the following:
1). Menstrual flow: which should be normal in amount & duration (table 1-1).
2). Puerperal bleeding: following delivery or abortion in the puerperium.
3). Birth crisis: it is vaginal spotting in the female newborn occurring because of withdrawal of the high levels of steroid hormones (of pregnancy) after delivery.
4). Ovulation bleeding: occurring in the mid-cycle due to the transient decrease of estrogen in the female's circulation following ovulation.

ABNORMAL UTERINE BLEEDING [AUB]: any Uterine bleeding other than the above-mentioned types is considered **abnormal**. AUB has been classified into **structural** or **functional** [FIGO 2018]. FIGO classified the causes of abnormal uterine bleeding into causes summarized in (PALM-COEIN). See table (5-1).

Table (5-1): Causes of abnormal uterine bleeding

TABLE 1

FIGO classification of abnormal uterine bleeding[3]

Structural causes
Polyps
Adenomyosis
Leiomyoma[a]
Malignancy and hyperplasia
Nonstructural causes
Coagulopathy
Ovulatory dysfunction
Endometrial
Iatrogenic
Not yet classified

FIGO, International Federation of Gynecology and Obstetrics.
[a]Further subdivided into "submucosal" and "other."

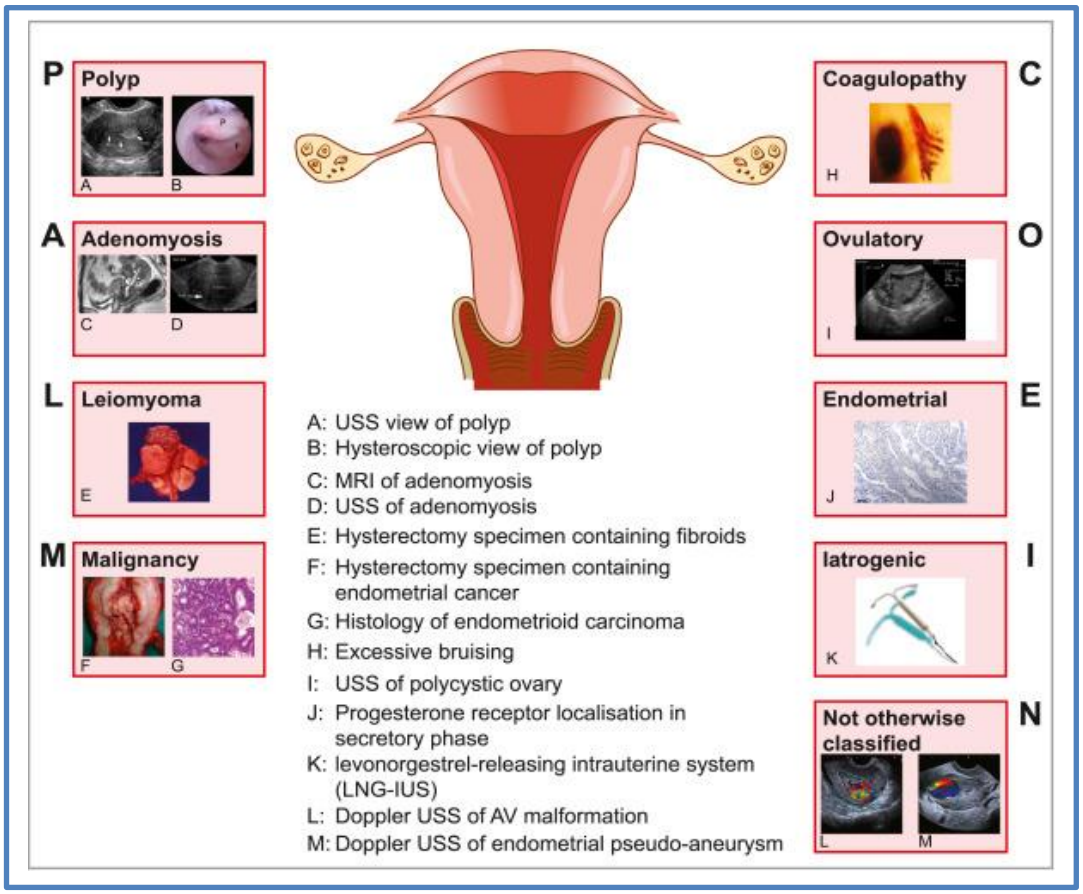


Figure (5-1): Diagnosis of abnormal uterine bleeding [note that each diagnostic tool is assigned by a letter from A-t0-M].

- Currently the case of abnormal uterine bleeding is assigned with the underlying cause of bleeding after full investigation for example, AUB-P means that the cause is abnormal uterine bleeding, and the underlying cause is uterine polyp.

Another example AUB-O means the patient had abnormal uterine bleeding and the underlying cause is ovarian dysfunction.

- The traditional classification of AUB including metrorrhagia, meno-metrorrhagia, polymenorrhea, polymenorrhagia, Intermenstrual bleeding, post-menopausal bleeding, and contact bleeding **are no longer used in diagnosis** as they are non-informative and do not give any clue about the underlying cause of bleeding.

- The 2018 FIGO classification of AUB included a **new** classification of uterine leiomyoma (fibroids) dividing them into 2 main categories (according to the AUB); **Submucous** category, and **Other**. Each category is further classified according to their relation to the endometrial cavity. See figure (5-2).

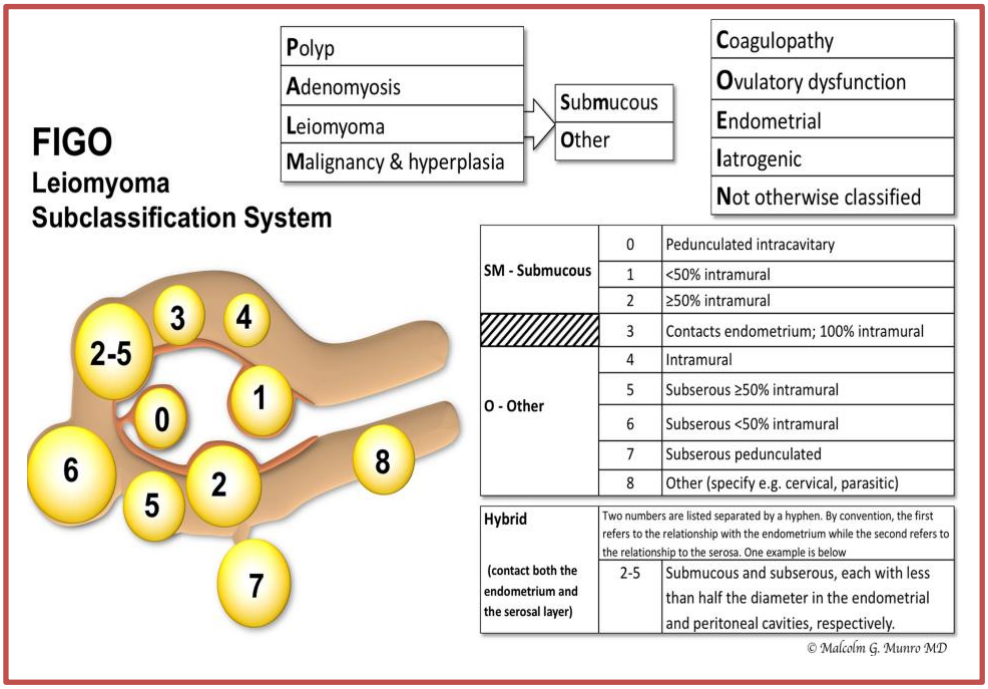


Figure (5-2): FIGO classification of leiomyoma (fibroid)

Causes of AUB after the menopause:

(1). **Senile atrophic endometritis**, [AUB-E] due to estrogen deficiency, and this is the most common cause.
(2) **Endometrial hyperplasia** [AUB-M-hyperplasia], especially in obese women due to the presence of extra-ovarian source of estrogen [E1] because of conversion of androgens in the peripheral adipose tissue.
(3) **Endometrial carcinoma** [AUB-M- malignancy]; although it is not the most common cause, it should be excluded in every case of post-menopausal bleeding as it is the most serious condition.
(4) Bleeding due to post-menopausal hormone replacement therapy [AUB-I].
(5) Coagulation defects [AUB-C].

AMENORRHEA:

- literally, amenorrhea means '*without menses*. Amenorrhea is the absence of menstruation.
- Amenorrhea has been added to the 2018 FIGO classification of AUB (table 1-1).
- Amenorrhea may be primary or secondary.
- ***Primary amenorrhea*** is diagnosed if *(A) the absence of menstruation by the age of 14 years in the absence of growth or development of secondary sex characters, or (B) no menstruation by the age of 16 with or without growth or development of secondary sex characters.*
- ***Secondary amenorrhea*** *is the absence of menstruation for 6 months or more or for period equivalent to that of previous 3 consecutive cycles in a woman who was previously menstruating.*

Physiologically menstruation is absent in the following circumstances:

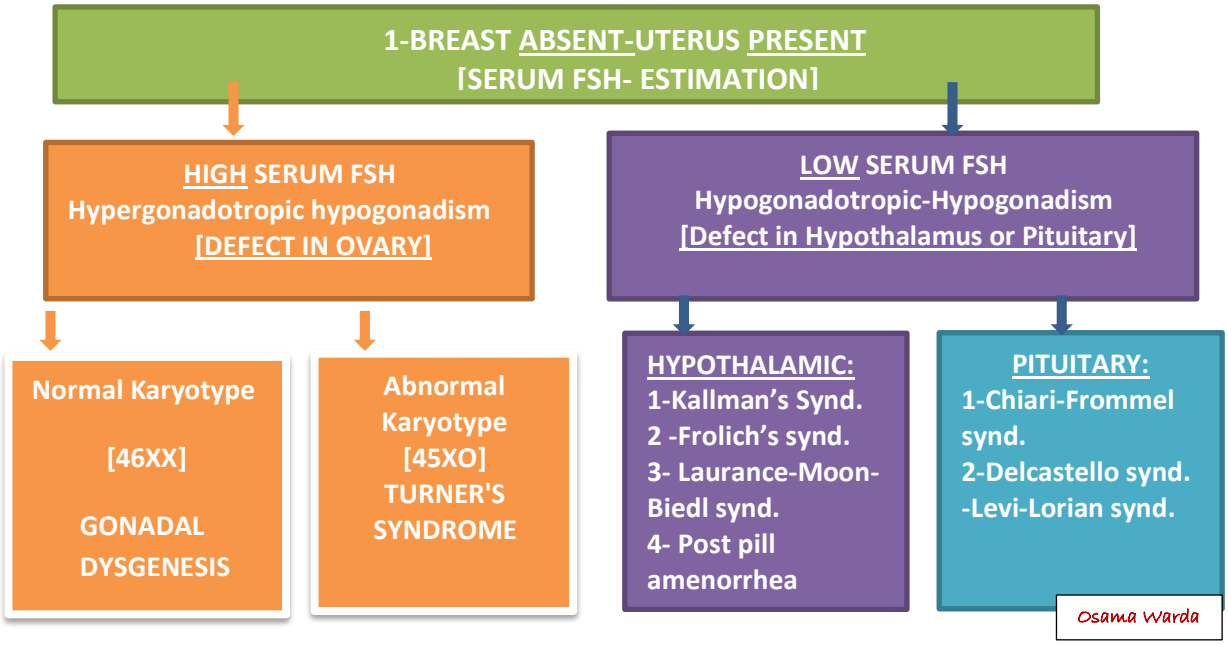
1) Before puberty [the hypo-thalamic-pituitary-ovarian axis is immature]
2) After menopause [ovarian follicles have been depleted]
3) During pregnancy [ovulation is suppressed & the uterine cavity is filled with the growing pregnancy after 14 weeks]. What do you know about *super-fetation?*

- Amenorrhea may be ***false*** (i.e., cyclic shedding of the endometrium occurs monthly, but blood does **not** show out due to obstruction in the outflow tract) & it is called ***Cryptomenorrhea,*** or amenorrhea may be ***true amenorrhea*** (due to abnormalities in the hypo-thalamic-pituitary-ovarian-uterine axis).

