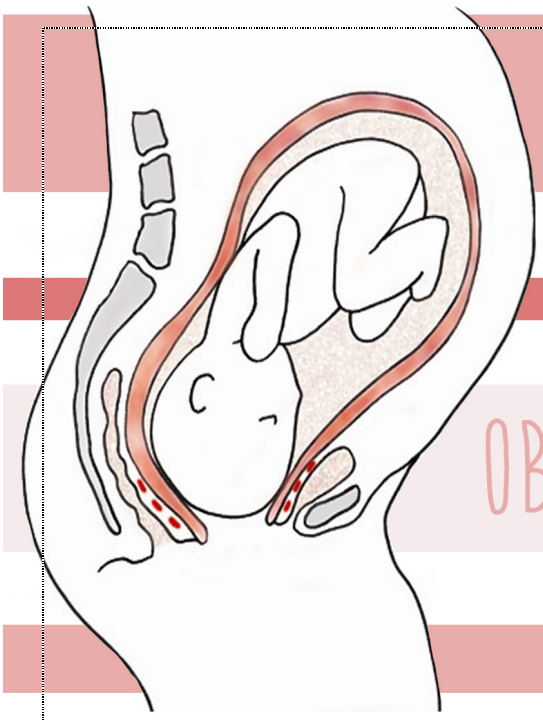

OBSTETRICS AND GYNECOLOGY

(12) Uterine fibroid

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Doctor's note Team's note slides Important 431 teamwork

Objectives:

Definitions

Pathogenisis, Behavior & malignant potential.

Clinical presentations

Work – up

Managements.

What is it ?

Most common neoplasm of the uterus.

Benign monoclonal tumors.

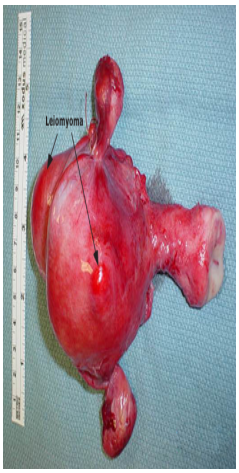
Derived from the smooth muscle cell of the myometrium.

Leiomyoma:

Most common neoplasm of the uterus.

Benign monoclonal tumors.

Derived from the smooth muscle cell of the myometrium.
(leiomyomas + fibroids + Myomas)àbenign



Uterine fibroid

submucosal

protrude into the .uterine cavity

bleeding غ

intramural

develop from within the uterine wall.

