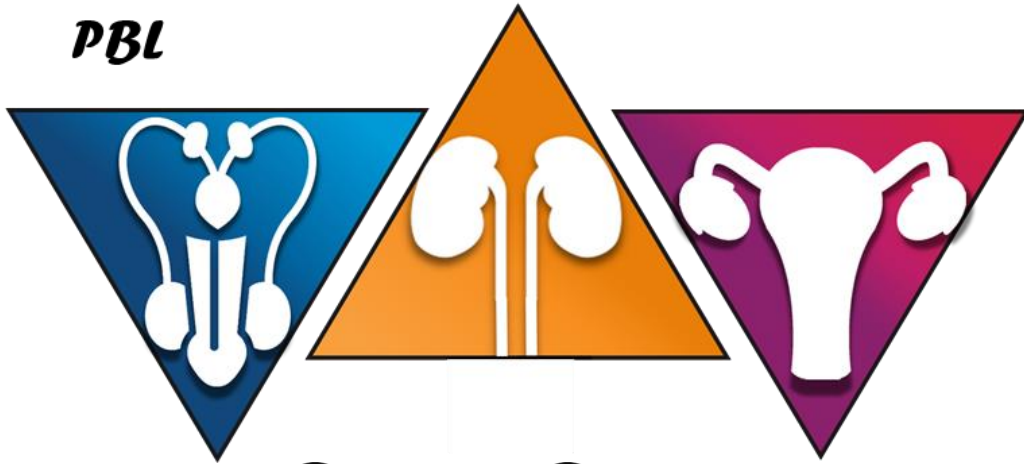




Urogenital system



PBL



Sheet



Slide

Number:

-2

Done by:

- Luma Taweel

Corrected by:

- Muayad Azzam

Doctor:

مأمون القطاونة -

Anatomy of the pelvis

The female pelvis is composed of:

1. Bones
2. Organs: -urinary system (urinary bladder and urethra)
-genital system (uterus, ovaries and vagina)
-bowl system(rectum)
3. Visceral and Parietal Peritoneum
4. Muscles: - levator ani and coccygeus
 - Perineal muscles (transverse and deep perineal muscle, external anal sphincter, bulbospongiosus and ischiocavernosus muscle.)
 - Urogenital diaphragm
5. Pelvic fascia
6. Ligaments

The function of the pelvic components:

1. bones: provide stability
2. urinary bladder: storage of urine and control micturition
 - *If a problem occurs in the bladder, a problem in the voiding of the bladder will occur.
3. uterus and vagina: pregnancy and labour, menstrual period and sexual function.
4. Rectum: stool storage and control defecation
5. pelvic muscles, fascia and ligaments (**pelvic floor**): has two important functions:
 - static function: hold the organs in place and prevent their falling down
 - dynamic function: **maintain organ stability** when the intrabdominal pressure increases or during defecation and micturition.

*The pelvis provides stability for the entirety of the body

Clinical conditions:

Clinical Conditions are categorized into conditions that are *specific* and conditions that are *general* and affect the entire pelvis.

General:

The most common condition that affect the stability of pelvis and pelvic organs is **prolapse**.

The prolapse is similar to hernia, which is protrusion of abdominal components through defects in the abdominal wall muscles or fascia. In prolapse it's the failure of Levator Ani and pelvic fascia (pelvic floor) to hold the organs found in the pelvis.

Risk factors of prolapse

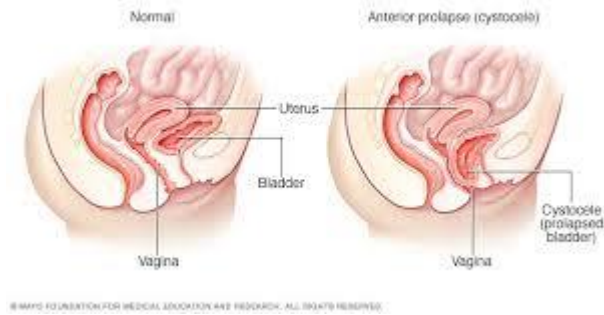
1. **any condition that increase the intrabdominal pressure**
(most important)
 - a. pregnancy and multiparity
 - b. carrying of heavy objects
 - c. constipation
 - d. smoking
 - e. chronic cough and COPD
2. **iatrogenic:**
Example: surgery: during surgery and ligation, they may interfere with the blood supply or nerve supply of pelvic muscles.
3. **Congenital anomalies in pelvic fascia:** example: collagen abnormalities. Those patients have previous or family history of prolapse and hernia, joints hypermobility and incontinence. Any minimal increase in pelvic pressure will cause prolapse in those patients. **This runs in families.**

Clinical scenarios

1. An old lady with 7 children and has prolapse:
The cause is multiparity that weaken the pelvic muscle and cause prolapse.
2. A young lady with 1 child, that was delivered by caesarean section and has prolapse.
The cause may be congenital defects in collagen.