For normal menstruation to occur there must be intact hypothalamus to produce gonadotropin-releasing hormone [Gn RH] that stimulates an intact pituitary gland to produce FSH & LH hormones upon which the ovarian follicular growth & maturation depend. Estrogen is produced by granulosa cells of the growing follicles & progesterone is produced from the corpus luteum after ovulation. A normal endometrium is that contains receptors for estrogen and progesterone. Growth of the endometrial glands & later shedding under the effect of these hormones eventually leads to menstruation. Moreover, for the menstrual blood to get access outside the body there must be patent outflow tract. Any abnormality of this sequence of events may lead to amenorrhea.

- The following is a scheme for diagnosis of *primary amenorrhea* based on evaluation of the breast (reflects estrogen), and the uterus (reflects end-organ function). The case of primary amenorrhea falls in one of 4 groups:

1. Breasts absent- uterus present group.
2. Breast developed- uterus absent group.
3. Breasts absent- uterus absent group.
4. Breast developed- uterus present group.



2- BREAST DEVELOPED- UTERUS ABSENT

This condition is found only in 2 conditions, androgen insensitivity (=testicular feminization syndrome), and Mullerian agenesis; the difference in both conditions is listed in [table 5-2]

Table [5-2]: differences between androgen insensitivity syndrome & Mullerian agenesis

Item	Androgen insensitivity	Mullerian agenesis
1- Axillary & pubic hair	Absent	Present
2- Serum testosterone	Male level	Female level
3- Karyotyping *	46XY	46XX
4- Gonads	Testes (mostly inguinal)	Normal ovaries
5- Fertility	Impossible	Possible via surrogate uterus (she will be the genetic mother)
6- Gonadectomy	Indicated before 25 years age (protect against malignancy)	Contraindicated
7- Inheritance	X-linked	Not hereditary

Osama Warda

* The most important differentiating point is karyotyping.

3-BREAST ABSENT- UTERUS ABSENT

- This is a very rare condition.
- Karyotype is **46XY** (i.e., genetically males) in all.
- It is due to enzymatic deficiency such as

  [a]. 17, 20 desmolase deficiency,

  [b]. 17 alpha- hydroxylase deficiency in 46XY individuals, and

  [c]. Agonadism.

- Those patients *do not respond* to exogenous estrogen replacement to help development of secondary sex characters such as breast development, hence the feminine constitution.

4- BREAST DEVELOPED- UTERUS DEVELOPED

[Local Examination is performed]

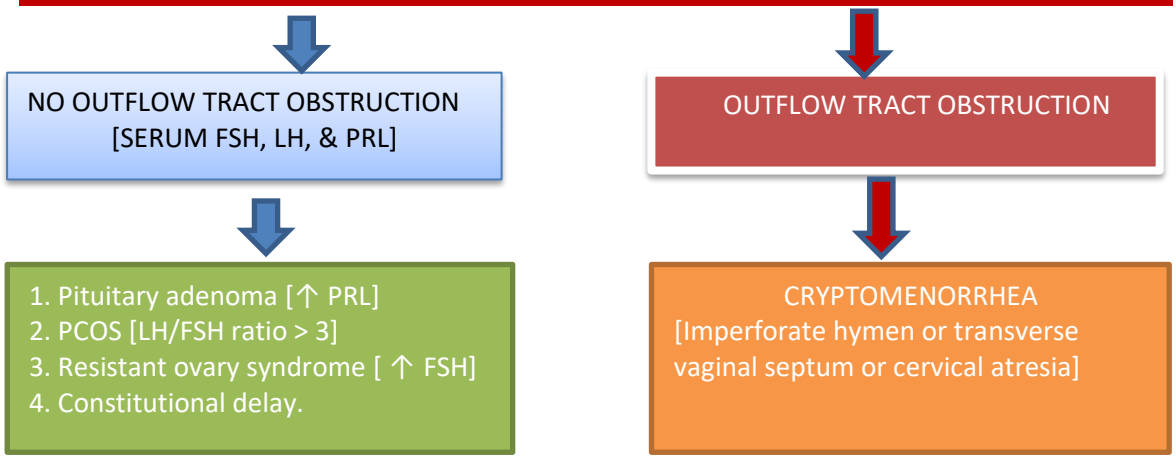


TABLE (5-3): Summary of clinical subtype of 1ry amenorrhea

Breast	Uterus absent	Uterus present
Absent	17,20 desmolase deficiency	Turner synd. (45XO)
	17 α hydroxylase deficiency (46XY)	Gonadal dysgenesis
	Agonadism	17 α hydroxylase deficiency (46XX)
		Hypothalamic failure
		Pituitary failure
Present	AIS [androgen insensitivity synd.]	
	Mullerian agenesis	

Osama Warda

SECONDARY AMENORRHEA: is the absence of menstruation for 6 months or more or for a period equivalent to that of previous 3 consecutive cycles in a woman who was

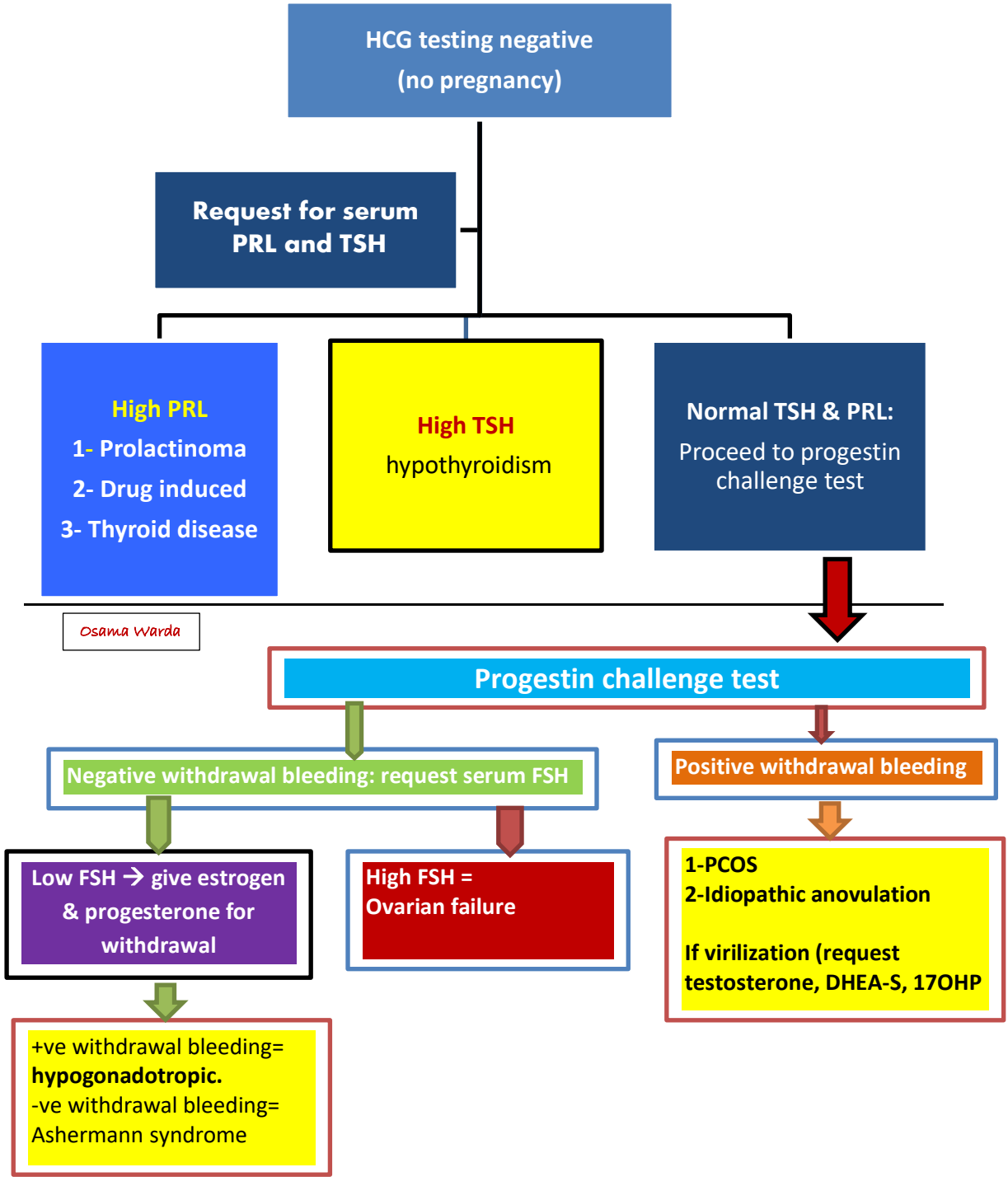
previously menstruating. To reach the cause secondary amenorrhea, we follow this scheme:

① The 1st step is to exclude pregnancy

② The second step (if not pregnant) is to evaluate Prolactin and TSH→

③ If both revealed normal, then

④ Test the endometrial responsiveness by progestin withdrawal test.



VAGINAL DISCHARGE

[A]. Normal vaginal discharge:

A small amount of vaginal discharge is normal in adult life. The *composition* of normal vaginal discharge includes tissue fluid, cell debris, carbohydrate, lactobacilli, and lactic acid. The normal pH is about 4.5, a degree of acidity which inhibits the growth of organisms other than the lactobacilli (i.e., one of the natural barriers).

Sources of vaginal discharge:

1- *The vulva*: the greater vestibular glands (Bartholin glands), glands of vulvar skin.
2- *The vagina*: there are no mucosal glands. The vaginal 'secretion' is a transudation from tissues & capillary of the mature vagina. In addition, there are desquamated epithelial cells which liberate glycogen upon which the lactobacilli act converting the glycogen into lactic acid.
3- *The cervix:* it is alkaline mucous secretion of the cervical glands, which becomes copious and watery during ovulation. It is rich in sodium chloride, thus ferns when dried on a glass slide and seen under the microscope (ferning), figure (5-3)
4- *The uterine glands*: also discharge into the vagina.

Criteria of normal discharge: the normal discharge is scanty *volume* [the need to wear a pad or tampon continuously suggests excessive discharge], of white *color*, usual characteristic *odor* [resulting from the action of bacteria on the apocrine sex glands], not associated with itching, or excoriation of vulvar skin.

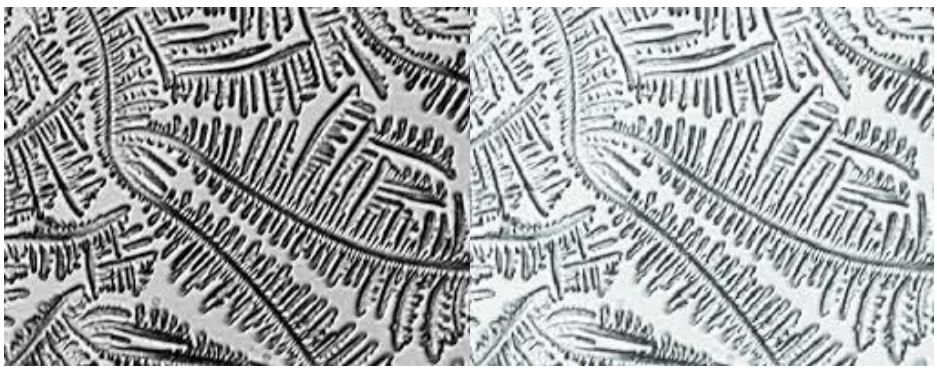


Figure [5-3]: Ferning of cervical mucous due to crystallization of its sodium chloride content

B-Leucorrhea:

Leucorrhea means an excessive amount of *normal* discharge. It is a very subjective assessment (i.e., differs according to the type of the lady). The patient will complain of constantly having to change her clothes, but there will be no irritation, and examination will reveal normal findings. It requires no treatment apart from reassurance. Leucorrhea may be found in the following conditions:

1. Chronic constipation.
2. Incomplete sexual act (i.e., sexual excitement without satisfaction-orgasm)
3. Genital descent

4. Retro-verted flexed uterus [RVF].
5. Pelvic floor relaxation in multipara.
6. Pregnancy.
7. Benign pelvic masses e.g., fibroid.
8. Idiopathic with no definite cause.