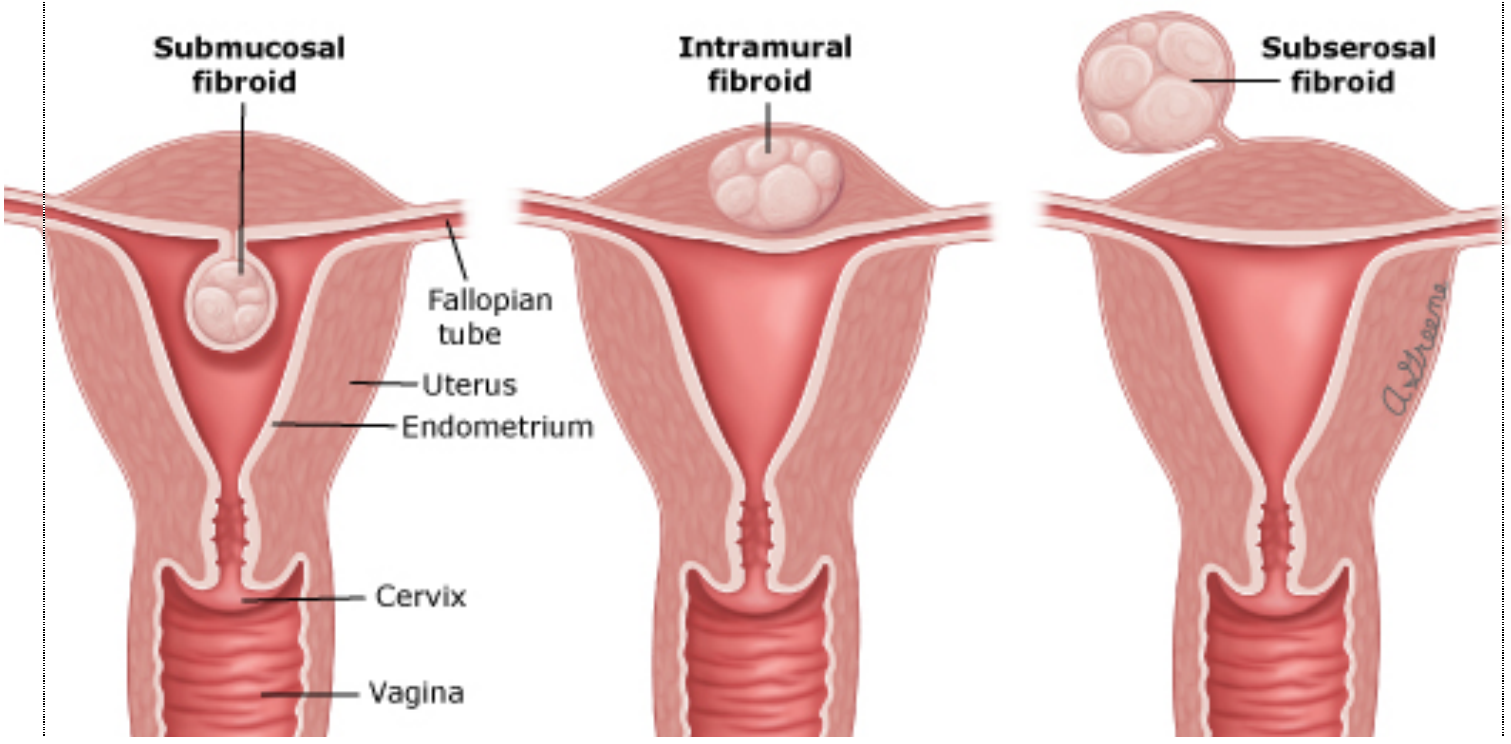
white hilanization.

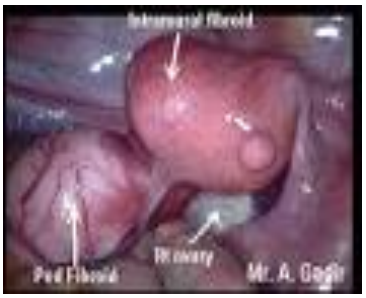
subserosal

originate from the myometrium at the serosal surface of the uterus

They can have a broad or pedunculated base.

(torsion)*

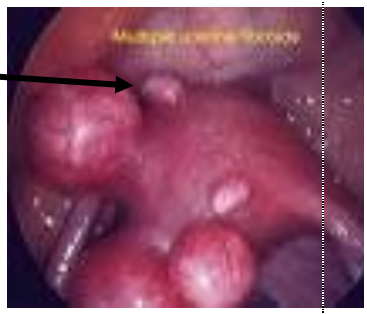




Subserosal

Subserosal myomas (FIGO type 6,7)

These leiomyomas originate from the myometrium at the serosal surface of the uterus.

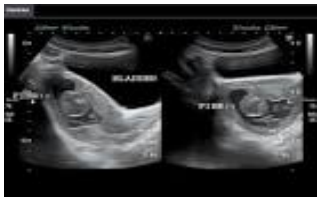


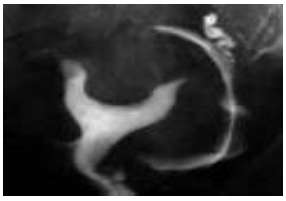
They can have a broad or pedunculated base and may be intraligamentary (ie, extending between the folds of the broad ligament).

