

FIBROID UTERUS

A SILENT BURDEN
IN **WOMEN'S** HEALTH



You are not alone.
Let's talk.
Let's heal.
Let's thrive.



PRESENTER

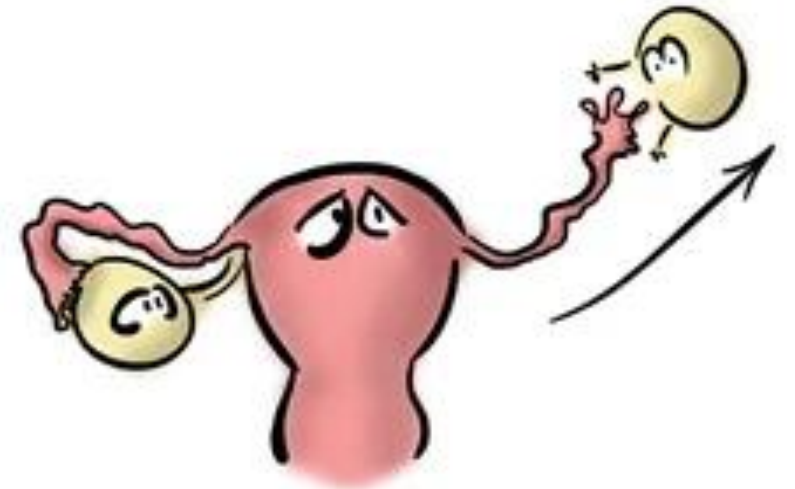
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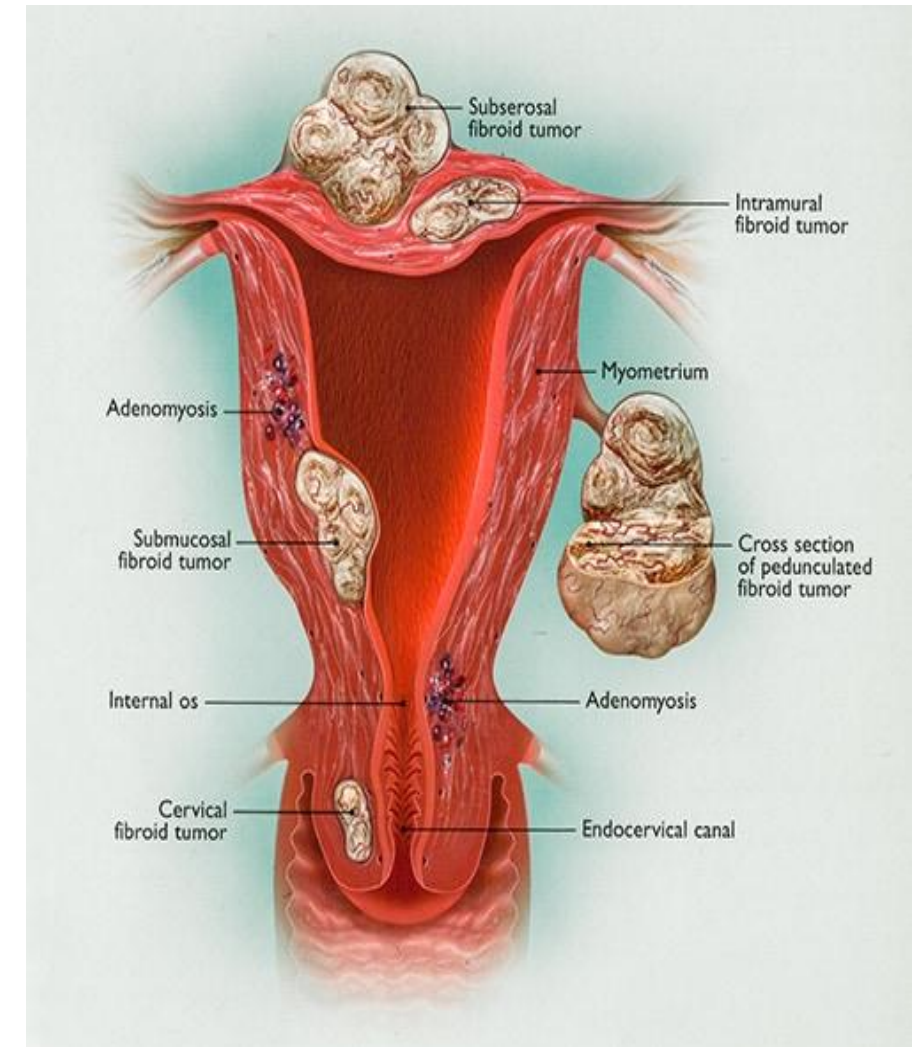
Basic consideration during the presentation

- Definition of fibroid
- Epidemiology
- Types & Causes
- Signs and symptoms
- Gross and microscopic features
- Degenerative changes in fibroid
- Treatment options
- Complications
- Effects on pregnancy and vice versa



DEFINITION

Fibroids are the most common benign tumors in the uterus and in women. They consist of smooth muscle and fibrous tissue and are also called uterine leiomyomas, myomas, or fibromyomas.



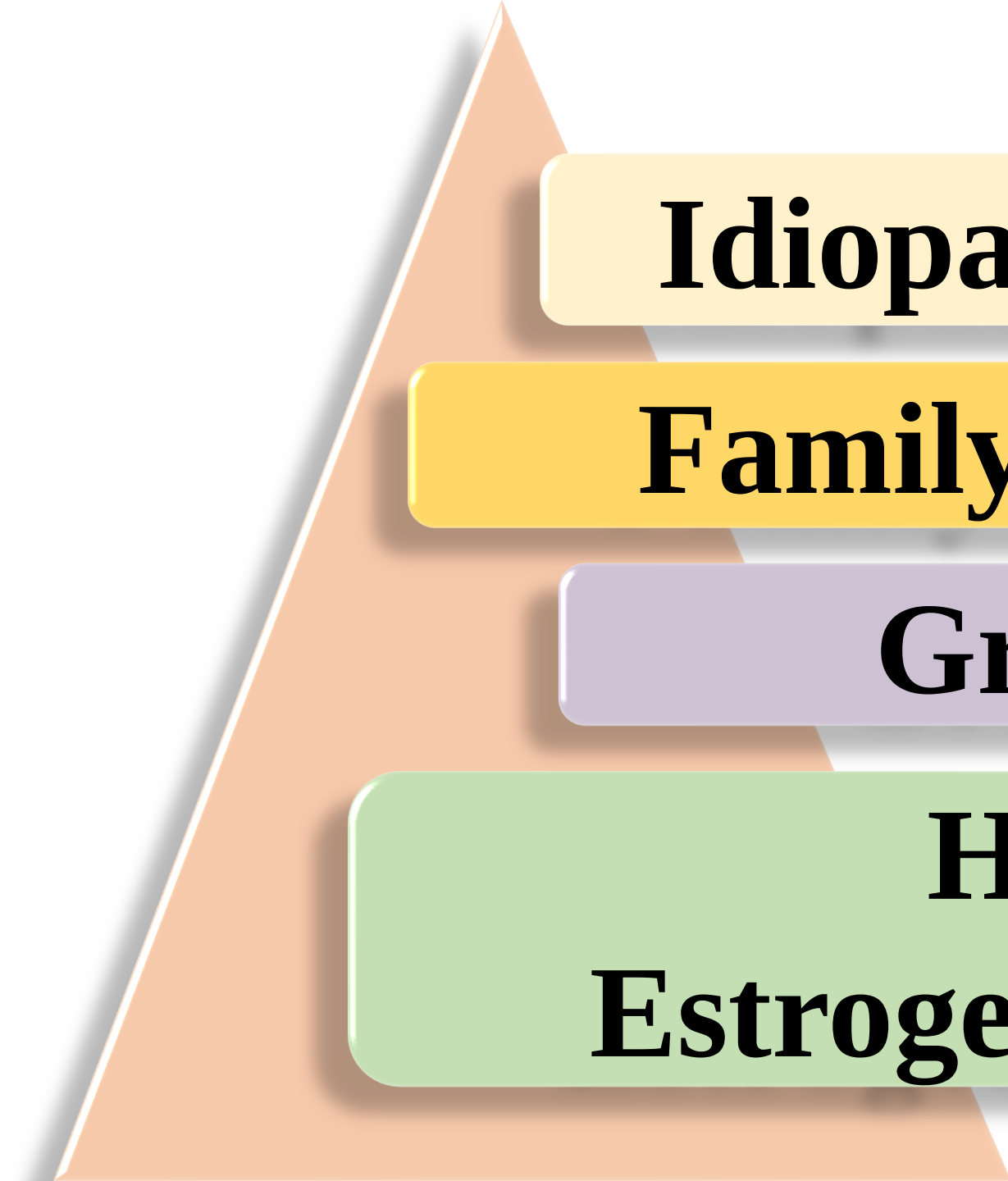
Incidence

While up to 80% of women globally may develop fibroids by age 50, in specific Bangladeshi clinical settings, a significant number of symptomatic cases present between the ages of 31 and 40 (approximately 52%).



Etiology

Understanding the
Causes and Origins of
Disease



Idiopathic

Family history

Growth factor

Hormones

Estrogen, progesterone

OTHER FACTORS:

- Onset of menstruation at an early age
- Poor diet
- Low levels of **vitamin D**
- Drinking alcohol
- Obesity



RISK FACTORS

- Multiparity and infertility.
- Increasing age.
- Ethnicity.
- Increased BMI.
- Family history.
- Hyperoestrogenic state.