C-Abnormal vaginal discharge:

Any vaginal discharge other than described above-regarding its *color*, *odor*, *composition*, and *associated* complications- is considered abnormal. The following are examples of abnormal vaginal discharge:

1-Monilial discharge:

It is scanty, white, curdling discharge adherent to vaginal mucosa, associated with itching *[pruritus vulvae]* which is usually out of proportion of the amount of discharge. It is a fungal infection caused by candida albicans and non albicans species. It flourishes in acidic vaginal medium. It is an opportunistic infection occurring in conditions with lowered immunity such as pregnancy, immunosuppressive therapy, diabetes mellitus, prolonged antibiotic therapy, chronic iron & folic acid deficiency. Final diagnosis is by laboratory culture & under the microscope the mycelia & spores of the fungus can be seen.

2-Trichomonas discharge:

It is manifested in acute infection with trichomonas vaginalis [a protozoan infection]. The discharge is copious, yellowish, offensive, irritant, associated with inflammation of the vagina “strawberry vagina”, or “flea-beaten vagina”.

3-Bacterial vaginosis:

The most common symptom of bacterial vaginosis is unusual vaginal discharge that has a strong fishy smell, particularly after sex. Patient may notice a change to the color and consistency of discharge, such as becoming greyish-white and thin and watery.

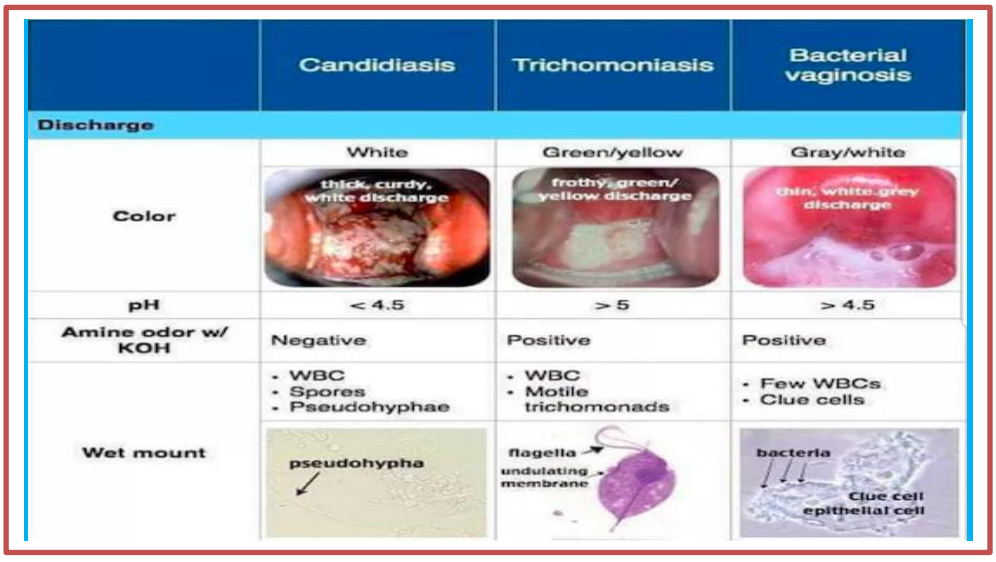


Figure (5-4): Characters of the common vaginal discharges

4-Purulent discharge:

It may be found if there is infection with pus- forming organism. This may be found with endometrial carcinoma in a postmenopausal woman [**pyometra**], or with neglected foreign body in the vagina. The pus is usually greenish-yellow & offensive.

5-Urine:

The discharge may be urine passing through the vagina in cases of vesico-vaginal or uretero-vaginal fistulas. In such cases the discharge is identified by its odor, high creatinine content, and presence of encrustations over the vulvar skin.

6-Amniotic fluid:

In cases of PROM, the patient is pregnant, the discharge is watery, alkaline pH, with positive ferning.

SWELLING (MASS)

The patient may complain of a diffuse abdominal enlargement or a localized swelling.

Differential Diagnosis of DIFFUSE Abdominal Enlargement: [6 Fs]

1. **F**etus: i.e., pregnancy (normal or abnormal).
2. **F**luid: e.g., ascites or cyst (ovarian or peritoneal pseudo-cyst, or pseudo-pancreatic cyst)
3. **F**latus: i.e., abdominal distension.
4. **F**at: i.e., obesity.
5. **F**eces: i.e., intestinal obstruction.
6. **F**ibroid or another tumor.

Differential Diagnosis of PELVI-ABDOMINAL Swelling: [Figure 5-5]

The pelviabdominal swelling is that when its lower border can not by reached by palpation (unlike pure abdominal swelling). Causes may be genital or extragenital;

A]. GENITAL causes:

1- *Uterine:* pregnancy (the commonest), fibroid, adenomyosis, malignancy, pyometra, hematometra, pheseometra (distension by gas), subinvolution.
2- *Cervix:* fibroid, malignancy.
3- *Broad ligament:* para-ovarian cyst, fibroid, hematoma, parametric abscess.
4- *Vagina:* hemato-colpos, tumors.
5- *Ovary & tube:* ovarian tumors impacted in cul-de-sac, tubo-ovarian abscess, large hematosalpinx, hydrosalpinx, pyosalpinx, and tubal malignancy.

B]. EXTRA-GENITAL causes:

1- *Urinary bladder:* full bladder, bladder tumors.
2- *Recto-sigmoid:* fullness due to fecal impaction or tumors, mesenteric cyst.
3- *Douglas' pouch:* pelvic hematocele, pelvic abscess, large tumor implants, tuberculous peritonitis.
4- *Retro-peritoneal:* sarcoma, lymphoma, pelvic hydronephrotic kidney.

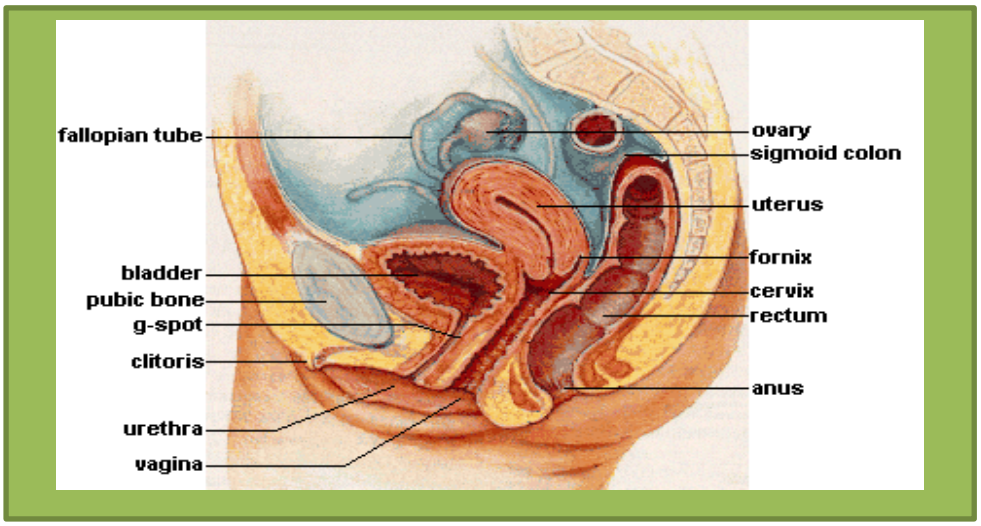


Figure [5-5]: Pelvic structures to remember causes of Pelviabdominal swelling

Causes of Symmetrically Enlarged Uterus:

1. Pregnancy: whether normal or abnormal (vesicular mole, ectopic pregnancy)
2. Fibroid (types 0,1, and 2).
3. Adenomyosis (the diffuse type).
4. Uterine Subinvolution.
6. Hematometra, pyometra, pheseometra.
7. Uterine malignancy: as endometrial carcinoma, uterine sarcoma, choriocarcinoma.

Causes of Asymmetrically Enlarged Uterus:

1- Pregnancy: corneal pregnancy or pregnancy in a uterine horn.
2- Fibroid: multiple uterine fibroids, hybrid (2-5), types 6,7, and 8.
3- Adenomyosis: the localized type
4- Hematometra: in a non-communicating uterine horn.
5- Others: conditions that cause dense pelvic adhesions including the uterus within it e.g., pelvic T.B., endometriosis, tubo-ovarian abscess, malignancy, prior surgeries

Differential Diagnosis of Cervical Enlargement:

1- Congenital hypertrophy, or elongation of the portio vaginalis (false prolapse).
2- Granulomatous lesions: as syphilis (gamma), T.B., bilharziasis, amebiasis, or actinomycosis.
3- Chronic cervicitis: including endocervicitis, interstitial cervicitis, cervical erosion, Nabothian follicles, mucous polyp, and cervical ectropion.
4- Cervical ectopic pregnancy & cervical abortion [how to differentiate?].
5- Cervical polypi: whether true or false (corporeal polyp passing via the cervix). How to differentiate?
6- Cervical endometriosis.
7- Cervical neoplasms: benign as fibroid or malignant as carcinoma.

Causes of barrel-shaped cervix:

1- Cervical adenocarcinoma
2- Cervical ectopic pregnancy
3- Central cervical leiomyoma
4- Granulomatous lesions: as syphilis (gamma), T.B., bilharziasis, amebiasis, or actinomycosis.

Causes of uterine polyps:

Polyps may arise from the uterine body (i.e., corporeal polyps), or from the cervix (i.e., cervical polyps). Moreover, cervical polyps may arise from the endocervix (.e. endocervical) which are more common than those arising from the ectocervix (ectocervical polyps).

Uterine Corporeal Polyps: include the following.

1- Fibroid polyp: type 0 fibroid extruded into the cavity by uterine contractions.
2- Adenomatous polyp: arising from the hyperplastic endometrium. Usually, multiple.
3- Placental polyp: formed from missed placental parts following delivery or abortion.
4- Malignant polyp: it may be one of the following pathological types.

(a). Carcinomatous polyp. (b). Sarcomatous polyp.
(c). Mixed mesodermal polyp. (d). Choriocarcinomatous polyp.

Cervical polyps: include the following.

1- Mucous polyp: is one clinico-pathological form of chronic cervicitis. What are the other forms of chronic cervicitis?
2- Fibroid polyp: it arises from the portio vaginalis.
3- Bilharzial polyp.
4- Condyloma accuminata: genital wart is a sexually transmitted disease that may affect the cervix appearing as a sessile polyp or as a cauliflower mass when extensive.
5- Malignant polyp: it may be of carcinomatous, sarcomatous, or mixed mesodermal type.

Differential Diagnosis of Vaginal Swellings: *causes are listed in table [5-4]*

Table [5-4]: causes of vaginal swellings

Cystic vaginal swellings	Solid vaginal swellings
1-Gartner's cyst. 2-Hymenal cyst. 3-Endometriotic cyst. 4-Implantation cyst, dermoid cyst 5-Vaginitis emphysematosa. 6-Pseudocysts: cystocele, rectocele, enterocele, urethrocele, hemangioma, lymphangioma, hematoma.	1.Fibroma & neurofibroma. 2.Organized hematoma may be infra-levator or supra-levator. 3.Vaginal cancer. 4.Foreign body granuloma. Osama Warda

Differential Diagnosis of Vulvar Swellings:

Swellings seen at the vulva may originate from vulvar tissues or it just appear at vulva despite originating from other tissues (table 5-6),and figure (4-8;A,B,C,D,E).

Table [5-5]: causes of vulvar swellings.