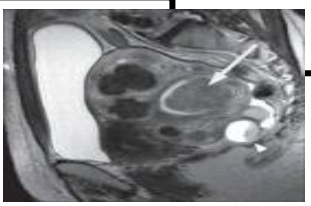
Submucosal

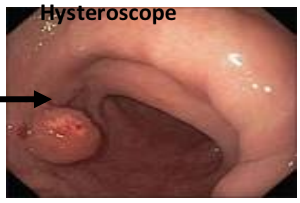
Submucosal myomas (FIGO type 0,1,2)

These leiomyomas derive from myometrial cells just below the endometrium. These neoplasms protrude into the







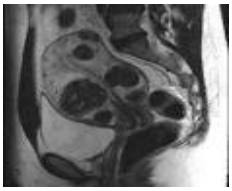


uterine cavity.

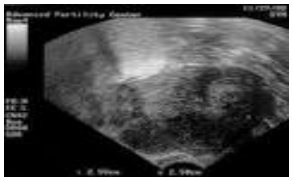
MRI

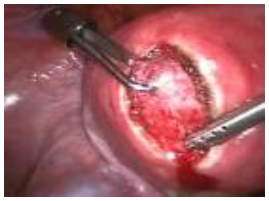
Intramural

Intramural myomas (FIGO type 3,4,5) these leiomyomas develop from within the uterine wall. They may enlarge sufficiently to distort the uterine cavity or serosal surface.



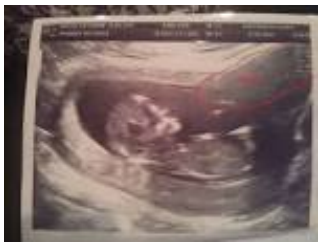
Some fibroids can be transmural and extend from the serosal to the mucosal surface.





Cervical

Cervical myomas (FIGO type 8) These leiomyomas are located in the cervix, rather than the uterine corpus.



Prevalence

*A hysterectomy study found myomas in 77 percent of uterine specimens.

*The epidemiology of leiomyomas parallels the ontogeny and life cycle changes of the reproductive hormones estrogen and progesterone.

*Myomas are clinically apparent in approximately 12 to 25 percent of reproductive age women and noted on pathological examination in approximately 80 percent of surgically excised uteri .

*Most, but not all, women have shrinkage of

Leiomyomas at menopause

Estrogen and progesterone does not cause fibroid, we don't know the initial reason for fibroid origination but, estrogen make the fibroid grow)

Risk factors

Race

Two- to three-fold greater in black women than in white women

The natural history of leiomyomas also differs by race. Most white women with symptomatic fibroids are in their 30s or 40s; however, black women develop symptoms on average four to six years younger and may even present with disease in their 20s.

Fibroids grow at a slower rate after age 35 in white women, but not in black women

Compared with white women, black women experience more severe disease based on their symptoms and have more extensive disease at the time of hysterectomy

Menstrual history and parity (Any reason that make the woman expose more to estrogen)

Early menarche (<10 years old) is associated with an increased risk of developing fibroids.

Prenatal exposure to diethylstilbestrol is associated with an increased risk of fibroids(keeping the woman in a prolonged period of estrogen suppression med431)

Parity decreases the chance of fibroid formation

Early age at first birth decreases risk and a longer interval since last birth increases risk

Hormonal contraception

لأنها مو استرجين فقط معاه غالبا بروجسترون

Use of low dose oral contraceptives (OCs) does not cause fibroids to grow, therefore administration of these drugs is not contraindicated in women with fibroids

Long acting progestin-only contraceptives (eg, depot medroxyprogesterone) protect against development of leiomyomas.

Heredity

Studies imply a familial predisposition to leiomyomas in some women. There is also increasing evidence of specific susceptibility genes for fibroids.

Ovulation induction agent

There are isolated reports of leiomyoma enlargement in women treated with clomiphene

Obesity

Most studies show a relationship between fibroids and increasing body mass index. The relationship is complex and is likely modified by other factors, such as parity, and may be more related to change in body habitus as an adult.

Diet, Caffeine, Alcohol & smoking

Smoking decreases the risk of having fibroids

Beef and other reds meats (1.7-fold) is associated with an increased relative risk of fibroids and consumption of green vegetables (0.5-fold) and fruit (especially citrus fruit) with a decreased risk, There is increasing evidence that vitamin D deficiency or insufficiency is linked to fibroid risk

Consumption of alcohol, especially beer, appears to increase the risk of developing fibroids.