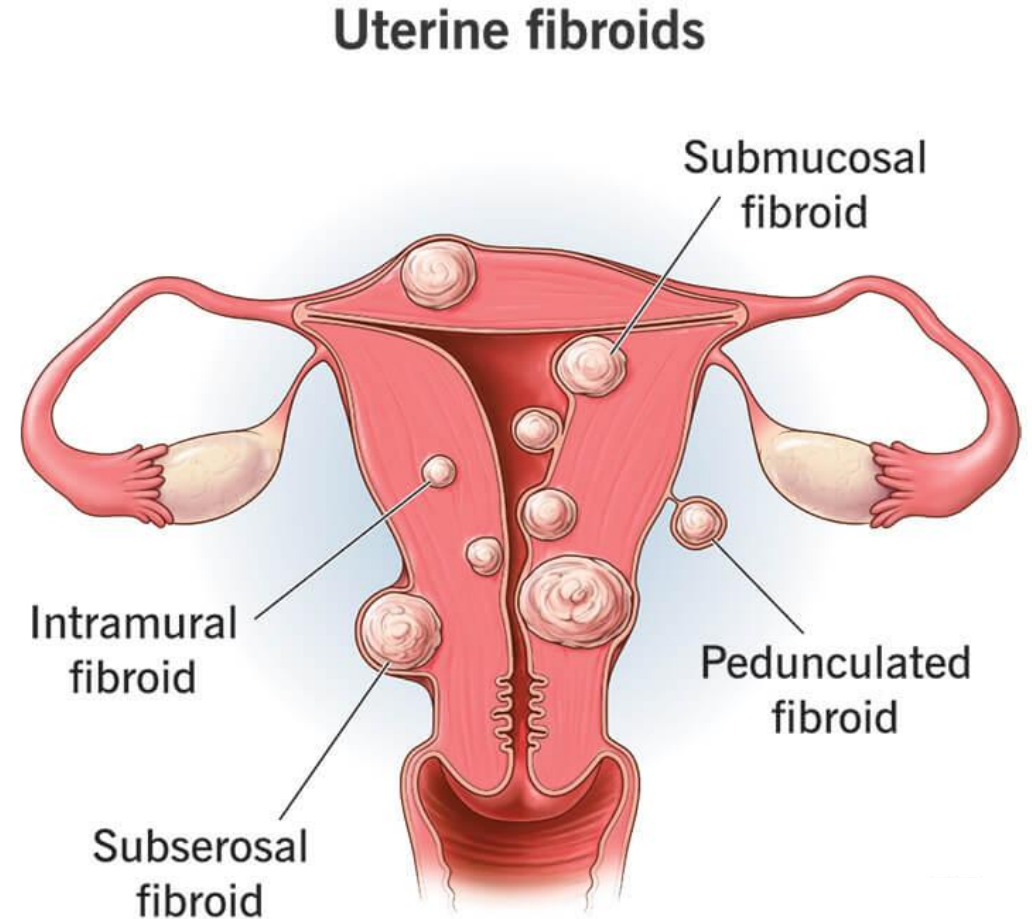
Classification of Fibroids

Within body of
Uterus

- Intramural Fibroids
- Subserosal Fibroids
- Submucosal Fibroids

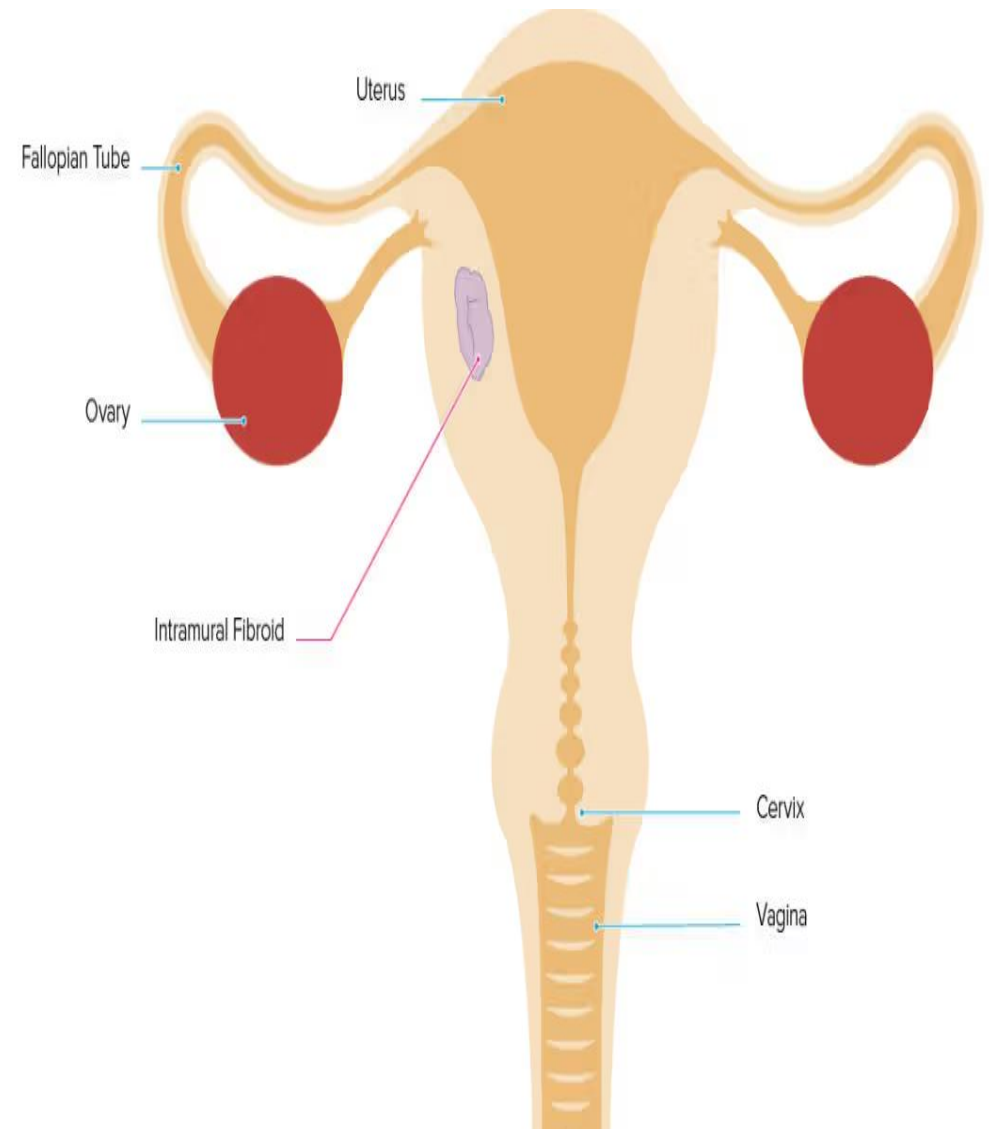
Cervical

Intraligamentary



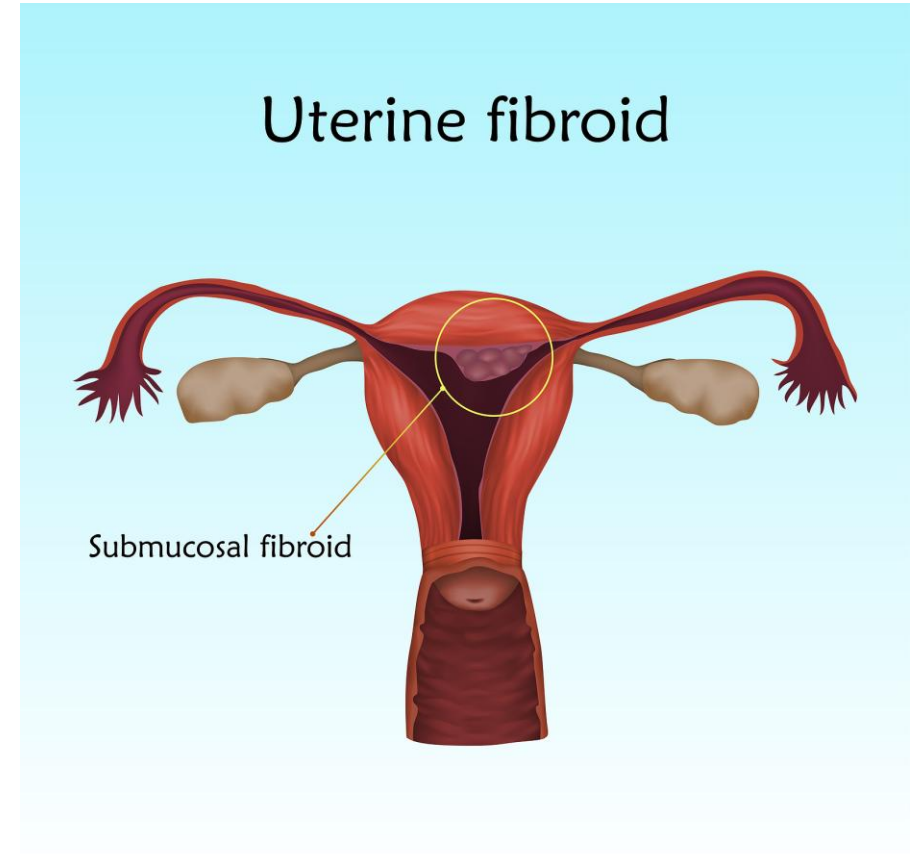
Intramural Fibroid

Within uterine wall,
surrounded by
myometrium, non
capsulated but
pseudocapsule form
with growth, blood
supply is through
nutrient arteries
entering through
the pseudocapsule.



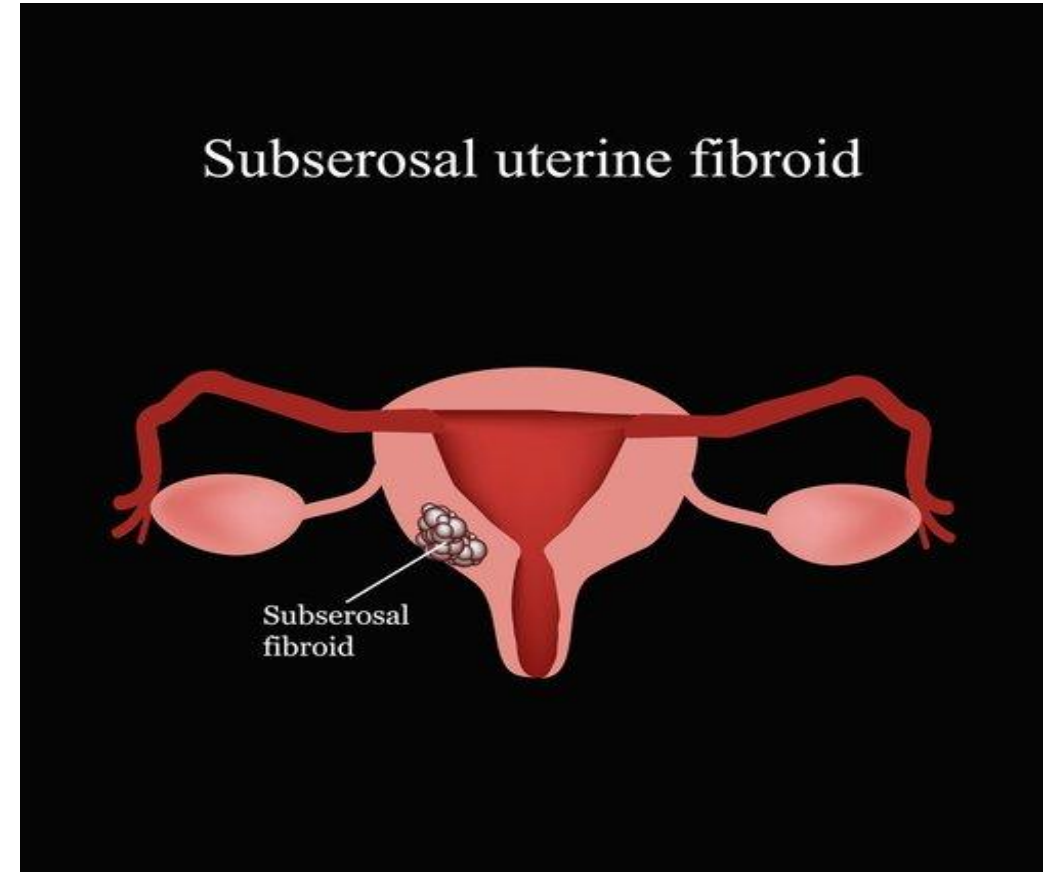
Submucosal Fibroid

Arises from inner **myometrium**, covered with endometrium. Projects inwards from uterine wall into uterine cavity, may get pedunculated.