A]. *Swellings of NON-VULVAR ORIGIN appearing at the vulva*	B]. *Swellings of VULVAR ORIGIN:*
1. **Anterior vaginal wall:** urethrocele, cystocele, Gartner's cyst, urethral diverticulum, urethral caruncle. 2. **Posterior vaginal wall:** rectocele, enterocele. 3. **Vaginal vault**: vault prolapse. 4. **The cervix:** congenital elongation of portio vaginalis, 2nd degree uterine descent, cervical polyps. 5. **The uterus:** 3rd degree uterine descent, uterine inversion, pedunculated corporeal fibroid polyp. 6. **The round ligament & inguinal canal:** hydrocele of the canal of Nuck, inguinal hernia.	**1.Vulval Cysts:** a). Bartholin cyst. b). sebaceous cyst c). Endometriotic c. d). implantation c. e). Hymenal cyst. f). Clitoral cyst **2. Traumatic masses**: vulval hematoma. **3. Inflammatory masses:** a) Barthonitis & Bartholin abscess. b) Condyloma accuminata (viral, by HPV). c) Condyloma Lata (bacterial, by treponema pallidum of syphilis). d) Lymphogranuloma venerium (by chlamydia trachomatis L1,2,3) e) Granuloma inguinal (by gram –ve bacilli; calymatobacterium granulomatis). f) Vulval granulomas: bilharzial, tuberculous, actinomycosis, foreign body granuloma. g) Other causes of vulvitis e.g., allergy. **4.Neoplastic swellings:** a). *Benign*: as fibroma, lipoma, hidradenoma, papilloma. b). *Malignant*: as carcinomas, melanoma, sarcomas. **5- Vascular swellings:** a). Vulval edema. b). Vulval varicosities. c). Vulval elephantiasis. **6- Congenital swellings:** a). Congenital hypertrophy of the clitoris. b). Congenital hypertrophy of the labia.

Osama Warda

Differential diagnosis of mass in pouch of Douglas:

[A]. Genital causes:

1. *Uterine*:

a)- Retroverted uterus (RVF). b)-Posterior wall uterine fibroid. c). Posterior cervical fibroid.

2. *Tubal*:

a)-Hematosalpinx (ectopic pregnancy). b)- Hydrosalpinx. c)-Pyosalpinx.

3. *Ovarian:*

a)-Prolapsed ovary (causes deep dyspareunia). b)-Non neoplastic ovarian swelling.

c)- Small- sized ovarian neoplasm.

[B]. Extragenital causes:

1. Causes in Douglas pouch:

(a)- Pelvic hematocele (mostly due to disturbed ectopic pregnancy)

(b)- Pelvic abscess. Pelvic abscess usually points into gluteal region via pudendal canal.

(c)- pelvic tuberculous peritonitis. (d)- pelvic endometriosis.

(e)- metastatic implants e.g., from ovarian cancer.

2. Rectal causes:

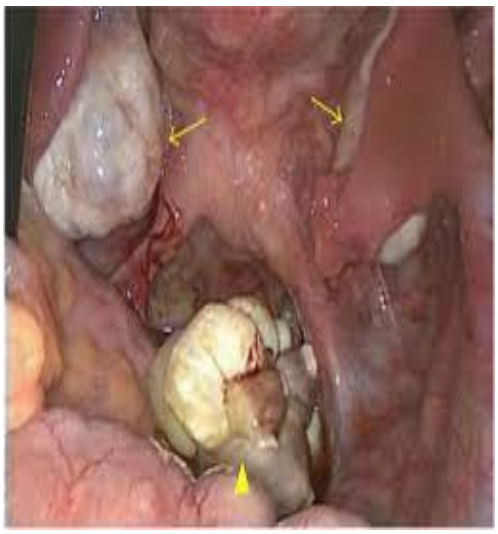
(a). Impacted fecal matter. (b). Rectal Tumor

3. Retro-peritoneal causes:

(a). Pelvic kidney. (b). Retro-peritoneal tumors e.g., sarcoma.

(c). Tumors of the pelvic bones.

Obliteration of Douglas pouch by



Mature cystic teratoma in Douglas pouch

MRI of type subserous fibroid in Douglas pouch

Figure (5-6): Some causes of mass in Douglas' pouch

THE GYNECOLOGICAL DIAGNOSIS

This chapter is essentially written for the residents of obstetrics & gynecology.

The ideal gynecological diagnosis should include the following:

1. *Etiological diagnosis*; including the underlying cause.
2. *Anatomical diagnosis*; including the anatomical alteration.
3. *Functional diagnosis*; including disordered function.

For obtaining these items the diagnosis must contain objective terminology and avoiding vague subjective ones as much as possible.

In view of the latest FIGO (2018) classification of abnormal uterine bleeding (AUB), and the international continence society (ICS- 2011) POP-Q staging, the gynecological diagnosis becomes more objective in the concerned cases of abnormal uterine bleeding, and pelvic organ prolapse. Both conditions constitute a great deal of gynecological cases. Please revise AUB in chapter 5.

CASES OF AUB

Using the PALM-COEIN systems, the diagnosis is made using the grid as follows:

	Y	N	?
P			
A			
L			
M			
C			
O			
E			
I			
N			

	Y	N	?
P		X	
A		X	
L_o	X		
M		X	
C			X
O		X	
E			X
I		X	
N		X	

	Y	N	?
P		X	
A		X	
L_o	X		
M		X	
C		X	
O		X	
E	X		
I		X	
N		X	

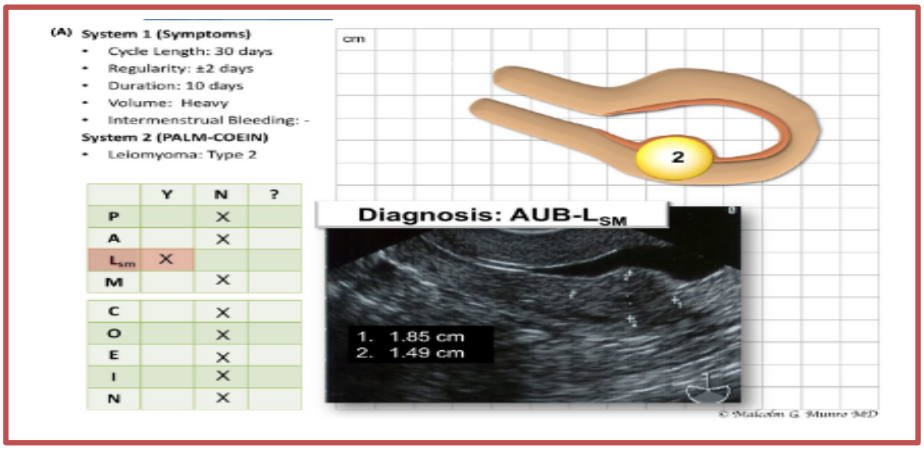
- A simplified diagnostic matrix is illustrated in the left pane. Each of the primary classification system elements are listed.
- If a patient has **not** been completely evaluated for a potential cause it is listed in the "?" column, if evaluation has demonstrated no evidence of the abnormality the "N" column is checked, and if assessment is positive, an X is placed in the appropriate box.
- An example is shown in the panel on the right. The patient has the symptom of heavy menstrual bleeding (HMB), and interim assessment, including contrast *hysterosonography* documented in the left matrix has revealed a subserosal leiomyoma designated as [Lo].

- However, the patient had a *positive* historical screening result for coagulopathy and hematological assessments for coagulation disorders are not yet available. Consequently, the "C" and "E" rows remain in the "?" category. The *hematological* assessment demonstrates that there is no evidence of coagulopathy, so the diagnosis of a *primary disorder of endometrial hemostasis* is made.
- The C row can now be assigned an "N" while the E category can be checked as "Y".
- The gynecological diagnosis of this case is: AUB-LoE

EXAMPLES

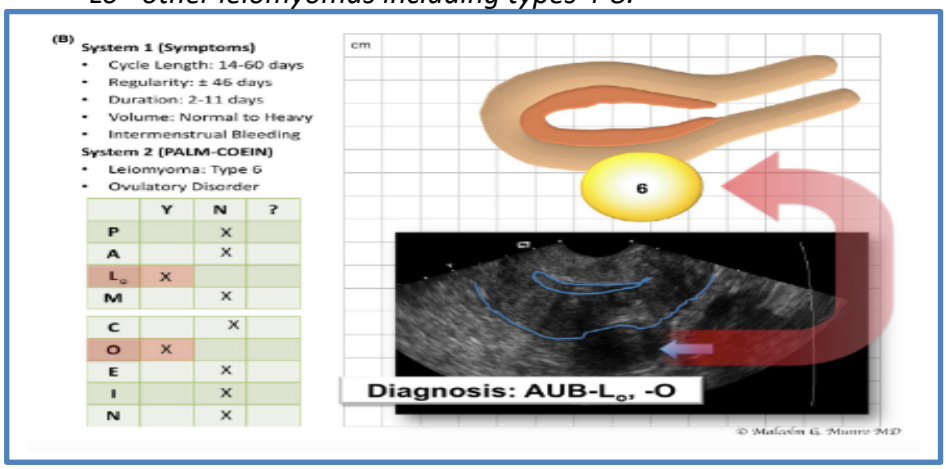
CASE [1]: Diagnosis is (AUB-Lsm)

- *The diagnosis means abnormal uterine bleeding with submucous fibroid.*
- *L sm= submucous leiomyoma is applied to leiomyomas 0,1, and 2.*



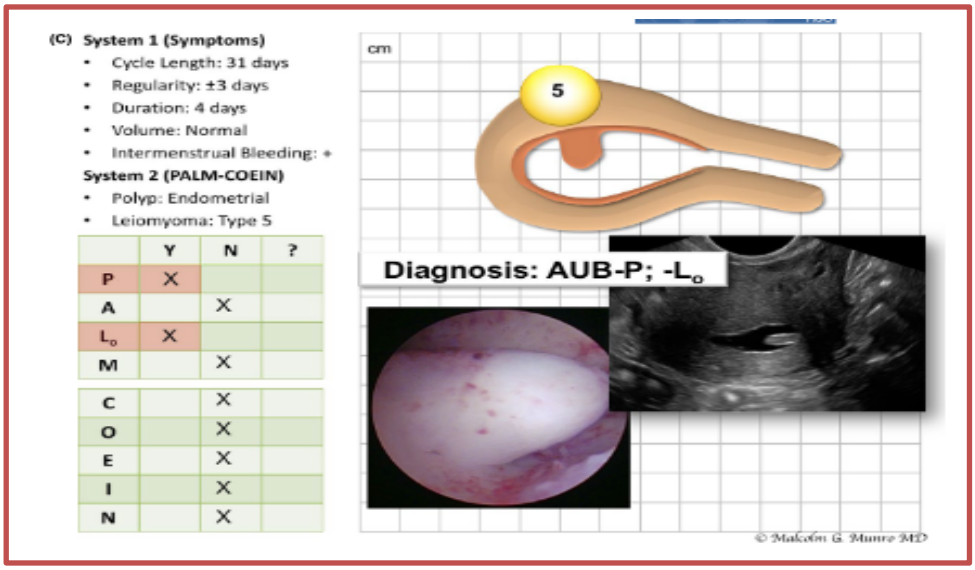
CASE [2]: Diagnosis is (AUB-L_{o6}-O)

- *The diagnosis means abnormal uterine bleeding with leiomyoma type 6 and ovarian dysfunction.*
- *Lo= other leiomyomas including types 4-8.*