Caffeine consumption is not a risk factor. 

clinical manifestation

Heavy or prolonged menstrual bleeding(Most common fibroid symptom)

Degree of uterine bleeding are determined by the **location** of the fibroid, size is of secondary importance

Submucosal myomas that protrude into the uterine cavity (eg, types 0 and I)are most frequently related to significant menorrhagia. (patient with submucus fibroid bleeds more than patient with intramural fidroid while patient with subserosal may be silent and does not give any complain).

Pelvic pressure and pain

Bulk-related symptoms(Urinary frequency, difficulty emptying the bladder, and, rarely, urinary obstruction can all occur with fibroids)

Fibroids that place pressure on the rectum can result in constipation.

Back pain may, on occasion, be related to the presence of myomas

Very large uteri may compress the vena cava and lead to increase in thromboembolic risk

Dysmenorrhea

Dysmenorrhea is also reported by many women with fibroids. This pain in many women appears to be correlated with heavy menstrual flow and/or passage of clots.

Dyspareunia

It is controversial anterior or fundal fibroids are the most likely to be associated with deep dyspareunia.

(painful intercourse) especially if the fibroid tilting the uterus= alarming sign. ,med431

Leiomyoma degeneration or torsion

Infrequently, fibroids cause acute pain from degeneration or torsion of a pedunculated tumor(Subserosal myomas).

Pain may be associated with a low grade fever, uterine tenderness on palpation, elevated white blood cell count, or peritoneal signs.

The discomfort resulting from degenerating fibroids is self-limited, lasting from days to a few weeks, and usually responds to nonsteroidal antiinflammatory drugs.

Reproductive dysfunction

Leiomyomas that distort the uterine cavity (submucosal or intramural with an intracavitary component) result in difficulty conceiving a pregnancy and an increased risk of miscarriage.(it wont cuase infertility)

MED431 *Poor vascularity of the endometrium covering the fibroid making the implantation very poor.

Adverse pregnancy outcomes (placental abruption, fetal growth restriction, malpresentation, and preterm labor and birth)

Diagnosis

Pelvic exam

Bimanual pelvic examination, an enlarged, mobile uterus with an irregular contour Infrequently, on speculum exam, a prolapsed submucosal fibroid may be visible at the external cervical os.

Imaging

MED431 the gold standard step to detect submucous fibroids is Saline infusion sonohysterography.

Ultrasound:

Transvaginal ultrasound has high sensitivity (95 to 100 percent) for detecting myomas in uteri less than 10 weeks' size Most widely used modality due to its availability and cost-effectiveness

Saline infusion sonography (sonohysterography) improves characterization of the extent of protrusion into the endometrial cavity by submucous myomas

Diagnostic hystroscopy

Office flexible hystroscope to diagnose submucos myoma and extend of protrusion to endometrial cavity

MRI

Best modality for visualizing the size and location of all uterine myomas Due to the expense of this modality, its use is best reserved for surgical planning for complicated procedures

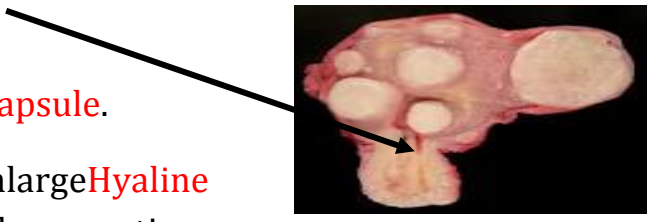
HSG Good technique for defining the contour of the endometrial cavity

Difrential diagnosis(it depends on age)

Uterine sarcoma\ Uterine carcinosarcoma\ Endometrial carcinoma (old)\ Metastatic disease (typically from another reproductive tract\ primary Leiomyoma\ Uterine adenomyosis or adenomyoma\ Leiomyoma \variant Adenomatoid tumors\ Pregnancy(reproductive age)\ Hematometra.

Pathology

Spherical, well circumscribed, white firm lesion with whorled appearance on cut section.



Does not have true capsule… pseudocapsule.