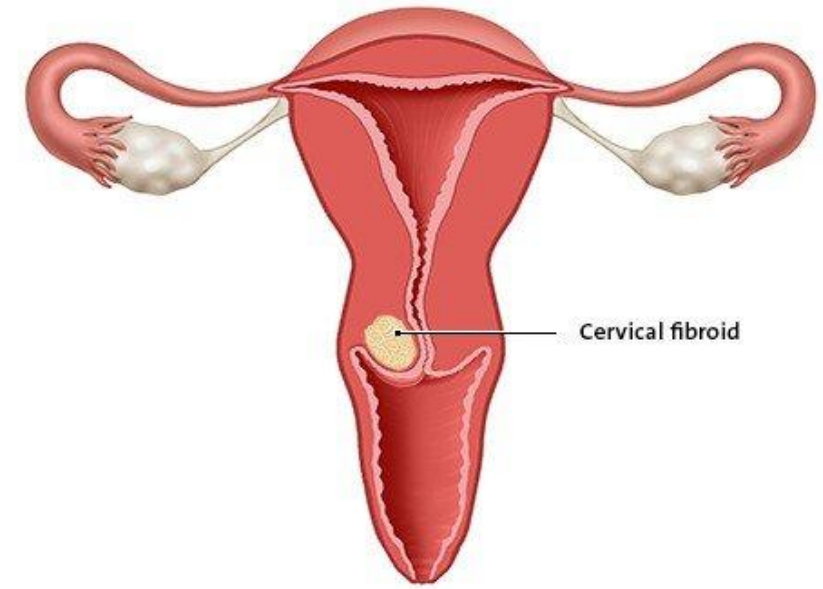
Subserosal Fibroid

It develops from the myometrium and grows outward beneath the uterine serosa, projecting toward the pelvic or abdominal cavity.



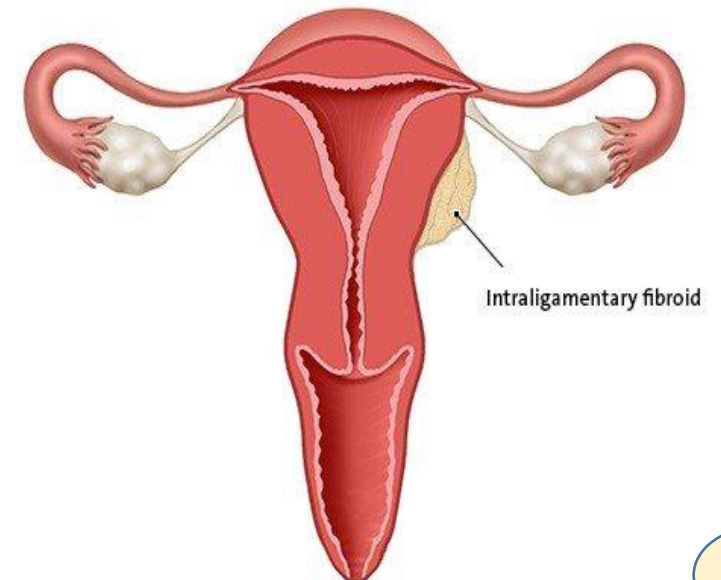
• **Cervical Fibroid:**

Less common (1-2%), arises from cervix, usually single, Confined to the supra-vaginal portion of cervix, enter intramural or intra luminal.



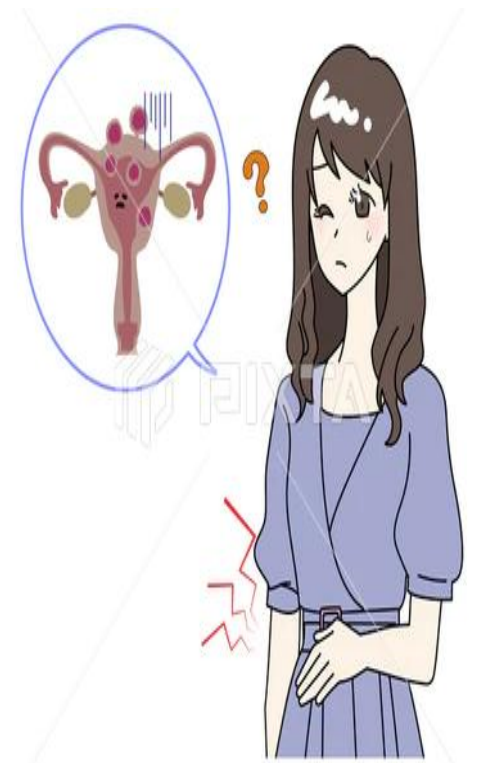
• **Intraligamentary Fibroid:**

Arises from smooth muscles fibers with in the broad ligament e.g round ligament.



Symptomatology

- Fibroids are usually symptom-free, especially when size is small.
- Menorrhagia occurs with intramural and submucous fibroids, causing heavy but regular bleeding due to:
 - Larger endometrial surface
 - Ulcerated endometrium over fibroids
 - Venous drainage blocked by fibroids
- Submucous fibroids may cause bleeding between periods.
- Pedunculated submucous fibroids can cause bleeding after sex.



- **Subfertility:**

30% of fibroid patients face fertility issues. It's unclear if fibroids cause or result from infertility. Possible reasons:

- a) Delayed childbirth may lead to fibroids.
- b) Fibroids may block implantation.

- **Pain:** Usually starts when complications occurs e.g
 - torsion
 - red degeneration
 - sarcomatous degeneration.



- **Urinary symptoms:**

- Small cervical fibroid irritates bladder, causing frequent urination.
- Large fibroid blocks pelvis, leading to urinary retention.

- **Pressure symptoms:**

- Large fibroids block leg veins and lymph, causing swelling and varicose veins.
- Pressure on pelvic veins can cause hemorrhoids.

- **Abdominopelvic mass:**

- Large fibroids fill abdomen, causing stomach upset and breathing trouble from lung pressure.

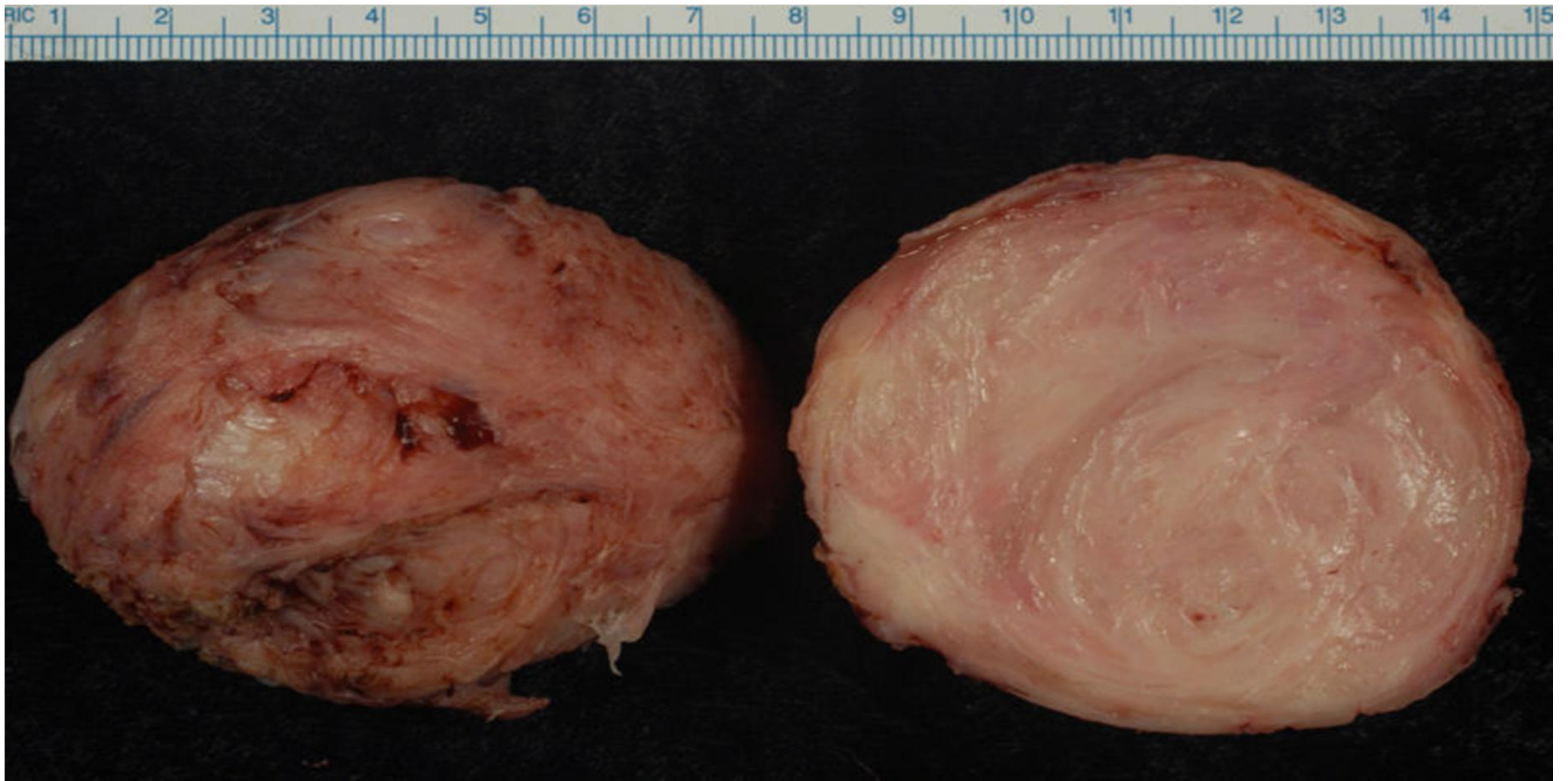


PATHOLOGY

GROSS:

- Nodular, firm, oval or round structures
- Whorled pattern inside
- Usually multiple (up to 125), sometimes single
- Size varies from tiny seedlings to large masses, often grape-sized.