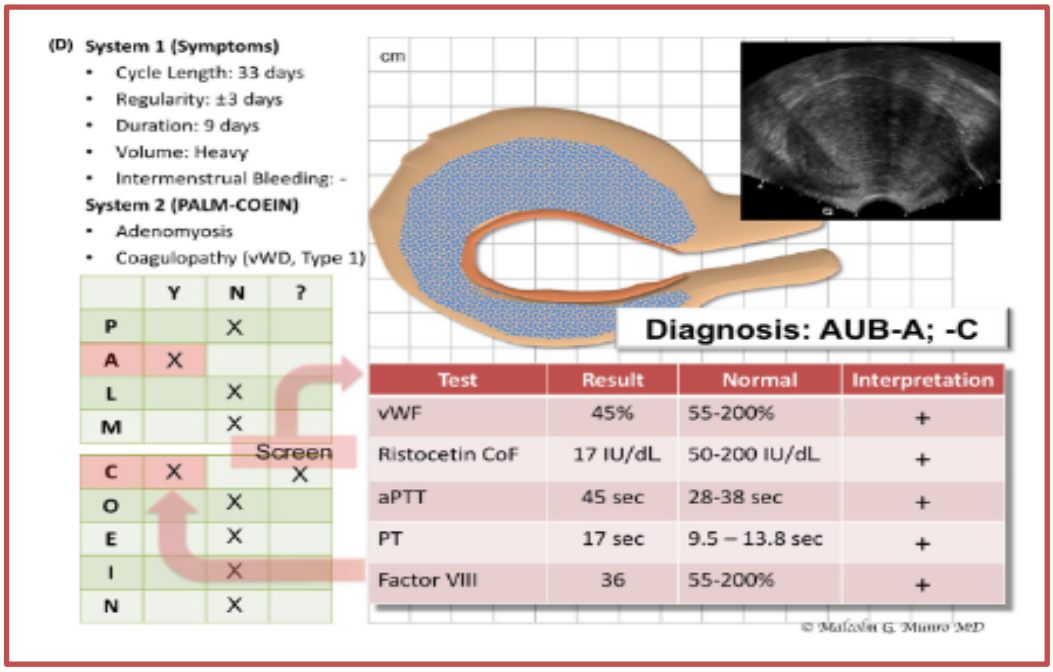
CASE [3]: Diagnosis is AUB-P;-L_{o5}

- *The diagnosis is abnormal uterine bleeding with endometrial polyp, and leiomyoma type 5.*



CASE [4]: Diagnosis is (AUB-A;-C)

- *The diagnosis is abnormal uterine bleeding with adenomyosis, and coagulopathy.*



HOW TO REACH THE DIAGNOSIS OF A CASE OF AUB?

The diagnostic tools needed are *clinical evaluation, medical imaging, and hysteroscopy*. These are summarized as follows:

A. Clinical and laboratory work up: [Table;6-1]

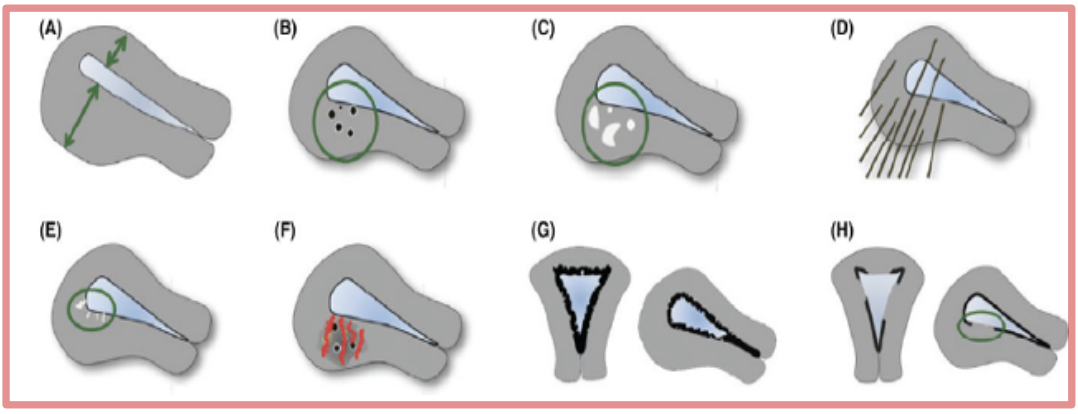
Component	Clinical finding		Suggested diagnoses
	Pelvic exam	Speculum exam shows cervical or vaginal lesions	AUB-P (or coexisting STI)
		Bimanual exam detects an enlarged or irregularly shaped uterus	AUB-L
Lab tests	Positive pregnancy test (urine or serum)		Pregnancy
	Low hemoglobin level or hematocrit		Coexisting anemia
	High TSH level (and/or low free T_4 level)		AUB-O (hypothyroidism)
	Positive *Chlamydia trachomatis* culture or other test		*C trachomatis* infection
	Abnormally elevated PT, PTT		AUB-C
	Abnormal prolactin, testosterone, or 17-hydroxyprogesterone level[b]		AUB-O

AUB (abnormal uterine bleeding): "-A," adenomyosis; "-C," coagulopathy; "-E," endometrial; "-I," iatrogenic; "-L," leiomyoma; "-M," malignancy and hyperplasia; "-O," ovulatory dysfunction; "-P," polyps. BMI, body mass index; PCOS, polycystic ovary syndrome; PT, prothrombin time; PTT; partial thromboplastin time; STI, sexually transmitted infection; TSH, thyroid-stimulating hormone.

[a]If severe, assess for anemia.

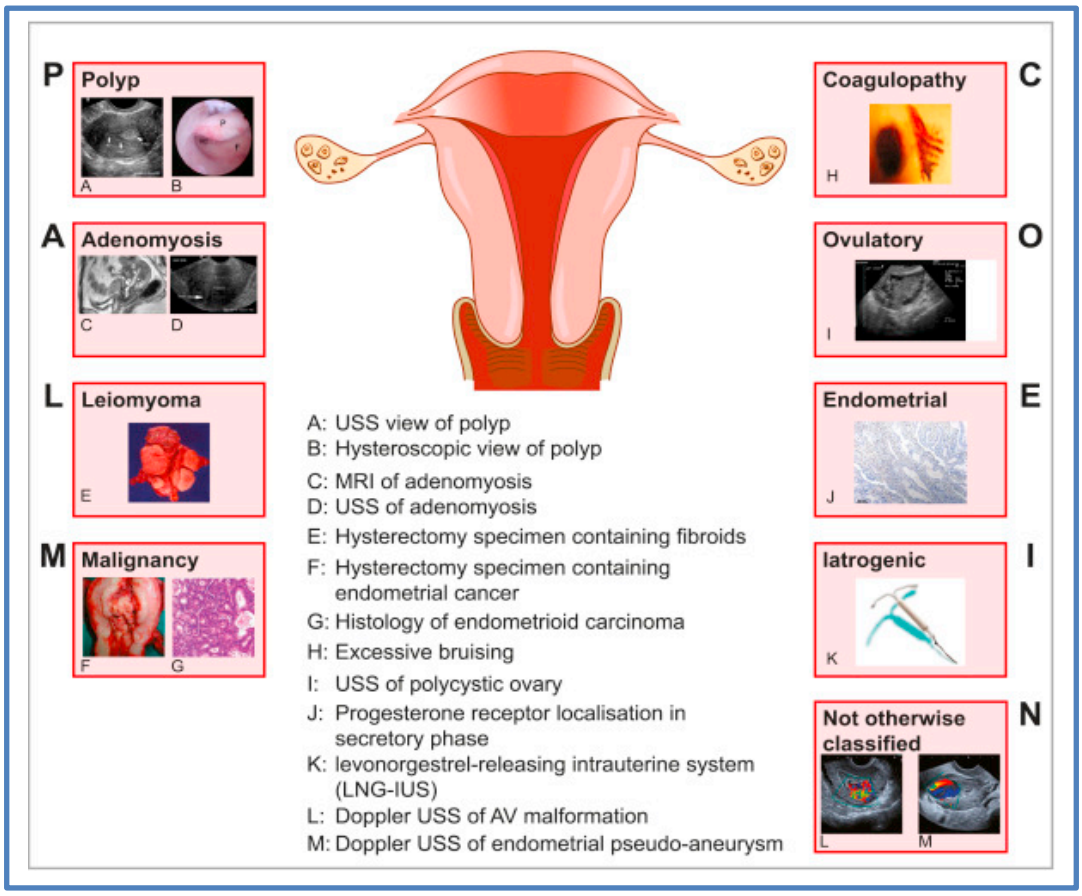
[b]Order any of these tests only if an anovulatory cause of AUB is suspected.

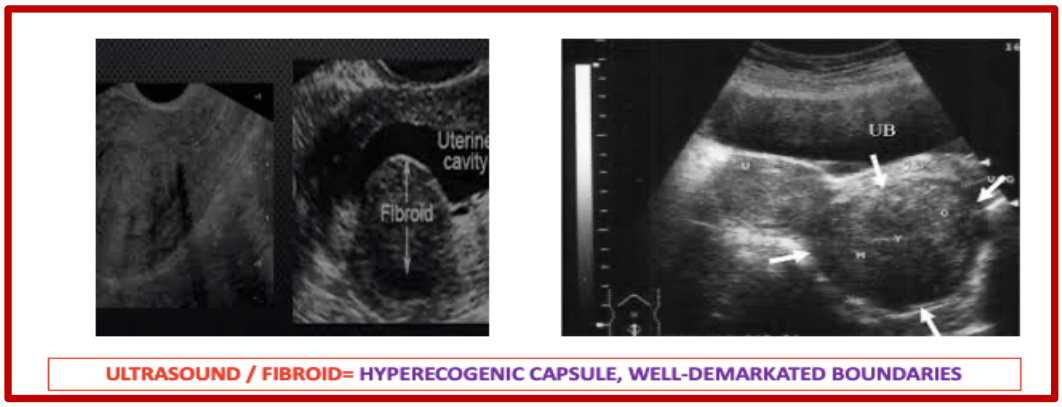
B. Diagnosis of Adenomyosis (varieties): [figure;6-1]



Adenomyosis diagnostic criteria. Graphical depictions of the 8 TVUS criteria proposed by the MUSA group; These include:
(A). Asymmetrical myometrial thickening (B).Myometrial cysts (C). Hyperechoic islands
(D). Fan shaped shadowing (E). Echogenic sub-endometrial lines and buds
(F). Trans-lesion vascularity (G). Where present; irregular junctional zone
(H)An interrupted junctional zone
A least, the presence of two or more of these criteria are highly associated with a diagnosis of adenomyosis.
Abbreviations: MUSA, Morphological Uterus Sonographic Assessment; TVUS, transvaginal ultrasonography.