Degenerative changes as the tumor enlargeHyaline degeneration (Most common)Cystic degeneration Calcification (After menopause)Fatty degeneration (Rare) Red degeneration 5-10% during pregnancy.

Management:

the fibroid(هي اللي تقول عالج)

Relief of symptoms is the major goal in management

The type and timing of any intervention should be individualized, based upon the following factors:

Type and severity of symptoms

Size of the myoma(s)

Location of the myoma(s)

Patient age

Reproductive plans and obstetrical history

(expectant, medical, surgical and interventional)

1-EXPECTANT

- Can shrink substantially during the postpartum period
- Initial imaging study (usually an ultrasound) to confirm that a pelvic mass is a fibroid and not an ovarian mass.
- Annual pelvic exams and, in patients with anemia or menorrhagia, check a complete blood count.
- If symptoms or uterine size are increasing, we proceed with further evaluation and patient counseling regarding treatment options.
- Rule out other causes of menorrhgea
  - Hypothyrodism.
  - Bleeding disorders.

2-Medical therapy:

A-Gonadotropin-releasing hormone agonists

- Most effective medical therapy for uterine myomas.
- Work by initially increasing the release of gonadotropins, followed by desensitization and downregulation to a hypogonadotropic, hypogonadal state that clinically resembles menopause.
- Most women will develop amenorrhea, improvement in anemia and a significant reduction (35 to 60 percent) in uterine size within three months of initiating this therapy.

GnRh agonist side effect:

- Rapid resumption of menses and pretreatment uterine volume after discontinuation of GnRH agonists.
- Hot flashes, sleep disturbance, vaginal dryness, myalgias and arthralgias, and possible impairment of mood and cognition [15]. Bone loss leading to osteoporosis after long-term (12+ months) use is the most serious complication and most often limits therapy.

Used as preoperative therapy.

- GnRH agonists are approved for administration for three to six months prior to leiomyoma-related surgery in conjunction with iron supplementation to facilitate the procedure and enable correction of anemia Reduction in uterine size can facilitate subsequent surgery by reducing intraoperative blood a transverse (rather than vertical) abdominal incision, or a minimally-invasive procedure.

B-Gonadotropin-releasing hormone antagonists

- Similar clinical results have been achieved with GnRH antagonists, which compete with endogenous GnRH for pituitary binding sites
- The advantage of antagonists over agonists is the rapid onset of clinical effects without the characteristic initial flare-up observed with GnRH agonist treatment.

2-Interventional radiology A patient does not want to go for surgery and she did not respond to medical treatment and she is still suffering → use interventional radiology.)

- Uterine artery embolization
  - minimally invasive option for management of leiomyoma-related symptoms, excellent technical and clinical success has been reported.

- It is an effective option for women who wish to preserve their uterus and are not interested in optimizing future fertility.
- UFE results in shrinkage of myomas of approximately 30 to 46 percent(ovaries - Premature menopause) http://www.webmd.com/women/uterine-fibroids/uterine-fibroid-embolization-ufe

- Interventional radiology Magnetic resonance guided focused ultrasound

- More recent option for the treatment of uterine leiomyomas in premenopausal women who have completed childbearing.
- This noninvasive thermoablative technique converges multiple waves of ultrasound energy on a small volume of tissue, which leads to its thermal destruction.

3-Surgical therapy

A-Myomectomy it's an option for women who have not completed childbearing or otherwise wish to retain their uterus.

- Disadvantage of this procedure is the risk that more leiomyomas will develop from new clones of abnormal myocytes

Hysteroscopic myomectomy is the procedure of choice for removing intracavitary myomas (submucus fibroid specifically)

B-Hystrectomy definitive end to symptomatology).

- Women with acute hemorrhage who do not respond to other therapies
- Women who have completed childbearing and have current or increased future risk of other diseases.

- Women who have failed prior minimally invasive therapy for leiomyomas
- Women who have completed childbearing and have significant symptoms, multiple leiomyomas, and a desire for a definitive end to symptomatology.