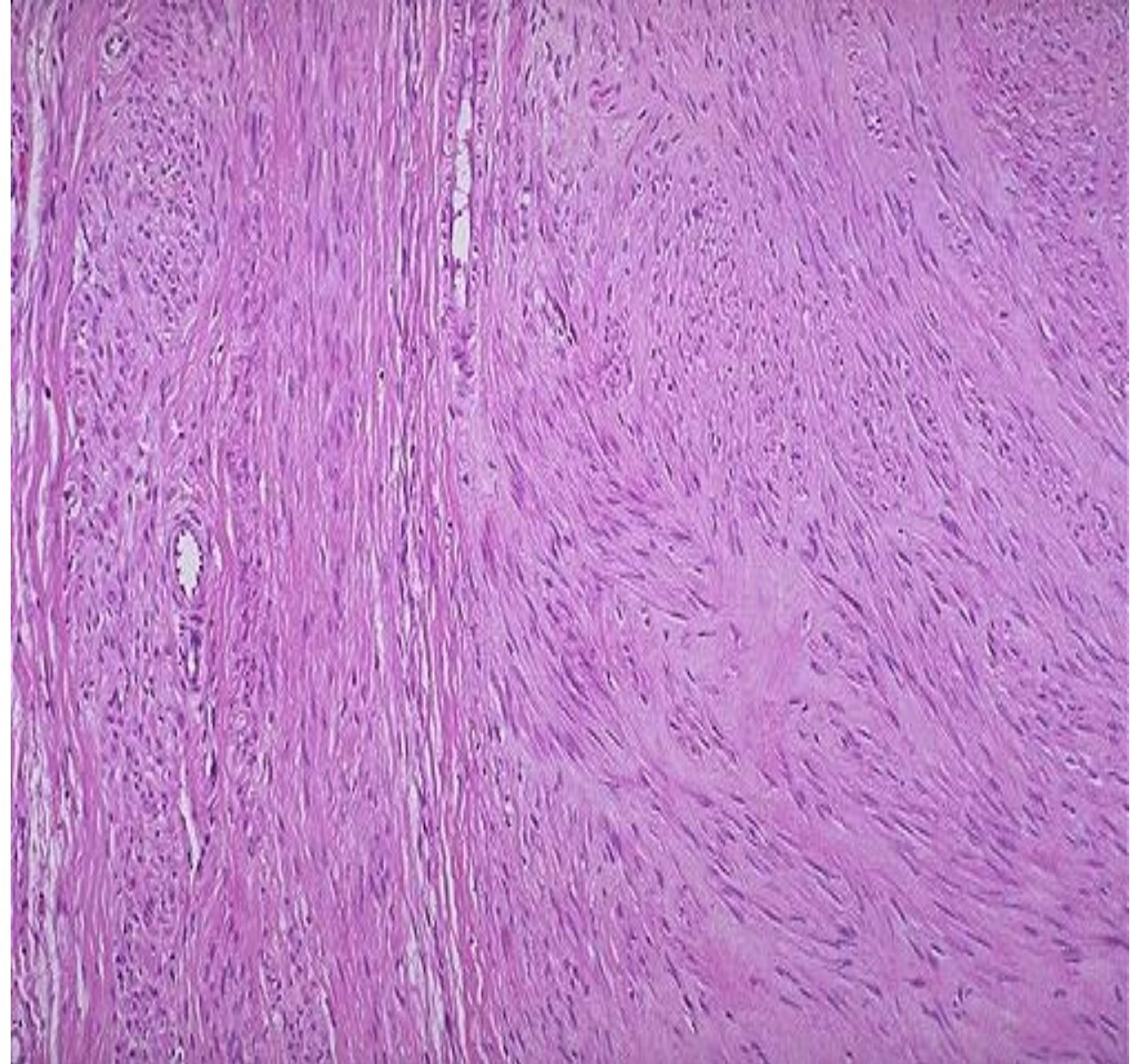


Uterine leiomyoma, External surface on left, Cut surface on right

Pathology

Microscopy:

- Smooth muscle cell bundles arranged in whorled pattern with variable amount of connective tissue.
- Fibrous tissue is occasionally present but generally not predominant.



All about Fibroid Degeneration



Degeneration:

Blood supply to fibroid is from periphery and the central area is relatively deprived of circulation so a rapidly growing fibroid easily undergo degeneration, these include-

LEIOMYOMA

19 Degenerative Changes



“
Degeneration
changes the nature,
not the essence.
”

01 Hyaline Degeneration



Most common ($\approx 60\%$).
Firm, white, whorled
appearance.

02 Cystic Degeneration



Secondary to hyaline
change; cystic spaces
with clear fluid.

03 Red (Carneous) Degeneration



Common in pregnancy.
Hemorrhage into the
tumor.

04 Calcific Degeneration



Common after
menopause.
Dystrophic calcification.

05 Myxoid Degeneration



Accumulation of mucoid
material; rare.

06 Fatty Degeneration



Replacement by
mature adipose tissue;
rare.

07 Mucoid Degeneration



Similar to myxoid;
rich in acid
mucopolysaccharides.

08 Edematous Degeneration



Accumulation of fluid
in the interstitial
spaces.

09 Hemorrhagic Degeneration



Bleeding within the
tumor without
infarction.

10 Infarctive (Ischemic) Degeneration



Due to compromised
blood supply;
leads to necrosis.

11 Suppurative Degeneration



Infection of the
leiomyoma leading to
pus formation.

12 Gangrenous Degeneration



Severe ischemia
leading to tissue
death.

13 Xanthomatous Degeneration



Foamy macrophage
accumulation;
extremely rare.

14 Liposclerotic Degeneration



Combination of fatty
change and sclerosis;
very rare.

15 Hemosiderotic Degeneration



Deposition of
hemosiderin due to
chronic hemorrhage.

16 Atrophic Degeneration



Shrinkage of tumor
due to inadequate
blood supply.

17 Sclerotic Degeneration



Increased fibrosis and
collagen deposition;
firm mass.

18 Amyloid Degeneration



Rare deposition of
amyloid material in
the tumor.

19 Metaplastic Degeneration



Rare transformation
into another tissue
type.

★ Key Take Home ★

- Hyaline degeneration is the most common.
- Red degeneration is classically seen in pregnancy. ♀
- Degenerative changes do not mean malignancy.



Remember: Degeneration reflects **changes in environment**, not in the **nature** of leiomyoma.

HYALINE DEGENERATION



DEFINITION

Hyaline degeneration is a change in which smooth muscle cells of leiomyoma are replaced by homogeneous, glassy, eosinophilic (hyaline) material.



CAUSE

Usually due to inadequate blood supply leading to ischemia and gradual degeneration.



GROSS FEATURES

Tumor appears firm, whorled and well circumscribed. Cut surface is white, smooth and shiny (homogeneous and translucent).



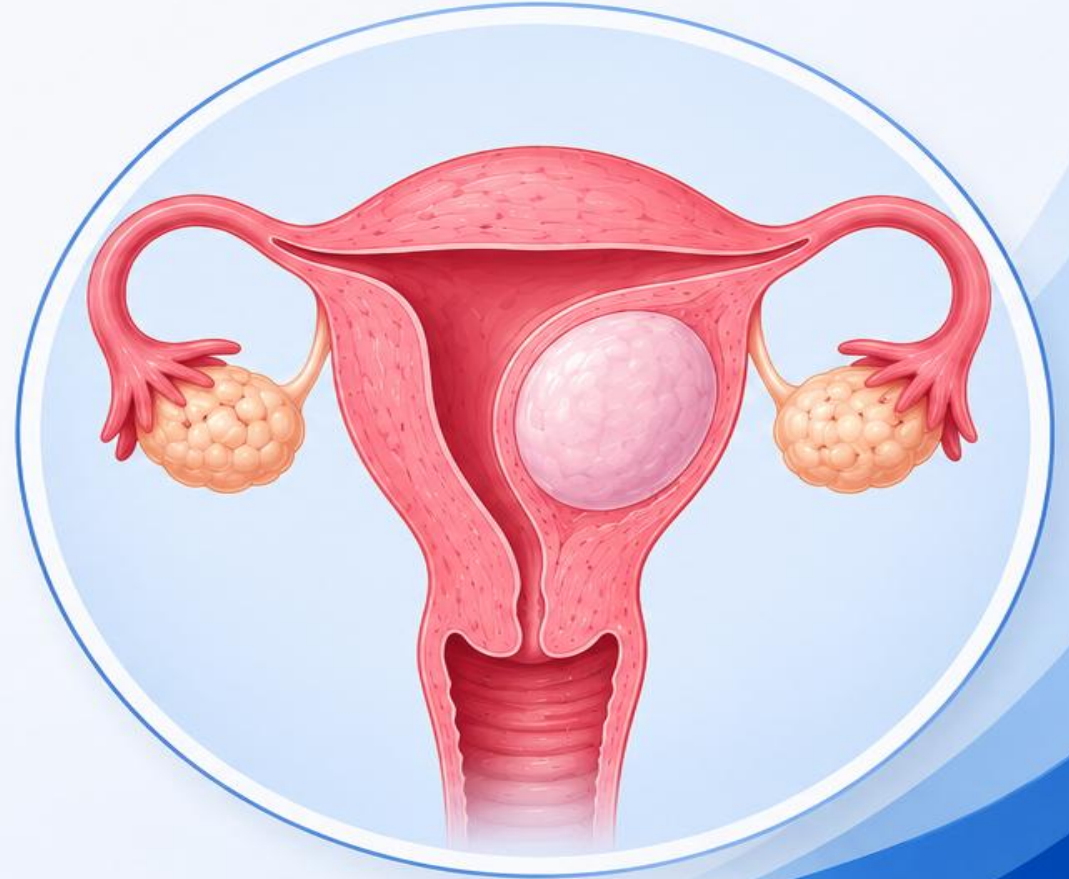
MICROSCOPIC FEATURES

Smooth muscle cells are replaced by homogeneous, acellular, eosinophilic (hyaline) material with loss of nuclei and normal cellular details.



CLINICAL SIGNIFICANCE

Usually asymptomatic and found incidentally. Large fibroids may cause pressure symptoms.



RED DEGENERATION



DEFINITION

Red degeneration is a form of hemorrhagic infarction seen in uterine leiomyoma.



CAUSE

Outstripping of blood supply to the fibroid, often during pregnancy or in rapid tumor growth.



GROSS FEATURES

Tumor becomes soft, boggy and dark red. Cut surface shows reddish, fleshy areas.



MICROSCOPIC FEATURES

Hemorrhage with necrosis and presence of fibrinous exudate.