C. FULL INVESTIGATIONS TABLE [table ; 6-2]





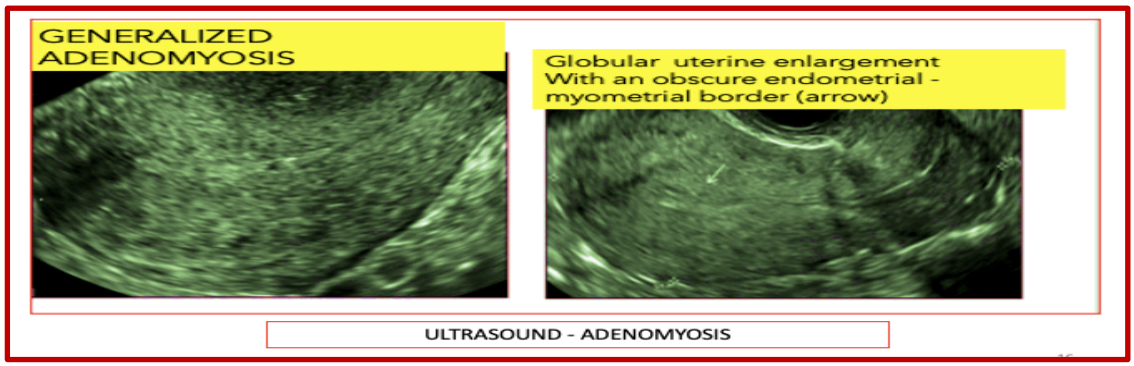
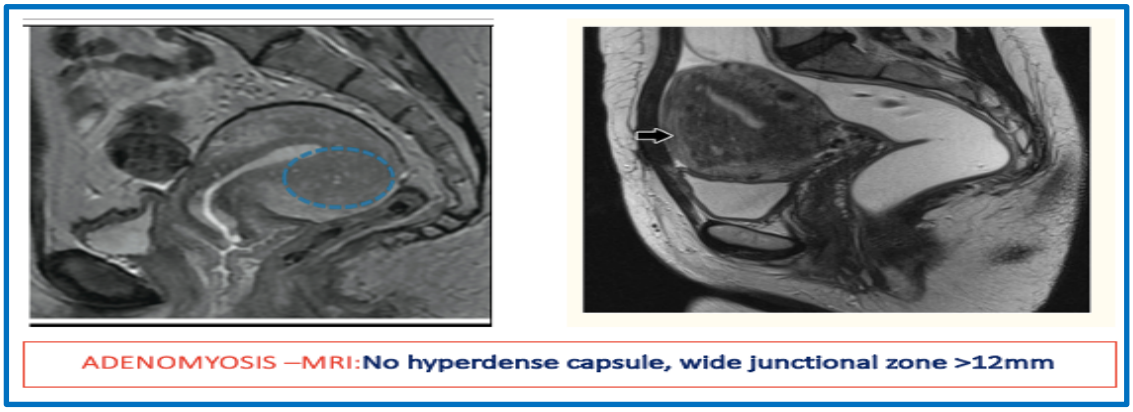


Figure [6-2]; Ultrasound pictures of uterine fibroid & adenomyosis



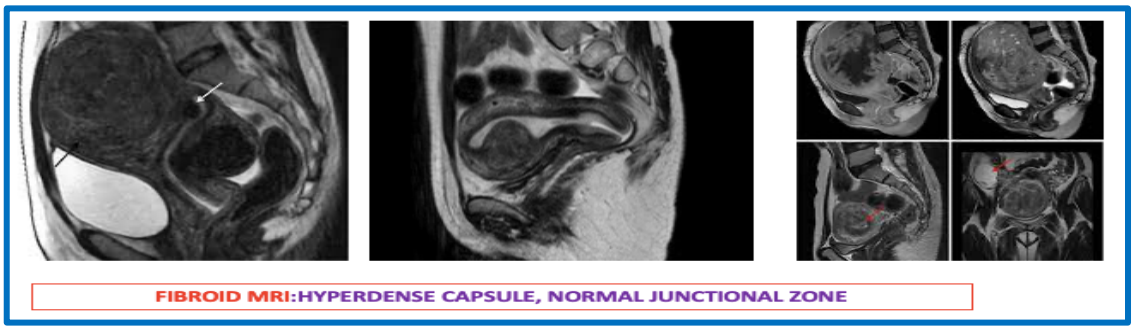


Figure [6-3]; MRI images of adenomyosis & uterine fibroid

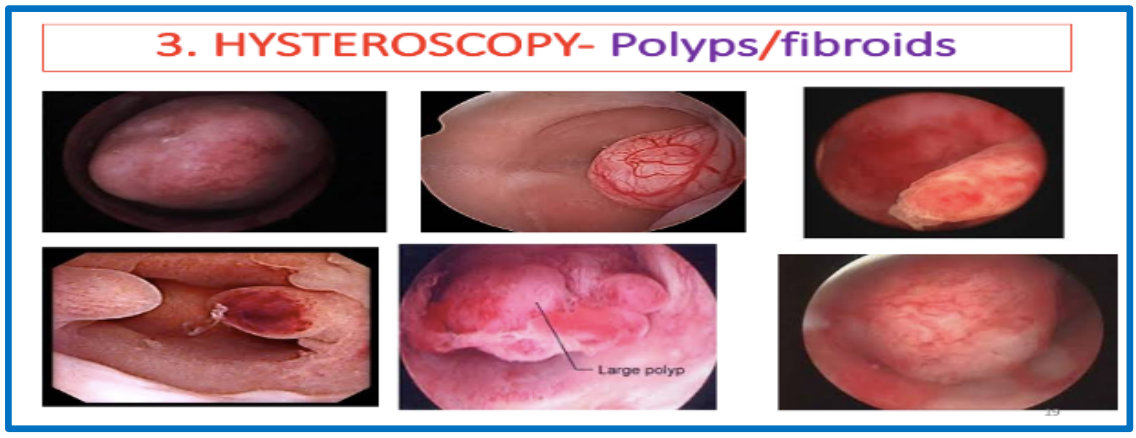


Figure [6-4]: hysteroscopy of uterine polyps and adenomyosis

CASES OF PELVIC ORGAN PROLAPSE (POP)

The POP-Q system (pelvic organ prolapse quantification) is designed to be a subjective method for prolapse "quantification".

- It consists of 6 points, and 3 measurements.
- The reference point of measurement is the hymenal ring.
- The points are Aa, Ba, Ap, Bp, C, and D. The measurements are genital hiatus (Gh), total vaginal length (tvl), and perineal body.
- The point A is a fixed reference point on the vaginal wall Aa= 3 cm from hymenal ring on anterior vaginal wall, and point Ap is that on the posterior wall. *Its value may be positive or negative.*
- The point B is dynamic point, and it indicates the leading point of prolapse of the vagina. *Its value may be positive or negative.*
- Point C indicate the cervix
- Point D indicate the attachment of uterosacral ligament on posterior fornix (Douglas pouch). *Its value may be positive or negative.* It is absent in cases with prior total hysterectomy.
- The 3 measurements (gh, tvl, pb) are **absolute** (no negative or positive) .

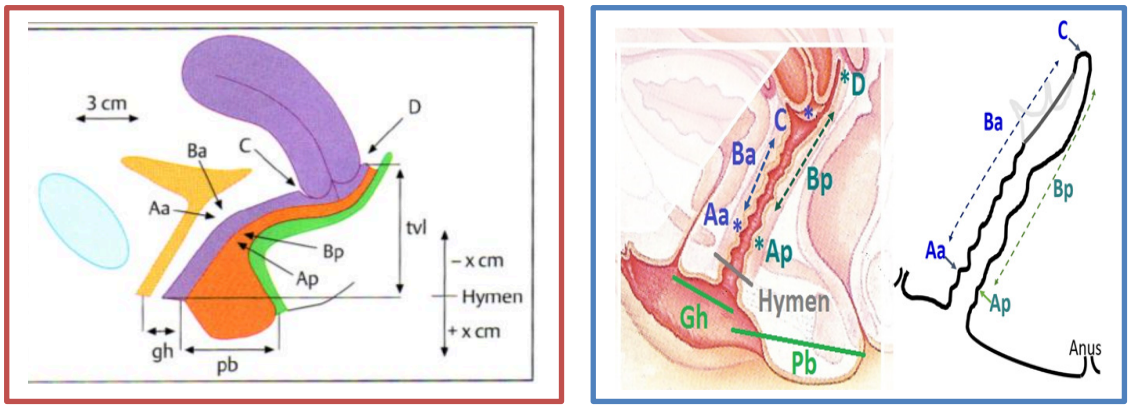


Figure (6-5): points and measurement used in POP-Q system

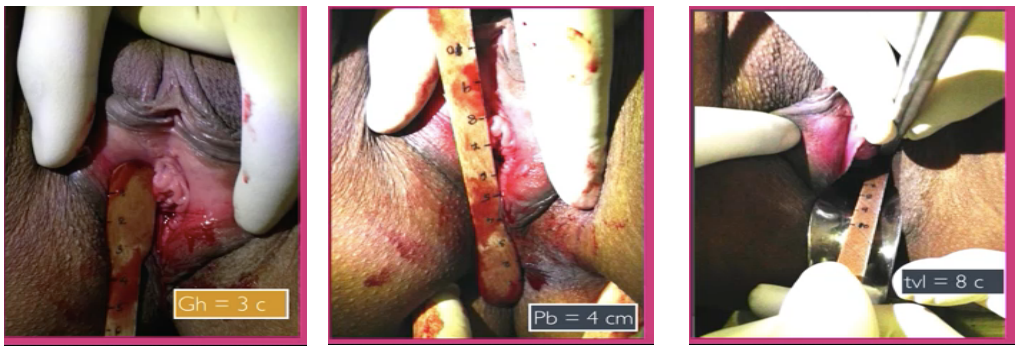


Figure (6-6): measuring gh, pb, and tvl.

Table (6- 3): points and measurement used in POP-Q system

Point	Description	Range
Aa	midline of anterior, 3 cm proximal to external urethral meatus, *approximate location of urethro-vesical junction*	-3 cm to +3cm
Ap	middle of the posterior wall, 3cm proximal to the hymen	-3 cm to +3cm
Ba	*the lowest points of the prolapse between Aa anteriorly and the vaginal apex*.	-3cm to + tvl
Bp	*the lowest points of the prolapse between Ap posteriorly and the vaginal apex*.	-3cm to + tvl
C	Most distal part of cervix (or vaginal cuff). Normally it is -8cm	
D	Posterior fornix, normally -10cm. Not applicable if post-hysterectomy	

Distance	Description
tvl	Greatest depth of the vagina in centimeters. C and D in normal position. Measurement **without** straining.
gh	from the middle of the urethral meatus to the posterior hymenal ring.
pb	from the posterior aspect of the genital hiatus to the mid-anal opening

Table (6-4) : POP-Q. STAGES:

Once the measurements are taken, the patients are assigned to the corresponding stage:

STAGE	DESCRIPTION	MEASURES
0	no prolapse	Aa, Ap, Ba, Bp= -3cm and C or D ≤ (tvl-2) cm
1	most distal portion of prolapse is > 1cm above level of hymen	Leading edge < -1cm
2	the most distal part of prolapse is <1cm proximal to or distal to the plane of hymen	Leading edge ≥ -1cm but ≤ +1cm
3	the most distal portion of the prolapse protrudes more than 1 cm below the hymen but no farther than 2 cm less than the total vaginal length (for example, not all the vagina has prolapsed).	Leading edge >+1cm but < + (tvl-2) cm
4	complete vaginal eversion is essential.	Leading edge ≥ +(tvl-2) cm

Prolapse may be:

Anterior compartment (Ba) i.e., anterior vaginal wall (with urinary bladder with or without the urethra).

Posterior compartment (Bp) i.e., posterior vaginal wall (with the rectum).

*Middle compartment (*C, D) i.e., uterine prolapse, vaginal vault prolapse.