General symptoms of prolapse:

patient complain of a mass protruding through the vagina. This mass could be uterus, urinary bladder or rectum. The pain and mass increases when intraabdominal pressure increases (Such as during walking)



Specific:

Prolapse of urinary bladder (cystocele).

The bladder normally rests on **pubocervical** fascia, that extends from pubic bone to the cervix. Damage to the pubocervical fascia will cause cystocele. This damage is the result of the beforementioned problems leading to prolapse.

This is a structural defect that will lead to a functional defect.

Symptoms of cystocele:

1. A mass protruding through the vagina
2. cystocele cause kinking of the urethra, so the voiding of urine will be incomplete, as a result the patient will suffer from urinary dysfunction.:
 - a. Frequency
 - b. Urgency : strong desire to pass urine that can be controlled
 - c. Nocturia: this form a problem for old women who may fall down and fracture their pelvis.
 - d. Urge incontinence: if the prolapse isn't treated at early stages it will result in urge incontinence. Urge incontinence is involuntary leakage of urine that is preceded by urgency.
 - e. Stress incontinence: when exercising, sneezing
3. Dysuria; the incomplete micturition cause urine stagnation, which provide a good medium for bacterial growth and UTI.
4. The urinary dysfunction will affect the quality of life and may reach depression. (according to the Professor, it affects quality of life more than diabetes.)

- Unfortunately, many ladies present lately when they suffer from incontinence. Also, the symptoms of urinary dysfunction may be misdiagnosed as UTI and the patient is given an antibiotic.
- The symptoms of urinary dysfunction are treated by anticholinergic drugs.

Prolapse of uterus (uterine prolapse)

The strongest ligament that maintain stability of the uterus is **uterosacral** ligament which extends from the posterolateral surface of cervix to S2-S3 vertebra.

Damage to uterosacral ligament cause uterine prolapse. This damage can be a result of heavy lifting or connective tissue problem ...(problems leading to prolapse).

Symptoms of uterine prolapse:

1. The **early presentation** is a protruding mass through the vagina, when coughing, lifting heavy objects or any thing that increase the intrabdominal pressure. (this mass isn't always protruding)
 2. **Late symptoms:** a mass that is always protruding and the patient may push it back or a complete uterine prolapse.
 3. The presence of the uterus or vagina outside make them prone to infection that will cause ulceration and bleeding.
- Unfortunately, many women especially the old age women present when they suffer from bleeding.

Rectal prolapse (rectocele)

The rectum rest on **rectovaginal** fascia, if this fascia is damaged this will cause rectocele.

Symptoms of rectocele:

1. Protruding mass from vagina
2. Bowl dysfunction:
 - a. Constipation
 - b. Incomplete emptying of rectum
 - c. Faecal incontinence

Notes:

- a lady may present by a prolapse of a single organ or multiple organs (uterine prolapse and rectocele)
- the conservative treatment in early stages is pelvic floor exercises
- if a patient had mild prolapse and the risk factors disappear, she can deliver by normal delivery.
- if a patient had huge prolapse or incontinence, she is advised to not get pregnant, but if she gets pregnant, she must deliver by caesarean section.

Rupture of perineal body

Perineal muscles are attached to the perineal body. The vaginal opening is 2-3 cm in diameter and the diameter of foetal head is 10cm, so during labour the perineal body may rupture and cause trauma.

To prevent rupture of perineal body, episiotomy must be performed. (Episiotomy is a surgical cut made at the opening of the vagina during childbirth, to aid a difficult delivery and prevent rupture of tissues.)

Rupture of perineal body may cause **sexual dysfunction**, even if it is sutured after the delivery. So, the patient complains of lack of sexual sensation due to the widening of the vagina.

Female external genital organs:

1. Labia majora: composed of fat so it acts as a cushion
2. Labia minora: control direction of urination and has a role in sexual sensation
3. Vestibule
4. Clitoris