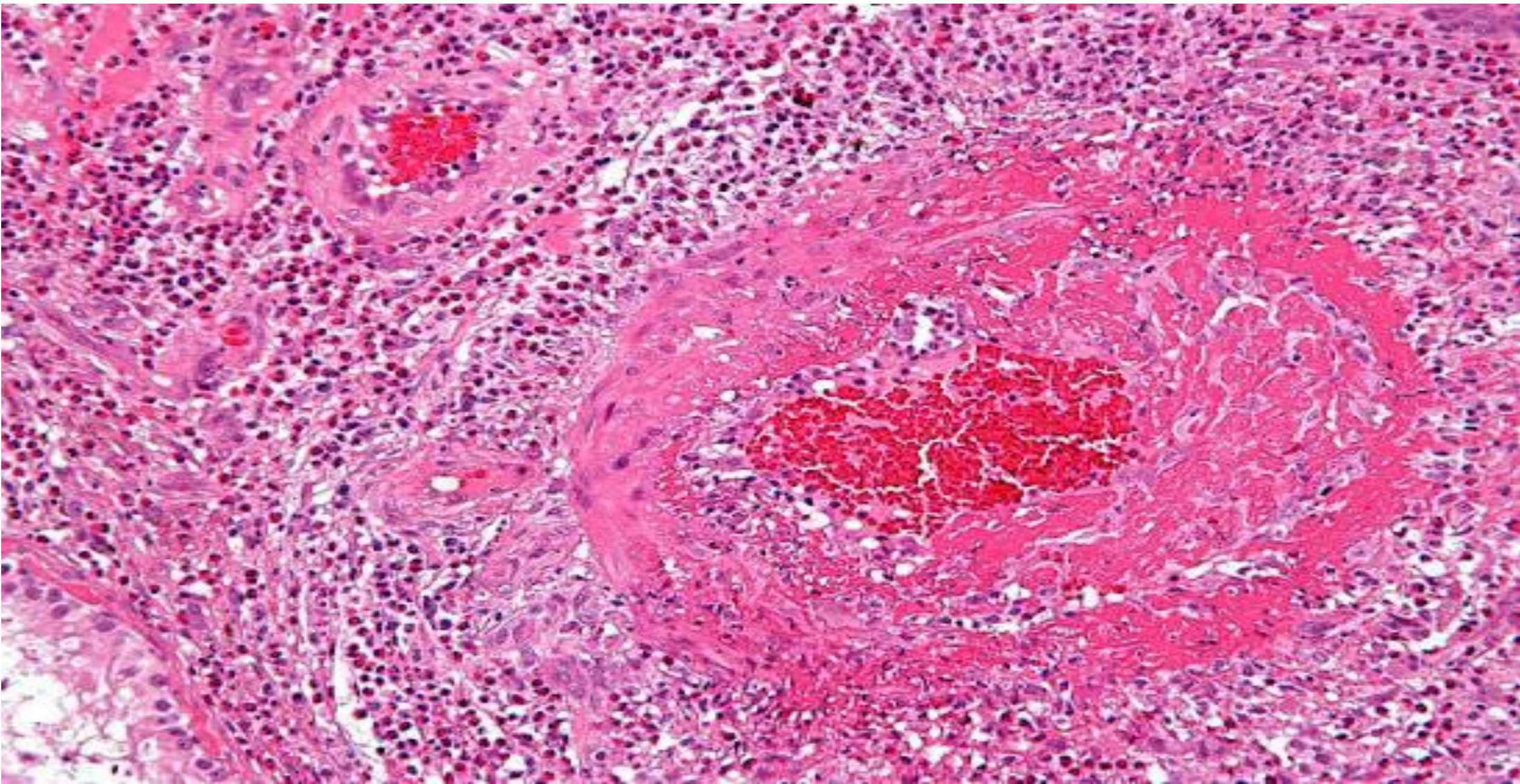


CLINICAL SIGNIFICANCE

May cause acute abdominal pain and tenderness, often requiring symptomatic treatment.

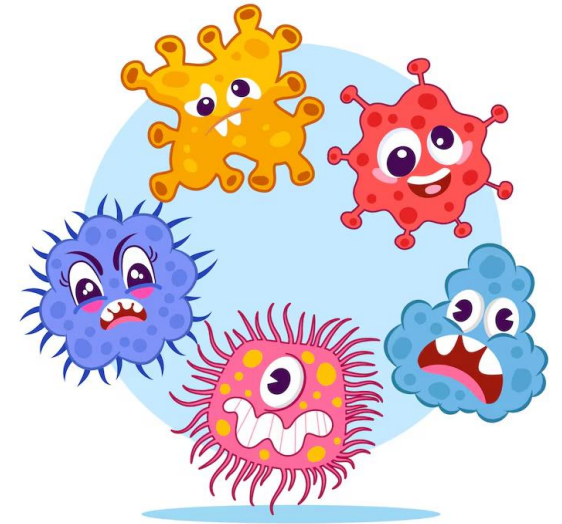


*Red degeneration is a painful change, but it is **benign** and self-limiting in most cases.*



. Infections:

- Subserous fibroids can get infected from
- appendicitis
- diverticulitis
- pyosalpinges.



- **Submural** fibroids may get infected after **abortion** or during the postpartum period.
- **Submucosal** fibroids can get infected after ulceration.

. Hematological complications:

- Menorrhagia causes heavy bleeding and anemia.
- Fibroids can raise erythropoietin, leading to polycythemia.



Leiomyoma Variants

Associated with Degenerative Changes



1 Red Degeneration



2 Apoplectic Leiomyoma



3 Hydropic Degeneration



4 Myxoid Leiomyoma



5 Leiomyoma with Lymphoid Infiltration



6 Cellular Leiomyoma



7 Pleomorphic Leiomyoma



8 Mitotically Active Leiomyoma



9 Granular Cell Change



10 Leiomyolipoma



11 Palisaded Leiomyoma



12 Epithelioid Leiomyoma



13 Cotyledonoid Dissecting Leiomyoma



14 Parasitic Leiomyoma



15 Leiomyoma with Skeletal Muscle Differentiation



16 Angioleiomyoma



17 Diffuse Leiomyoma



18 Intravenous Leiomyomatosis



19 Benign Metastasizing Leiomyoma



Key Take Home

✓ Most variants are benign.

Red degeneration is classically associated with pregnancy.

Histopathology is essential for diagnosis.



Understanding the variants helps in accurate diagnosis and appropriate management.

A conceptual image featuring a small, articulated wooden mannequin on the left, leaning forward and pushing a large, grey, textured rock on the right. The rock is inscribed with the word 'COMPLICATIONS' in bold, black, sans-serif capital letters. The background is a smooth, light blue-grey gradient. A faint, semi-transparent watermark 'dreamstime' is visible across the middle of the image.

COMPLICATIONS

Complications in pregnancy

- Two-thirds of women with fibroids and unexplained infertility conceive after myomectomy.
- Red degeneration occurs in the 2nd or 3rd trimester due to rapid fibroid growth and loss of blood supply.
- Causes pain, tenderness, and may trigger preterm labor.
- After the acute phase, pregnancy usually continues to term.



Complications in pregnancy

During Labour

- Weak uterine contractions
- Abnormal baby position
- Birth canal blockage
- Cervical or isthmus fibroids require C-section
- Postpartum hemorrhage (PPH)

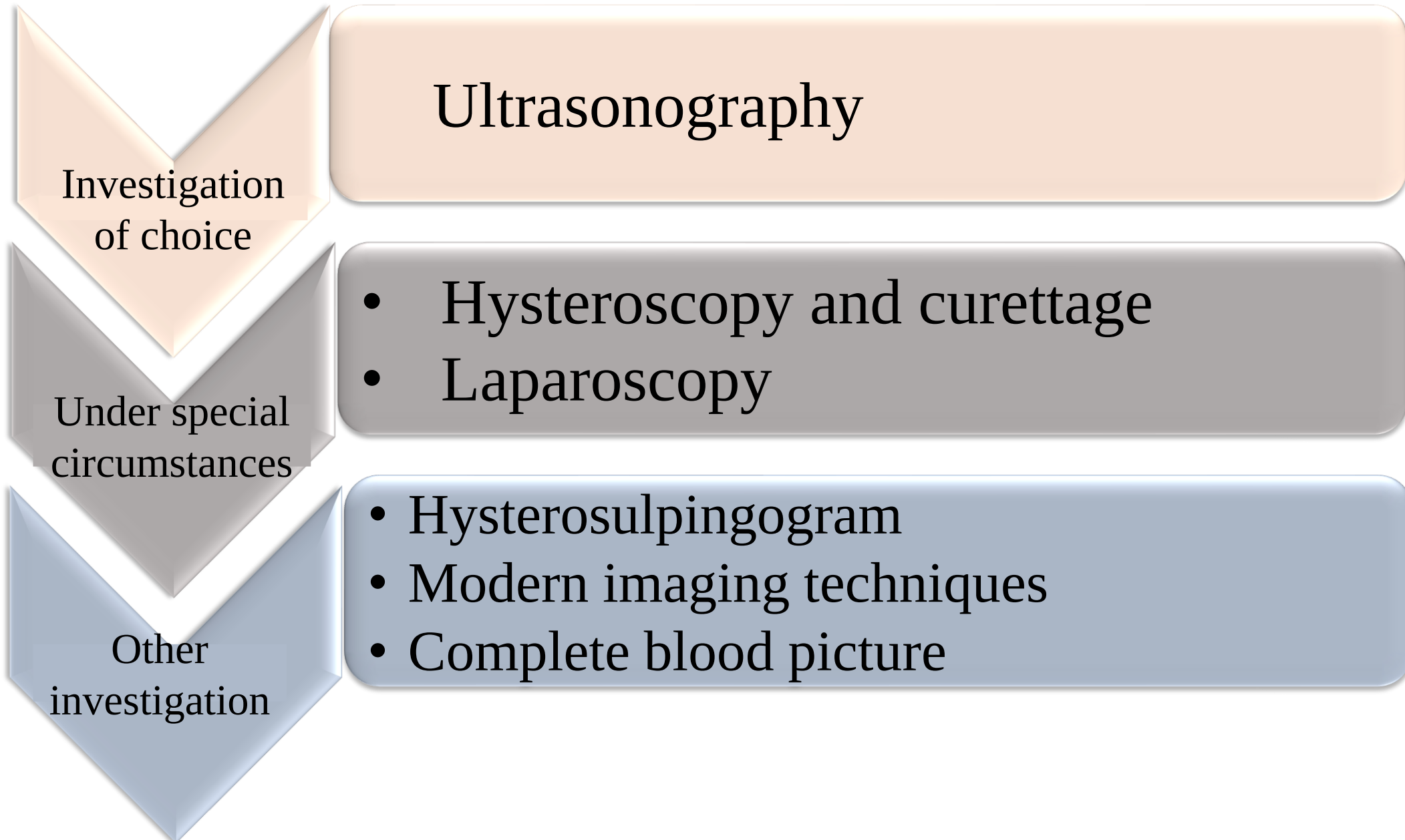


COMPLICATIONS IN NONPREGNANT WOMEN

- Heavy bleeding with anemia is most common.
- Large parasitic myomas can rarely block urine or bowel.
- Malignant change is rare.
- Surgery risks include ureter injury or ligation.
- Postmenopausal women on hormones need pelvic exams or ultrasounds every 6 months.