EXAMPLES:

CASE #1

Aa -3	Ba -3	C -8	- Points Aa,Ba, Ap, Bp points are all -3 indicating NO anterior or posterior vaginal wall prolapse. - Lower point of cervix is -8 cm, and posterior fornix is -10. - Tvl=10, gh=2,pb=3cm - **Diagnosis= stage 0 POP**
Gh 2	Pb 3	Tvl 10	
Ap -3	Bp -3	D -10	

CASE#2

Aa -1	Ba +5	C -6	- Ba is +5 → anterior wall prolapse - Lower point of cervix is -6 cm, and posterior fornix is higher by 2 cm (-8). - Tvl=10, gh=4,pb=1cm - So the leading point is Ba - ***Diagnosis= anterior compartment prolapse stage 3 (POP stage 3 Ba)***
Gh 4	Pb 1	Tvl 10	
Ap -3	Bp -3	D -8	

CASE #3 :

Aa -2	Ba -2	C -6	- Points Aa,Ba,(-2 cm) →mild prolapse - Points Ap, Bp (+2, +5 cm)→ marked prolapse - Lower point of cervix is -6 cm, and posterior fornix is -8cm (higher by 2 cm). - Tvl=10, gh=1, pb=6cm - The leading point is BP - **Diagnosis= posterior compartment prolapse POP stage 3 (Bp).**
Gh 6	Pb 1	Tvl 10	
Ap **+2**	Bp **+5**	D -8	

CASE #4

Aa -3	Ba -3	C +2	- Points Aa,Ba,(-3 cm) →no anterior wall prolapse - Points Ap, Bp (-3 cm)→ no posterior wall prolapse - Lower point of cervix is +2cm→ middle compartment prolapse. - posterior fornix is -8cm. - Tvl=10, gh=4, pb=2cm - The leading point is C - **Diagnosis= MIDDLE compartment prolapse POP stage 3 (C).**
Gh 5	Pb 2	Tvl 10	
Ap -3	Bp -3	D -8	

CASE# 5

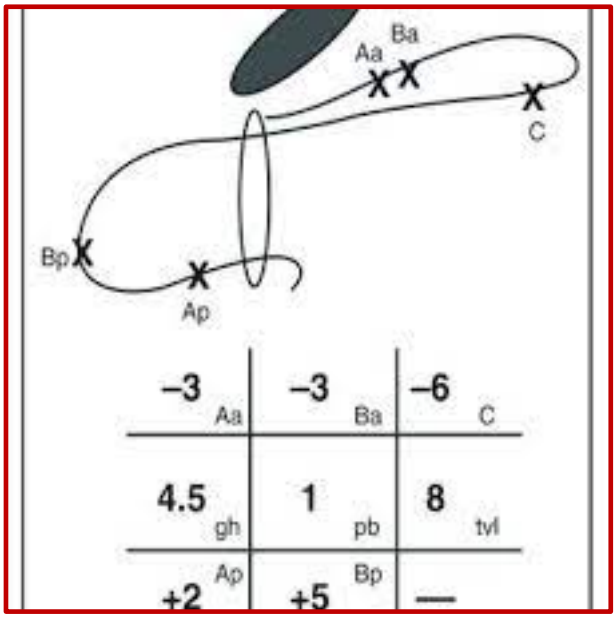
Aa +3	Ba +6	C -2	- Points Aa is +3 → maximally distended - Ba,(+6cm) → anterior wall prolapse - Bp (-2 cm)→ mild posterior wall prolapse - C (-2cm , vaginal cuff as D is not present due to prior hysterectomy)→ **lower by 4 cm than its normal position**→ vault (middle compartment) prolapse. - Leading point is Ba **Diagnosis= vaginal vault prolapse** **POP stage 3 (Ba -C).** [not stage 4 as the C is -2cm]
Gh 5	Pb 2	Tvl 6	
Ap -3	Bp -2	D -	

Case #6

Aa +3	Ba +8	C +8	- Point Aa= + 3 → maximally distended - Ba =+8 cm→ anterior wall prolapse - Point Ap= + 3cm → maximally distended - Point Bp= +8 cm → posterior wall prolapse - C = + 8cm → vault is totally everted - **Diagnosis: total vault eversion** **POP stage 4 (C).**
Gh 5	Pb 2	Tvl 8	
Ap +3	Bp +8	D -	

CASE#7

Comment on this case?



Posterior compartment prolapse [POP stage 3 (Bp)]

SELF-ASSESSMENT

Introduction:

The aim of this chapter is to solidify the basic knowledge gained throughout the clinical rounds in obstetrics & gynecology in the form of multiple choice & essay questions. This will include the case-taking, anatomy & embryology, and instruments.

OBSTETRIC CASE - TAKING

1-ONE term is not descriptive of <u>gravidity</u> .

a- All pregnancies terminated by delivery.
b- All pregnancies terminated by abortion.
c- Hydatidiform mole
d- Ectopic pregnancy
e- Pseudocyesis.

2-ONE term is not descriptive of <u>parity</u>

a) Full term normal deliveries.
b) Pre-term labors.
c) Pregnancies terminated before the 20 weeks' gestation.
d) Cesarean sections.
e) Stillbirths.

3-The following condition is not considered *difficult labor.*

a- Delivery of twins.
b- Ventouse delivery.
c- Cesarean delivery.
d- Breech delivery.
e- Delivery of a fetus presented by the face.

4-The diagnosis of woman with twin pregnancy and previous history of 1 vaginal delivery, 1 CS, one 2nd trimester abortion, 1 ectopic pregnancy, is:

a- Fourth gravida, second para.
b- Fifth gravida, second para.
c- Fifth gravida, third para.
d- Sixth gravida, second para.
e- Sixth gravida, third para.

5-The body mass index (BMI) is calculated from the following formula:

a- $\frac{\text{Weight in kilograms}}{\text{height in meters}}$

b- Weight in kilograms X height in meters.

c- $\frac{\text{Weight in kilograms}}{(\text{height in meters})2}$

d- $\frac{\text{Weight in grams}}{\text{height in meters}}$

e- $\frac{\text{Weight in grams}}{\text{height in centimeters}}$

6- ONE of the following is not a cause of a uterus *larger* than the period of amenorrhea.

a- Multi-fetal pregnancy.
b- Hydramnios.
c- Fetal macrosomia.
d- Intra-uterine growth restriction
e- Uterine fibroid with pregnancy.

7-ONE of the following is <u>not</u> a cause of a uterus *smaller* than the period of amenorrhea.

a- Intra-uterine growth restriction.
b- Hydramnios.
c- Missed abortion.
d- Miscalculation.
e- The minority of hydatidiform moles.

8-ON fundal grip, ONE character of the following is NOT of the fetal *head* .

a- Hard in consistency.
b- Not tender.
c- Smooth contour
d- Its movement is independent from the other body parts.

9- ON fundal grip, ONE character of the following is NOT of the fetal *breech*.

a-Bulky in size.
b- Soft in consistency.
c-Not tender.
d- Irregular contour
e-its movement is independent from the other body parts.

10-The four standard positions of the fetus are the following in sequence from 1st to 4th position:

a- Left anterior, left posterior, right anterior, right posterior.
b- Right anterior, left anterior, left posterior, right posterior.
c- Left anterior, right anterior, right posterior, left posterior.
d- Right posterior, left anterior, left posterior, right anterior.

11- Mention the 5 cephalic presentations?

12- How the fetal attitude affects the presentation?

13- Mention the value of each obstetrical grip.

14-Define the dominator, give examples?

15- Describe the technique of clinical pelvimetry?

16- Define engagement of the fetal presenting part?

17- How to diagnose engagement?

18- What are the indications of vaginal examination in an obstetric case?

GYNECOLOGICAL CASE- TAKING

1-Give the definition of each of the following:

A- Menarche. B- Cycle length.
C- Inter-menstrual period. D- Menstrual flow.
E-Dysmenorrhea.

2- Mention the items of local gynecologic examination?

3- Mention the technique & value of each of the following:

A- Vulval inspection. B- Vaginal palpation.

C- Bimanual examination E- Speculum examination.

4- Mention **3 clinical tests** for diagnosis of urinary stress incontinence in a female with genital decent.

5- How to differentiate **pelvi-abdominal** from **pure abdominal** swelling by clinical examination?

6- What is the differential diagnosis of:

A- Acute pelvic pain. B- Chronic pelvic pain.

B-Metrorrhagia D- Contact bleeding.

E- Post-menopausal bleeding F- Primary amenorrhea.

7- What is the differential diagnosis of **vaginal discharge**?

8- What is the differential diagnosis of **diffuse abdominal enlargement**?

9- What is the differential diagnosis of **pelvis-abdominal mass**?

10-Mention the causes of **symmetrically enlarged uterus**.

11-What are the causes of **asymmetrically enlarged uterus**?

12- Mention the differential diagnosis of **cervical enlargement**.

13- What is the differential diagnosis of **vaginal swelling**?
14- What is the differential diagnosis of **vulval swelling**?
15 – What is the differential diagnosis of a **mass in the cul-de-sac**?

INSTRUMENTS

1. Mention the instruments used in **D&C** and give the **use of each**.
2. Mention the **indications** of each of the following vaginal specula:
   1- Self-retaining bivalve Cusco's speculum.
   2- Self-retaining posterior vaginal (Award's) speculum.
   3- Sims 'speculum
3. Mention **the uses** of each of the following instruments:
   a. Uterine sound.
   b. Hagar's cervical dilators.
   c. Single-toothed cervical tenaculum.
   d. Endometrial curet.
   e. Screw cervical cannula, olive cervical cannula.
   f. Ayre's cervical spatula.
   g. Ring forceps.
   h. Ovum forceps.
   i. Female urinary catheters.
4. Mention the **4 basic investigations** for an infertile couple, what is the aim of each?
5. The optimal vacuum power used in vacuum extractor is:
   a- 0.5 kg/cm2
   b- 0.6 kg/cm2
   c- 0.7 kg/cm2
   d- 0.8 kg/cm2
   e- 1.0 kg/ cm2
6. The vacuum extractor is used in the following fetal presentation:
   a- Brow
   b- Vertex
   c- Frank breech.
   d- Shoulder presentation.
   e- Face
7. The **prerequisites** for ventose application **does not include:**
   a- Full cervical dilation.
   b- Engaged head.
   c- Vertex presentation.
   d- Term fetus
   e- Intact fetal membranes.
8. ONE is not a **complication** of forceps delivery.
   a- Uterine rupture.
   b- Vaginal tears.
   c- Fetal facial palsy
   d- Cephalhematoma.

9. The standard investigation to assess the *patency of the fallopian tube* is:

a- Ultrasound evaluation.
b- CAT scan
c- Hysterosalpingogram (HSG)
d- Hysteroscopy
e- Pre-menstrual endometrial biopsy.

10. One of these procedures can not cause uterine perforation;

a- Uterine sounding.
b- Cervical dilation.
c- Endometrial curettage.
d- Trans-vaginal ultrasound examination.
e- Surgical evacuation of uterine contents.

ANATOMY & EMBRYOLOGY

1- One is not derived from the **mullerian duct** system

a- The uterus & cervix

b- The fallopian tubes.

c- The vulva

d- Most of the vagina.

2- The gubernaculum is the embryologic source of:

a- The round ligament & the broad ligament.

b- The round ligament & the cardinal ligament.

c- The ovarian ligament & the round ligament.

d- The ovarian ligament & the pubocervical ligament

e- The cardinal ligament & the pubocervical ligament.

3- Crossmatch the male counterparts with their correct female structures in the following table:

Female	**Male**
1- Ovary	Penis
2- Ovarian ligament & round ligament	Testes
3- Gartner's duct	Ductus deferens
4- Vagina	Penile urethra
5- Bartholin glands	Scrotum
6- Labia minora	Prostatic utricle
7- Labia majora	Bulbourethral glands
8- Clitoris	Gubernaculum testis
9- Urethral & para-urethral glands	Prostatic gland

4- <u>One is not true about the vagina</u> :

a- It is a fibro-muscular tube.

b- The posterior wall is longer than the anterior wall.

c- Its axis is perpendicular with the axis of the cervical canal.

d- It is rich in mucus secreting glands.

e. Its anterior wall supports the bladder base.

5- <u>The uterine artery is a branch from:</u>

a- Pudendal artery.

b- Posterior division of internal iliac artery.

c- Ovarian artery.

d- Anterior division of the hypogastric artery.

e- The abdominal aorta.

6- <u>The ovarian artery is a branch from:</u>

a-Uterine artery.

b- Posterior division of internal iliac artery.

c- Pudendal artery.

d- Anterior division of the hypogastric artery.

e- The abdominal aorta.

The Answers

<u>OBSTETRIC CASE TAKING</u>:

1- (e) 2- (c) 3- (c) 4- (b) 5- (c) 6- (d) 7- (b) 8- (c) 9- (e) 10-(c)
11- vertex- face- brow- anterior parietal bone- posterior parietal bone presentations.

12- & 13- (see text),

14- *Dominator* is the bony landmark of the fetal presenting part, e.g. the occiput in vertex, chin in face, forehead in brow, sacrum in breech, scapula in shoulder presentation.

15- (see text)

16- *Engagement* is the passage of the widest transverse diameter of the presenting part through the plane of the pelvic inlet, e.g. the bi-parietal diameter (9.5cm) in cephalic presentations.