Management

expectant

- it Can shrink substantially during the postpartum period,
- Initial imaging study (usually an ultrasound) to confirm that a pelvic mass is a fibroid and not an ovarian mass.
- Annual pelvic exams and, in patients with anemia or menorrhagia, check a complete blood count.
- If symptoms or uterine size are increasing, we proceed with further evaluation and patient counseling regarding treatment options.
- Rule out other causes of menorrhgea
- Hypothyrodism.
- Bleeding disorders

medical

- **1-Gonadotropin-releasing hormone agonists**
- Most effective medical therapy for uterine myomas.
- Work by initially increasing the release of gonadotropins, followed by desensitization and downregulation to a hypogonadotropic, hypogonadal state that clinically resembles menopause.
- Most women will develop amenorrhea, improvement in anemia and a significant reduction (35 to 60 percent) in uterine size within three months of initiating this therapy. .
  - Used as preoperative therapy.
  - **2-Gonadotropin-releasing hormone antagonists**
- The advantage of antagonists over agonists is the rapid onset**.**

surgical

- Myomectomy
- **<u>Hystrectomy</u> definitive end to symptomatology).**

Interventional

- A patient does not want to go for surgery and she did not respond to medical treatment and she is still suffering à◊ use interventional radiology.

note from Hacker & Moore's Essentials of Obstetrics and Gynecology page 241-245 :

*Leiomyomas can also enlarge dramatically during pregnancy.
*During pregnancy, 5% to 10% of women with fibroids undergo a painful red or carneous
degeneration .
*Most uterine leiomyomas cause no symptoms.
*The most common differential diagnoses are an ovarian neoplasm, a tubo-ovarian inflammatory mass, a pelvic kidney, a diverticular or inflammatory bowel mass, or cancer of
the colon.
*In general, if a small, asymptomatic fibroid is detected, treatment is not necessary. Unless the fibroid uterus is excessively large (>12-week gestational size) or is implicated as a cause of infertility in a woman seeking
pregnancy, the first line of treatment is targeted to her symptoms.
*TABLE 19-1 **page 245**

Summary

https://www.youtube.com/user/UterineFibroidsCure

Endometrial neoplasm includes both benign and malignant.

*__Leiomyomas (__Benign) are the most common neoplasm of the uterus.

--- **Risk factors include**: race (more in black women), menstrual history and parity, hormonal contraception,
heredity, ovulation induction agent, obesity, diet, caffeine, alcohol and smoking.

- **Clinical manifestation**: Heavy or prolonged menstrual bleeding, Pelvic pressure and pain, Leiomyoma
degeneration or torsion and Reproductive dysfunction.

- Diagnosis: pelvic exam, imaging(US,MRI), Diagnostic hysteroscopy-

-Differential diagnosis: leiomyoma, uterine adenomyosis or adenomyoma, leiomyoma variant,
adenomatoid tumors, pregnancy, hematometra, uterine sarcoma, uterine carcinosarcoma, endometrial
carcinoma, metastatic disease.

-**Pathology:** Spherical, well circumscribed, white firm lesion with whorled appearance on cut section, does
not have true capsule (pseudocapsule).

-Management: expectant (Relief of symptoms is the major goal in management), medical, surgical and interventional .

MCQ's :

1-Regarding Submucous uterine fibroids all of the following are correct EXCEPT:

A.May become polypoidal.
B.Can become infected.
C.Frequently cause infertility.
D.Often present with menorrhagia.
E.Can be removed hysteroscopically.

2-. Regarding uterine leiomyomata may undergo the following changes EXCEPT:

A.Hyaline degeneration.
B.Squamous metaplasia.
C.Atrophy.
D.Calcification.
E.Sarcomatous change

3-Uterineleiomyoma generally require no treatment. When treatment is indicated, it is most frequently because of :

A.Interference with reproductive function.
B.Rapid enlargement with the hazards of Sarcomatous degeneration.
C.Pain.
D.Excessive uterine bleeding.
E.Impingement on an other organhttps

://www.scribd.com/doc/133022756/33/Uterine-Fibroids-Leiomyomas.

1-c
2-b
3-d

For mistakes or feedback

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