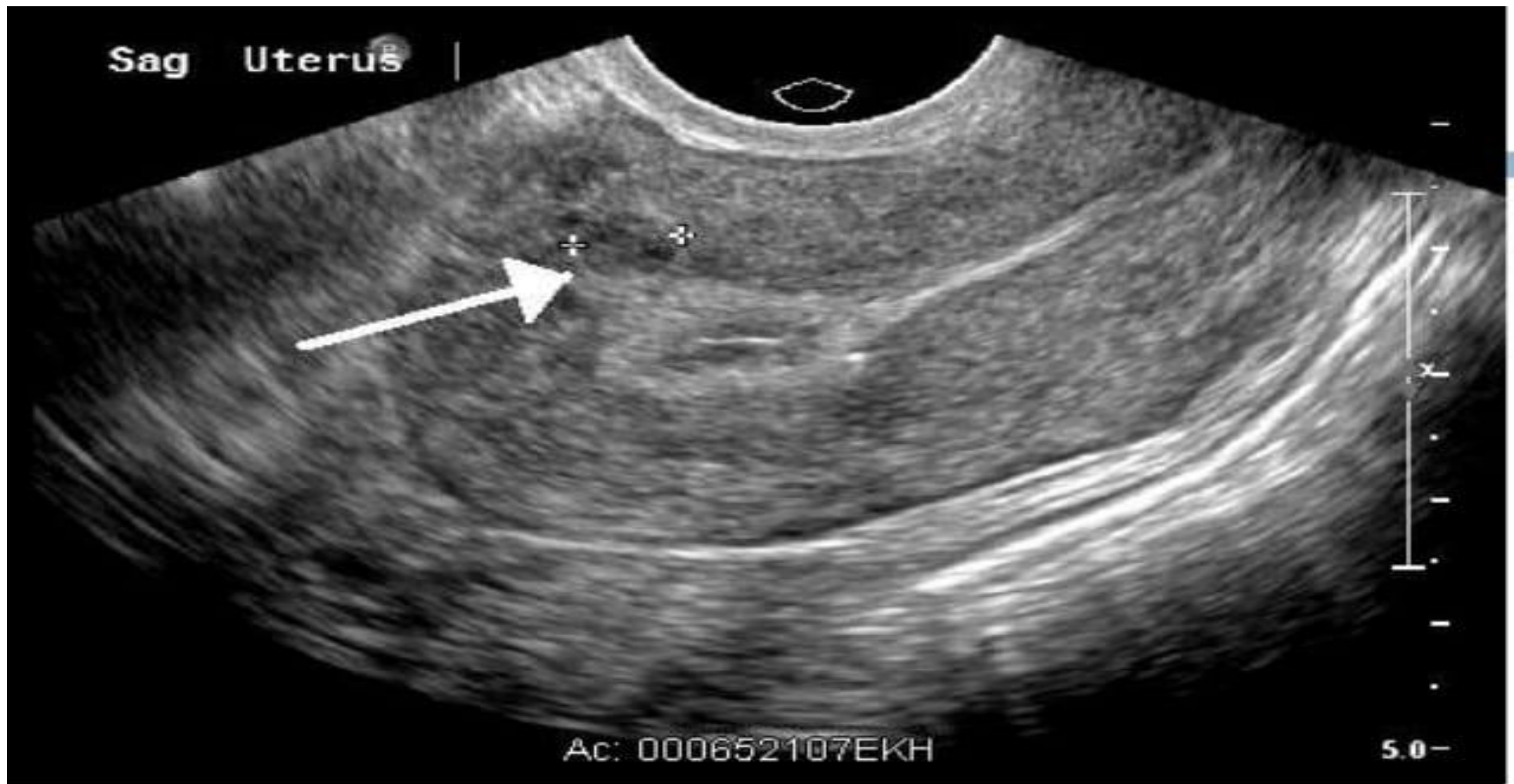


Investigations



Ultrasonography

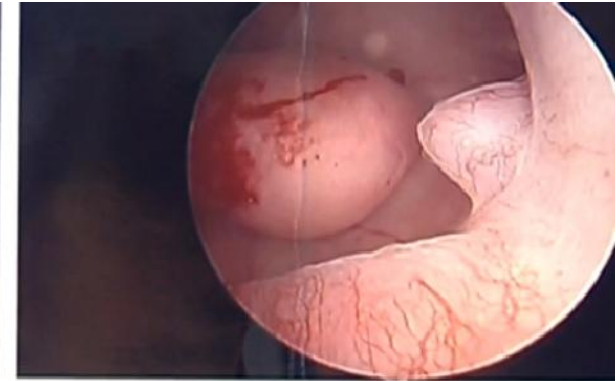
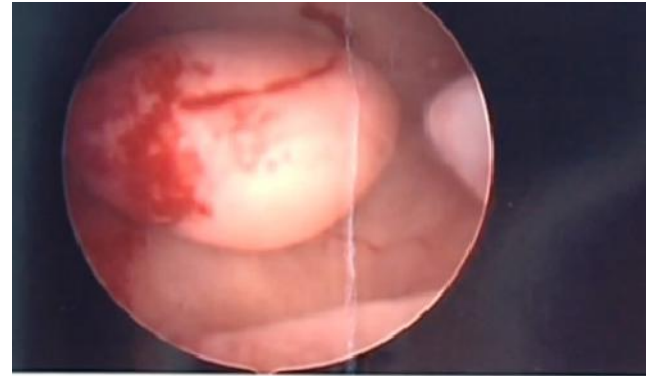
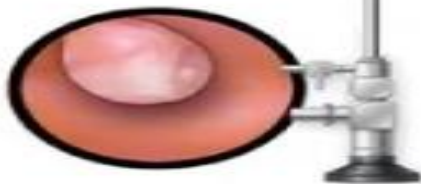
- **Investigation of choice-**
- **Typical fibroid appearance:**mild to moderate echogenic mass in the uterine wall that causes nodular distortion of uterine outline.
- **Small intramural or submucous fibroid:**recognized by distortion of the normally liner central endometrial echoes.
- **Fibriods with hyaline degeneration:**anechoic area within fibroid.
- **Fibroids with cystic degeneration:**will give snow appearance.



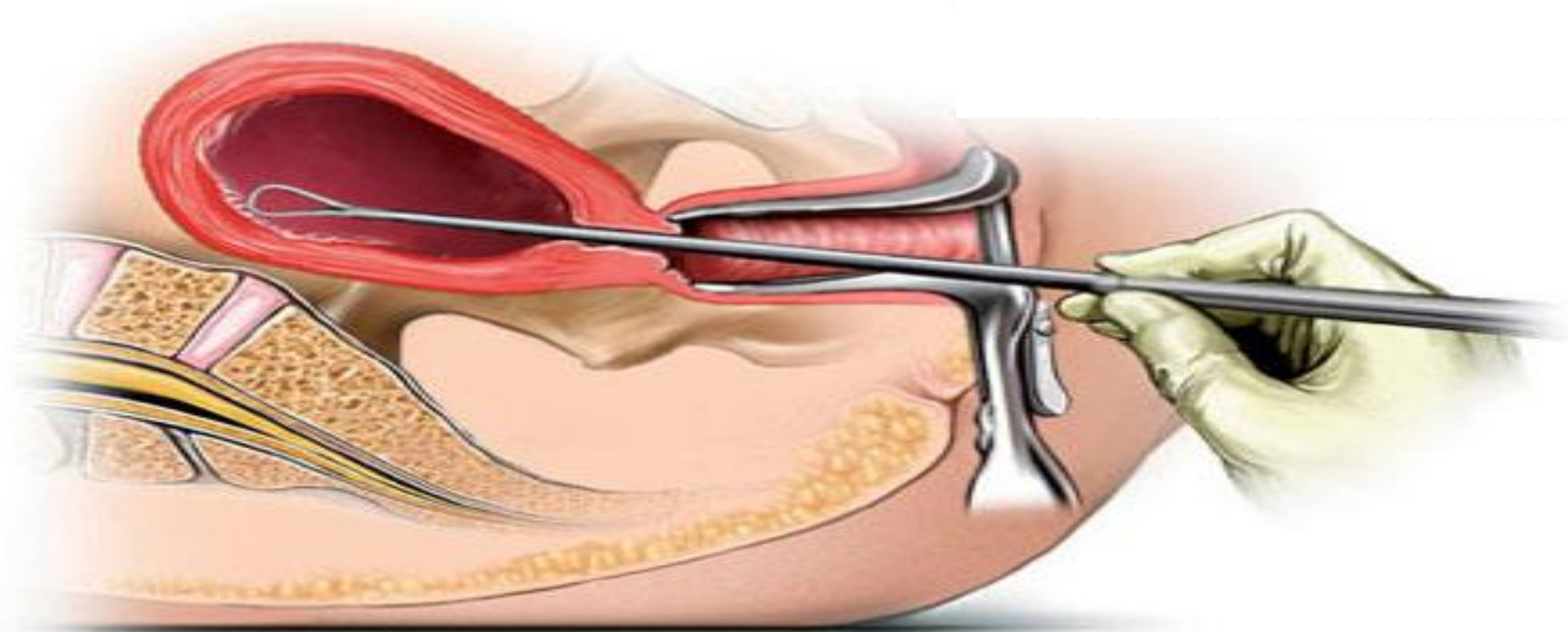
Uterine Fibroid

Hysteroscopy & Curettage

- Hysteroscopy provides a direct view of uterine cavity, & is indicated during
Abnormal uterine bleeding
Small submucous fibroids missed during ultrasound.