17- *Diagnosis of engagement:* Engagement of the fetal presenting part can be diagnosed either by abdominal or vaginal examination;

i. *Abdominally* (**Crichton's** method): the head (as a presenting part) is assumed to be divided into 5 equal parts (i.e 5/5). When 3/5 or more of the head are felt abdominally, it is not engaged. On the other hand, when less than 2/5 of the head are felt abdominally, it is engaging. This method is not feasible in obese women or those with rigid abdominal wall muscles.

ii. *Vaginal method*: (**De Lee** method); by vaginal examination, when the lowermost part is felt below the ischial spines, engagement is occurring. De Lee divided the distance below & above the ischial spines into stations assuming that the level of the ischial spine is station 0.

18- (see text)

GYNECOLOGICAL CASE TAKING:

1. See menstrual history.
2- Vulval inspection- vaginal palpation- bimanual examination- speculum examination.
3- To- 15- (see text)

INSTRUMENTS:

1- The instruments as shown in the figure from left to right Cusco's speculum, Sims' speculum (each can be used for exposure of the cervix), uterine sound (for determining the length and direction of the cervico-uterine canal), the endometrial curet (for curettage), and the cervical dilator (for cervical dilation under anesthesia).

2- And 3- (see our text & text in instrument book)

4- The 4 basic investigations of the infertile couple are:

A. Semen analysis; to evaluate the male partner.
B. Mid-luteal progesterone assay; to evaluate ovarian factor. The normal value in ovulating woman is ≥ 10ng/ml. In the past pre-menstrual endometrial biopsy was used for evaluation of ovarian factor.
C. Hystero-salpingo-graphy (HSG): for evaluation of tubal factor, and to lesser extent the uterine factor.
D. Laparoscopy ; for evaluation of the peritoneal factor, and revision of the other factors.

5- (d) 6- (b) 7- (e) 8- (d) 9- (c) 10- (d)

ANATOMY & EMBRYOLOGY:

1- (C) 2- (c)

3- CROSSMATCHING:

Female part	Male counterpart
1- Ovary	Testes
2- Ovarian ligament & round ligament	Gubernaculum testis
3- Gartner's duct	Ductus deferens
4- Vagina	Prostatic utricle
5- Bartholin glands	Bulbourethral glands
6- Labia minora	Penile urethra
7- Labia majora	Scrotum
8- Clitoris	Penis
9- Urethral & para-urethral glands	Prostatic gland

CASE SENARIOS

CASE 1:

A 4th gravida, 3rd para, 30- year-old woman undergoes a rapid vaginal delivery (3 hours labor) of a 3 kilogram male infant over an intact perineum. During labor, she is noted to have mild variable decelerations that increase 20 bpm above the baseline heart rate. At delivery, the male baby has Apgar scores of 8 at 1 minute, and 9 at 5 minutes. Slight lengthening of the cord occurs after 25 minutes along with a small gush of blood per vagina. As the placenta is being delivered, a shaggy, reddish mass is noted at the introitus around the placenta.

⇒ ***What is the most likely diagnosis?***
⇒ ***What is the most likely complication to occur in this patient?***

CASE 2:

A 49-year –old woman complains of irregular menses over the past 6 months, feelings of inadequacy, vaginal dryness, difficulty sleeping, and episodes of warmth and sweating at night. On examination, her BP is 120/70mmHg, heart rate is 90/min, and temperature is 37 Cº. Her thyroid gland is normal to palpation. The cardiac and chest examinations revealed no abnormality. The breasts are symmetric, without masses or discharge. Examination of the external genitalia does not reveal any masses.

⇒ ***What is the most likely diagnosis?***
⇒ ***What is your single most important investigation to confirm diagnosis?***

CASE 3:

A 30-year –old 5th gravida, 4th para pregnant 32 weeks complains of significant bright red vaginal bleeding. She denies uterine contractions, leakage of fluid, or trauma. The patient states that 4weeks previously, she experienced some vaginal spotting following sexual intercourse. On examination, her BP is 110/60 and pulse is 80/min. Temperature is 37C. The heart and lung examinations are normal. The abdomen is lax and not tender. FHR is 140-150bpm.

⇒ ***What is your next step?***
⇒ ***What is the most likely diagnosis?***
⇒ ***What will be the long-term management of this patient?***

CASE 4:

A 50-year –old 5th gravida, 5th para woman complains of post-coital spotting over the past 6 months. Most recently, she complains of a malodorous vaginal discharge. She is cigarette smoker for the past 20 years. All her deliveries were vaginal and uncomplicated. On examination, her BP is 120/80, temp. is 37C, pulse 80bpm. Chest and heart examinations are within normal limits. the abdomen reveals no masses, ascites, or tenderness. Pelvic examination reveals normal external genitalia. Speculum examination reveals a 3-cm exophytic lesion on the anterior lip of the cervix. No other masses are palpated.

⇒ ***What is your next step?***
⇒ ***What is the most likely diagnosis?***

CASE 5:

A 24 –year-old 2nd gravida, 2nd para woman delivered vaginally 10 months ago. Her delivery was complicated by postpartum hemorrhage requiring curettage of the uterus and blood transfusion (2 units). She complains of amenorrhea since her delivery. She was not able to breast-feed her baby. She denies taking medications or having headaches or visual abnormalities. Her pregnancy test is negative.

⇒ ***What is the most likely diagnosis?***
⇒ ***What are other complications that are likely with this condition?***

CASE 6:

A 30-year-old parous woman notes a watery breast discharge of 6 months' duration. Her menses have been somewhat irregular. She denies a family history of breast cancer. The patient had been treated previously with radioactive iodine for Grave's disease. Currently, she is not taking any medications. On examination, she appears in good health. The BP is 120/80 and pulse is 80bpm. The breasts are symmetric and without masses. No skin retraction is noted. No adenopathy is appreciated. The pregnancy test is negative.

⇒ ***What is the most likely diagnosis?***
⇒ ***What is your next step?***

CASE 7:

A 40-year-old multiparous woman complains of menorrhagia of 2-year duration. She states that several years ago a doctor had told her that her uterus was enlarged. Her records indicate that 1-year ago she underwent a D& C , with the tissue showing benign pathology. She takes ibuprofen without relief of vaginal bleeding. On examination, her BP is 130/80, HR 80bpm, and temp is 37C^{o}. The heart and lung examinations are normal. The abdomen reveals a lower abdominal midline irregular mass. On pelvic examination, the cervix is displaced anterior. An irregular midline mass approximately 18 weeks' size seems to move in conjunction with the cervix. No adnexal masses are palpated. Her pregnancy test is negative. Her hemoglobin level is 9.0 g/dl, leucocyte count is 10.000/mm3 , and platelet count is 160.000/mm3.

⇒ ***What is the most likely diagnosis?***
⇒ ***What is the investigation required?***
⇒ ***What is your treatment choice?***

CASE 8:

A 20-year-old primigravida pregnant 30 weeks has severe preeclampsia, with several BP estimations of 160/110 and 4+ proteinuria. She denies headaches or visual disturbances. She notes a 2-day history of severe unremitting epigastric tenderness. The patient's platelet count was 130,00/ml, hemoglobin level is 13g/dl, and SGOT is 2000m IU/ ml (normal <35). Shortly after admission, she received intravenous magnesium sulfate and was induced with oxytocin. She delivered vaginally. Two hours after delivery, the patient complains of the sudden onset of severe abdominal pain and has a syncopal attack. The patient is found to have a BP of 80/60, a distended abdomen, and heart rate of 140bpm with a thready pulse.

⇒ ***What is the most likely diagnosis?***
⇒ ***What is your next step?***

CASE 9:

A 31-year –old nulligravida woman presents with a history of infertility of 2-year duration. She states that her menses began at age 12 years and occurs at 28-day intervals. A biphasic basal body temperature chart is recorded. Hysterosalpingogram shows patent tubes and a normal uterine cavity. Her husband is 34 years old and his semen analysis is normal.

⇒ ***What is the most likely etiology?***
⇒ ***What is your next step?***

CASE 10:

A 23-year- old 2nd gravida, primipara, pregnant 29 weeks complains of a 12-hour-history of colicky right lower abdominal pain and nausea and vomiting. She denies diarrhea or eating a stale foods. She has a history of an 8-cm ovarian cyst, and otherwise she has been in good health. She denies dysuria or fever, and has no surgeries. Her vital signs include a BP of 100/70, HR 105 bpm, RR 12/min., and temp 37C. On abdominal examination, her bowel sounds are hypoactive. The FHS are 140-150 bpm. The abdomen is tender in the right lower quadrant region with significant involuntary guarding. The cervix is closed.

⇒ ***What is the most likely diagnosis?***
⇒ ***What is the best treatment for this condition?***

CASE SOLVING

HOW TO COMMENT ON A CLINICAL CASE?

After careful reading of the proposed case- putting in mind that every given data is put to direct you toward or away from the most likely diagnosis- follow the following scheme:

1. Rearrange the given data according to its significance.
2. Put some differential diagnoses; some of them will be excluded from the given data.
3. The most likely diagnosis remains unopposed by the data given.
4. The next step (when asked for) it may be the most important investigation to confirm the diagnosis, or the first choice treatment option.

CASE 1:

- **The most likely diagnosis**: acute uterine inversion.
- **Most likely complication**: postpartum collapse (hypovolemic + neurogenic shock).

CASE 2:

- **The most likely diagnosis**: Climacteric (perimenopausal state).
- **Next diagnostic step**: serum follicle stimulating hormone estimation (FSH).

CASE 3:

- **Next step:** ultrasound examination.
- **Most likely diagnosis**: placenta previa.
- **Long – term management of this patient**: Expectant treatment as long as the bleeding is not excessive. Cesarean section at 36-37 weeks gestation.

CASE 4:

- **Next step**: Biopsy of the cervical lesion.
- **Most likely diagnosis**: cervical cancer.

CASE 5:

- **Most likely diagnosis**: Anterior pituitary necrosis (Sheehan's syndrome). Asherman's syndrome is also a probable diagnosis that may result from uterine over-curettage, however, it is excluded as the most likely diagnosis by the inability of the lady to breast –feed her baby due to the hypoprolactinemia resulted from the anterior pituitary necrosis.
- **Other complications that are likely with this condition:** anterior pituitary insufficiency, such as hypo-thyroidism, or adreno-cortical insufficiency.

CASE 6:

- **The most likely diagnosis**: Galactorrhea due to hypothyroidism.
- **Next step**: Check serum prolactin and TSH levels.

CASE 7:

- **The most likely diagnosis**: Symptomatic uterine leiomyoma.
- **Investigations required**: Ultrasound (to confirm diagnosis), IVP (to identify the ureteric course to avoid their injury during operation).
- **First choice treatment**: abdominal hysterectomy.

CASE 8:

- **Most likely diagnosis:** Hepatic rupture.
- **Next step**: emergent exploratory laparotomy and blood product replacement.

CASE 9:

- **Most likely etiology**: Endometriosis (peritoneal factor of infertility).
- **Next step**: Laparoscopy

CASE 10:

- **Most likely diagnosis**: Torsion of the ovarian cyst.
- **Best treatment for this condition:** Surgery (laparotomy due to the pregnancy).

Valuable links:

- My YouTube channel: http://youtube.com/user/Osama66
- My lectures on SlideShare: https://www.slideshare.net/OSAMAWARDA/presentations

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CLINICAL ROUNDS IN OBSTETRICS & GYNECOLOGY

The updates in this new 4th edition will include the 2019 FIGO updates in classification of abnormal uterine bleeding, and fibroid subclassification. The pelvic organ prolapse quantification system (POP-Q) of the international continence society (ICS) will be added. Also, will include several links & QR-codes for more explanation of the contents by videos, animation, or live lectures. In addition, a new chapter designed for the residents of obstetrics and gynecology explaining how to write the diagnosis on the patient's sheet in the light of the updates of terminology especially regarding abnormal uterine bleeding and pelvic organ prolapse.