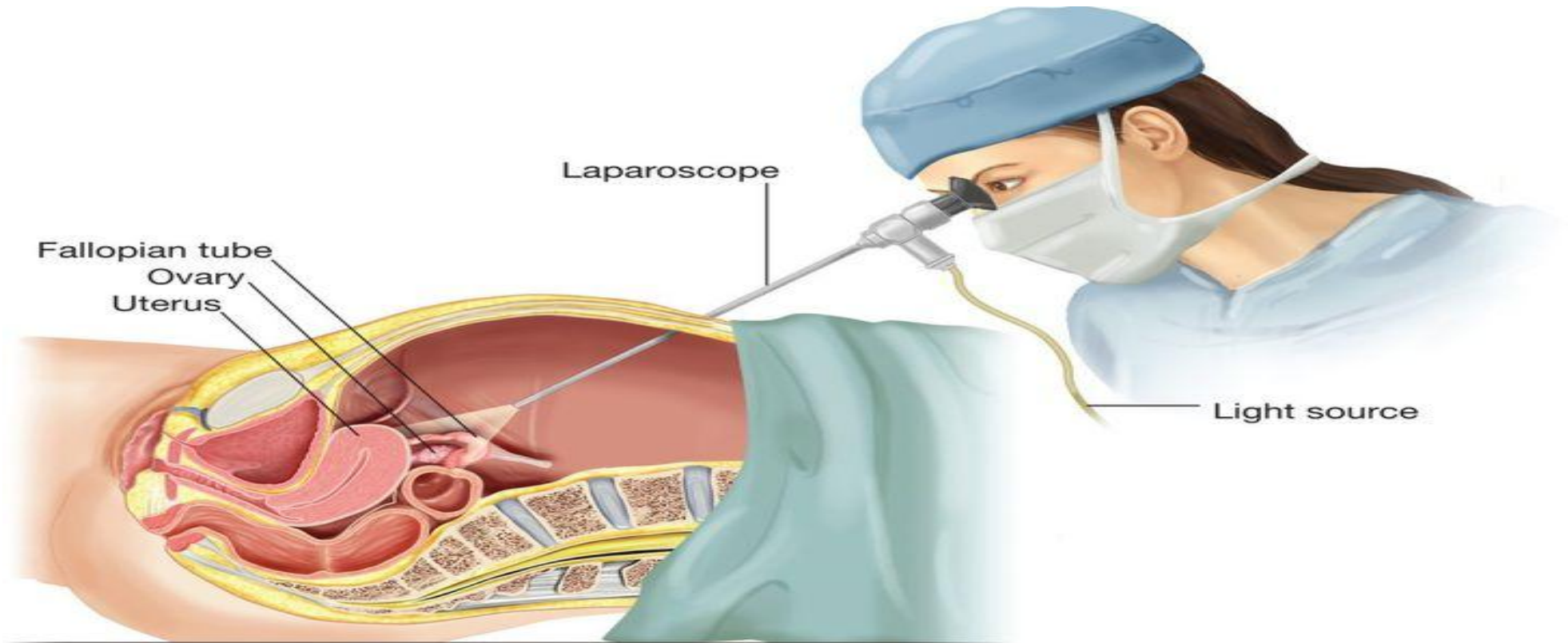
Curettage may help to diagnose a co existing endometrial pathology which may be the actual cause of menorrhagia



Laparoscopy

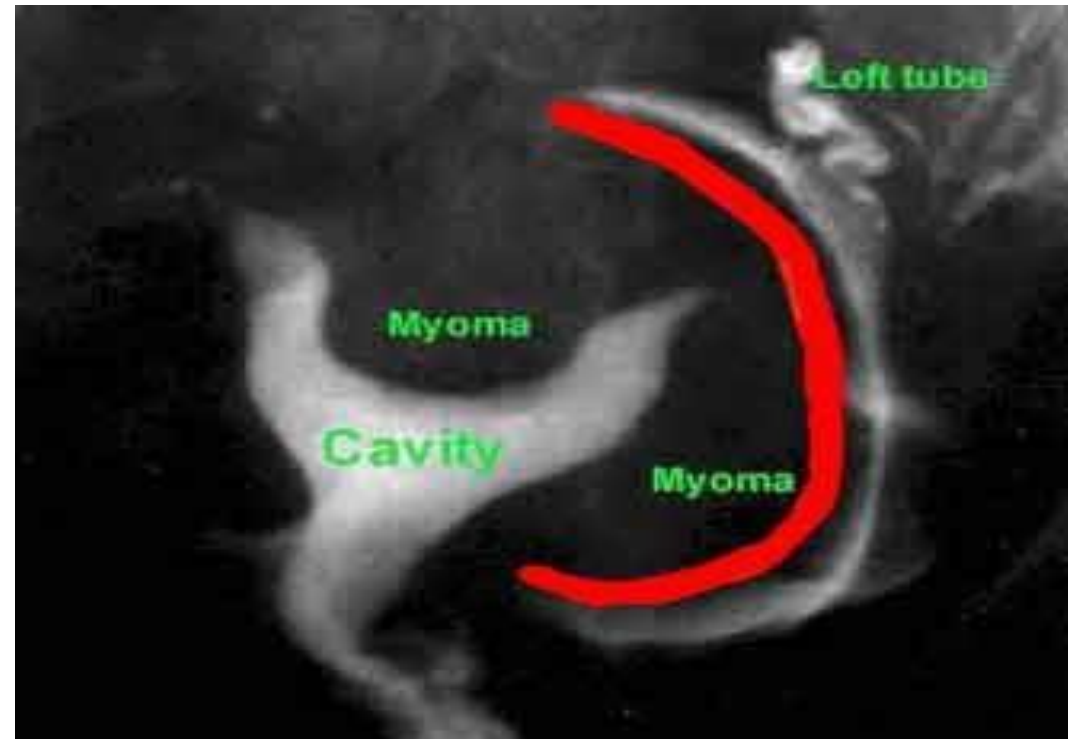
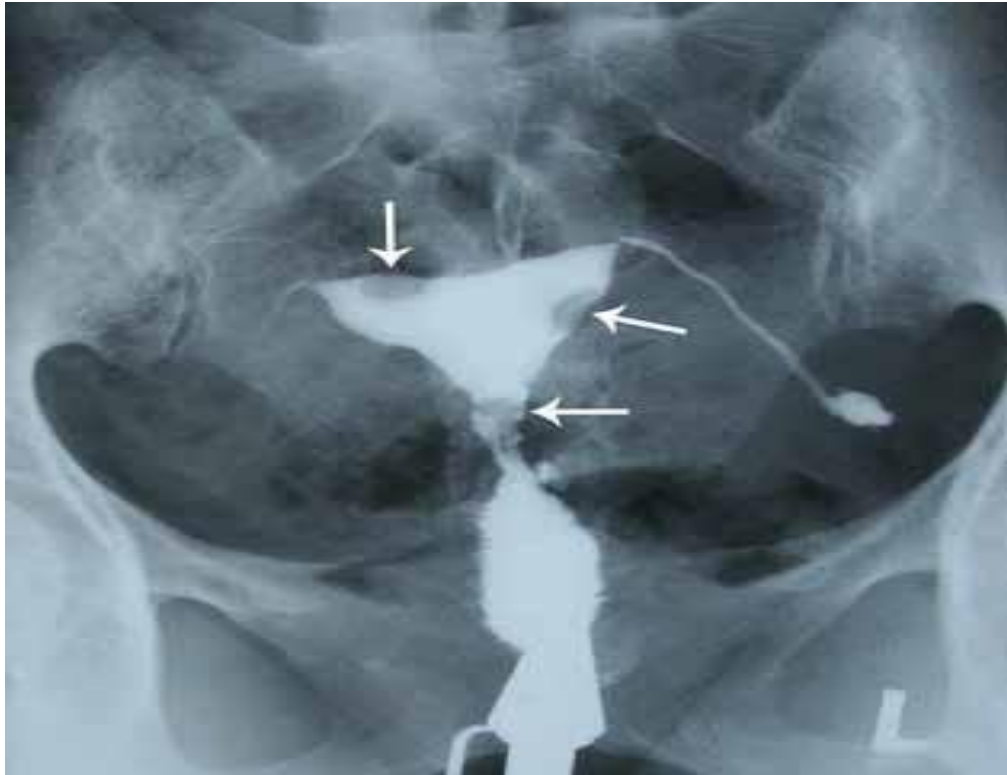
- **Indication**

When the mass cannot be differentiated on the ultrasound
fibroid associated with infertility or pelvic pain



Other Investigations

- **Hysterosalpingogram:** Carried out as a part of infertility investigation and can pick small submucous fibroids.



HSG with blocked tubes

1. Modern Imaging

Technique: CT and MRI better show pelvic masses but are costly for routine use.

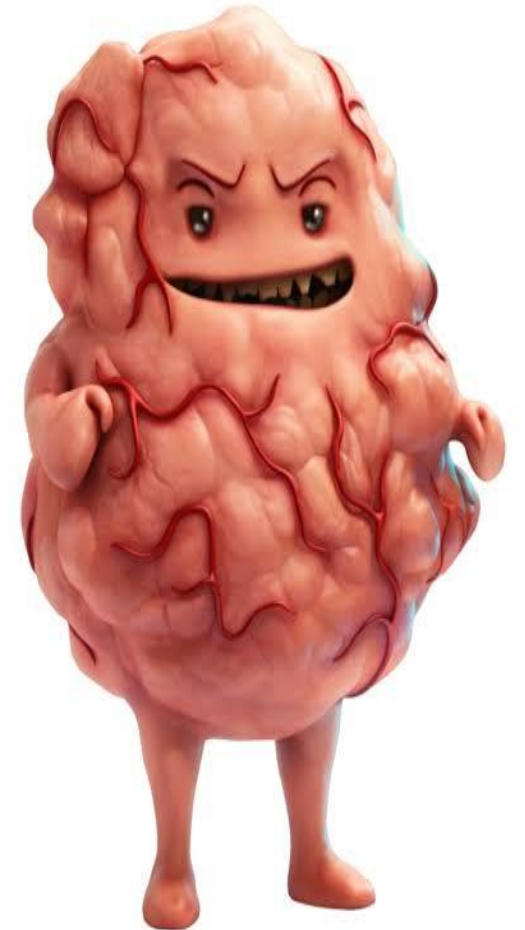
2. Blood Test: Severe menorrhagia lowers hemoglobin; polycythemia may also be detected.



CT scan shows a large uterine fibroids.

DIFFERENTIAL DIAGNOSIS

- Usually straight forward
- Rule out pregnancy
- Rule out pelvic masses: ovarian cancer, tubo - ovarian abscess, endometriosis, adhesions
- Rule out uterine enlargement causes: adenomyosis, muscle thickening, birth defects, endometrial cancer.



DIFFERENTIAL DIAGNOSIS

Exclude other causes of abnormal bleeding:

- Endometrial hyperplasia
- Endometrial or tubal cancer
- Uterine sarcoma
- Ovarian cancer
- Polyps
- Adenomyosis
- Dysfunctional uterine bleeding (DUB)
- Endometriosis
- External estrogens
- Endometrial biopsy or D&C is crucial to rule out endometrial cancer.



Treatment

Conservative Treatment

Medical Treatment

Surgical Treatment

Conservative Treatment

- Asymptomatic fibroids under 12 weeks pregnancy size in 42-year-olds are usually left alone, expecting shrinkage after menopause.
- Fibroids larger than 12 weeks size rarely need removal since cancer risk is under 0.1%.
- Regular follow-up until menopause is advised.
- Removal is only for very large or rapidly growing fibroids due to concern about their nature.

Medical Treatment

- Ideal drug fully shrinks fibroids
- GnRH analogues show best results
- Given as monthly injection or daily nasal spray for 3 months
- Improves 80% of heavy bleeding cases
- Reduces fibroid size by 50%

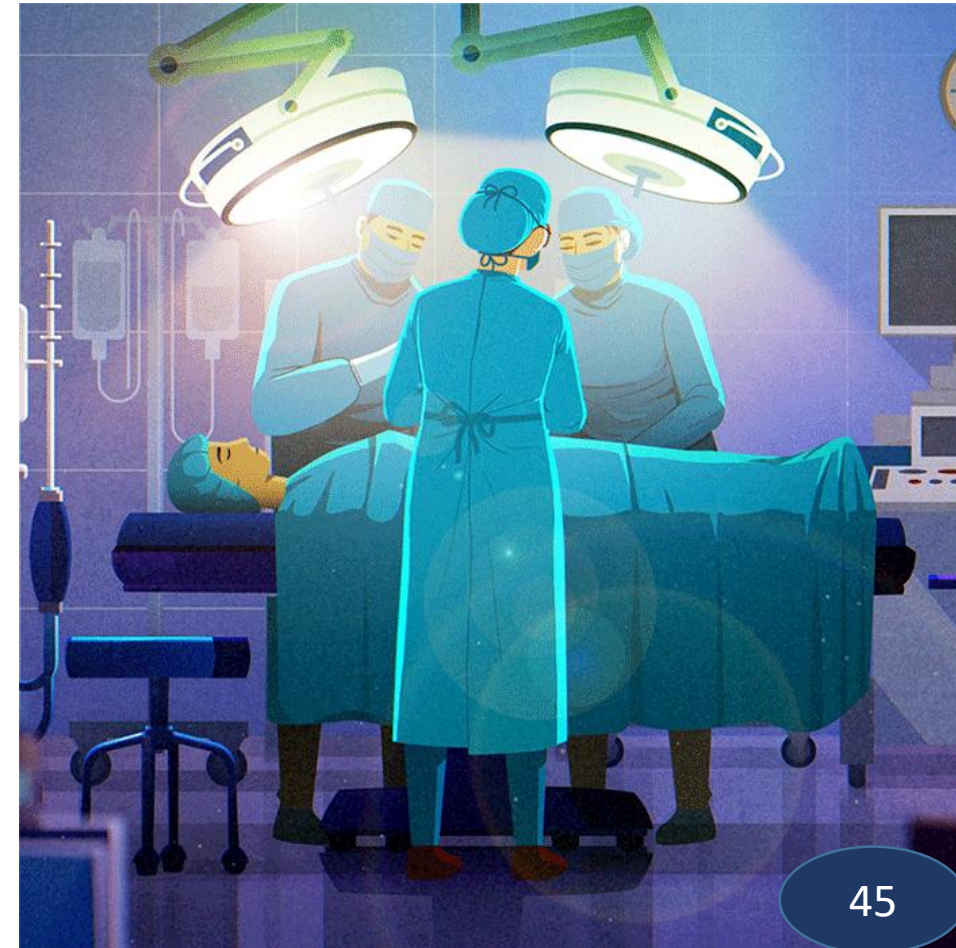
Downsides: costly, effects stop after treatment, cause menopause-like symptoms (hot flushes, night sweats, mood changes)

Medical Treatment cont...

- Used only to shrink fibroids before myomectomy or hysterectomy.
- Long-term use (6+ months) is for patients unfit for surgery or nearing menopause.
- Other drugs like Danazol and Gestrinone can also reduce fibroid size somewhat.

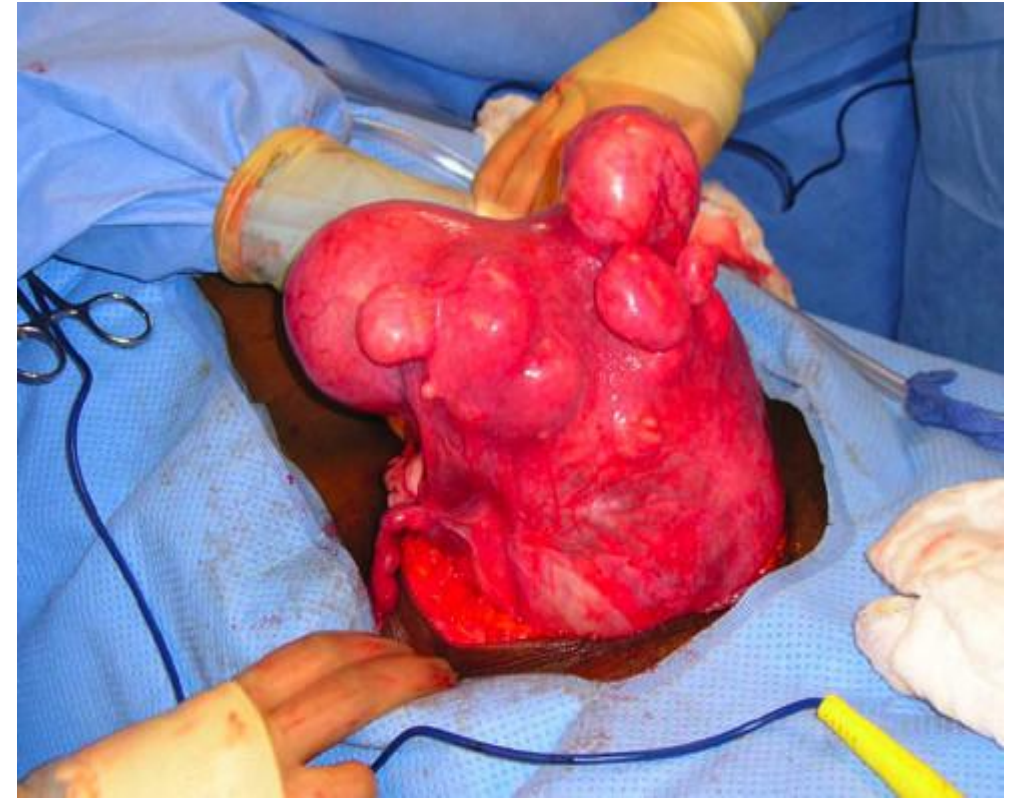
Surgical treatment

- **Myomectomy**: removes fibroids, keeps uterus.
 - **Hysterectomy**: removes uterus.
-
- Myomectomy is preferred for:
 1. Symptomatic fibroids in young patients.
 2. Infertile patients with fibroids only.
 3. Patients wanting more children.
 4. Recurrent abortion likely due to fibroids.
 5. Patients wanting to keep their uterus.



Routes of Myomectomy:

- **Abdominal:** Most common, done through the abdomen.
- **Vaginal:** For pedunculated submucosal fibroids through cervix; removed by tying and cauterizing the stalk.
- **Endoscopic:** Minimally invasive method.

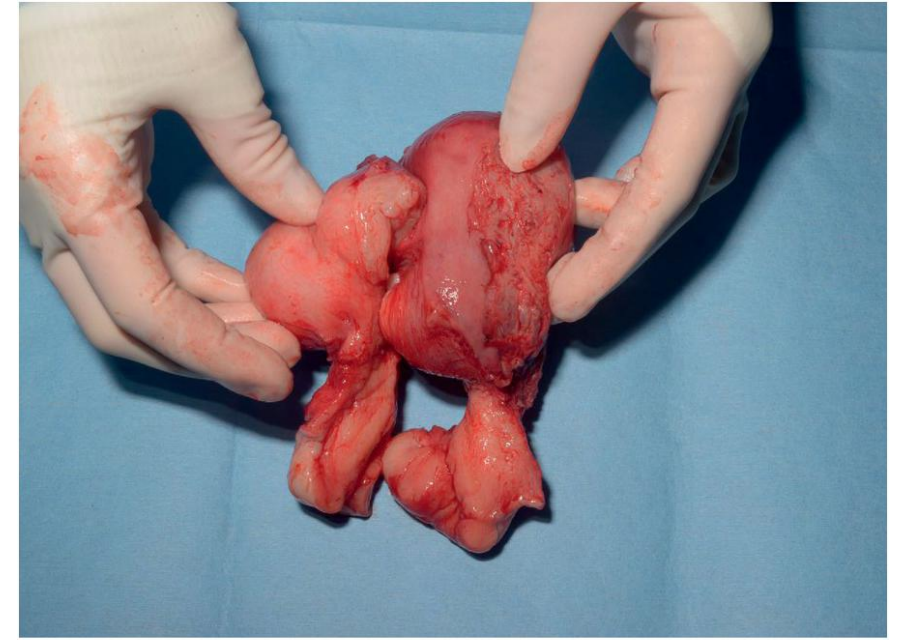


Disadvantages of Myomectomy:

- **Hemorrhage:** If hemoglobin <11 gm/dl then severe bleeding may require hysterectomy.
- **Early complications:** Uterine wound bleeding can cause fever and paralytic ileus, delaying recovery.
- **Late complications:** Adhesions may cause infertility and bowel obstruction.
- **Recurrence risk: 15%.**

Hysterectomy

- Removal of uterus
- Mostly through abdomen although small fibroids can be removed through vaginal hysterectomy
- Advantages:
 - a) Low post operative morbidity
 - b) No risk of recurrence



Vaginal Hysterectomy with Fibroids

Its Preferred over myomectomy when

1. Patients above 40 years of age
2. Presence of multiple fibroids
3. Patients with complete family
4. Patients experiencing severe symptoms



SCENARIO



A 29-year-old pregnant woman at 20 weeks complains of severe abdominal pain. Ultrasound shows a large fibroid.

What is the most likely diagnosis?



Answer

Red degeneration (carneous degeneration) of fibroid.

Q. Why does it occur?

Due to venous thrombosis and hemorrhagic infarction of the fibroid, commonly during pregnancy.



A 44-year-old woman has persistent heavy menstrual bleeding despite tranexamic acid and hormonal therapy. She has completed her family. Ultrasound: Multiple fibroids, uterus equivalent to 18 weeks.

What is the Best treatment for it?



Answer

Total abdominal hysterectomy.

Why not myomectomy?

Answer

- Multiple fibroids
- Large uterus
- No desire for future fertility
- Higher risk of recurrence after myomectomy





Thank
You!



Let's continue to care,
support & empower every woman.

