



Supervised by: **Proffesor Dr. Azar Naimi**

**CASE STUDY**

Presented by: **Husain Jundi**

# Case History

- **48** years old female presenting with abnormal uterine bleeding (**AUB**).
- **Ultrasound (Sonography):** a solid cystic mass on right ovary with dimensions 10x7.5x4cm.
- **First received specimen was labeled as:** right ovarian mass frozen.

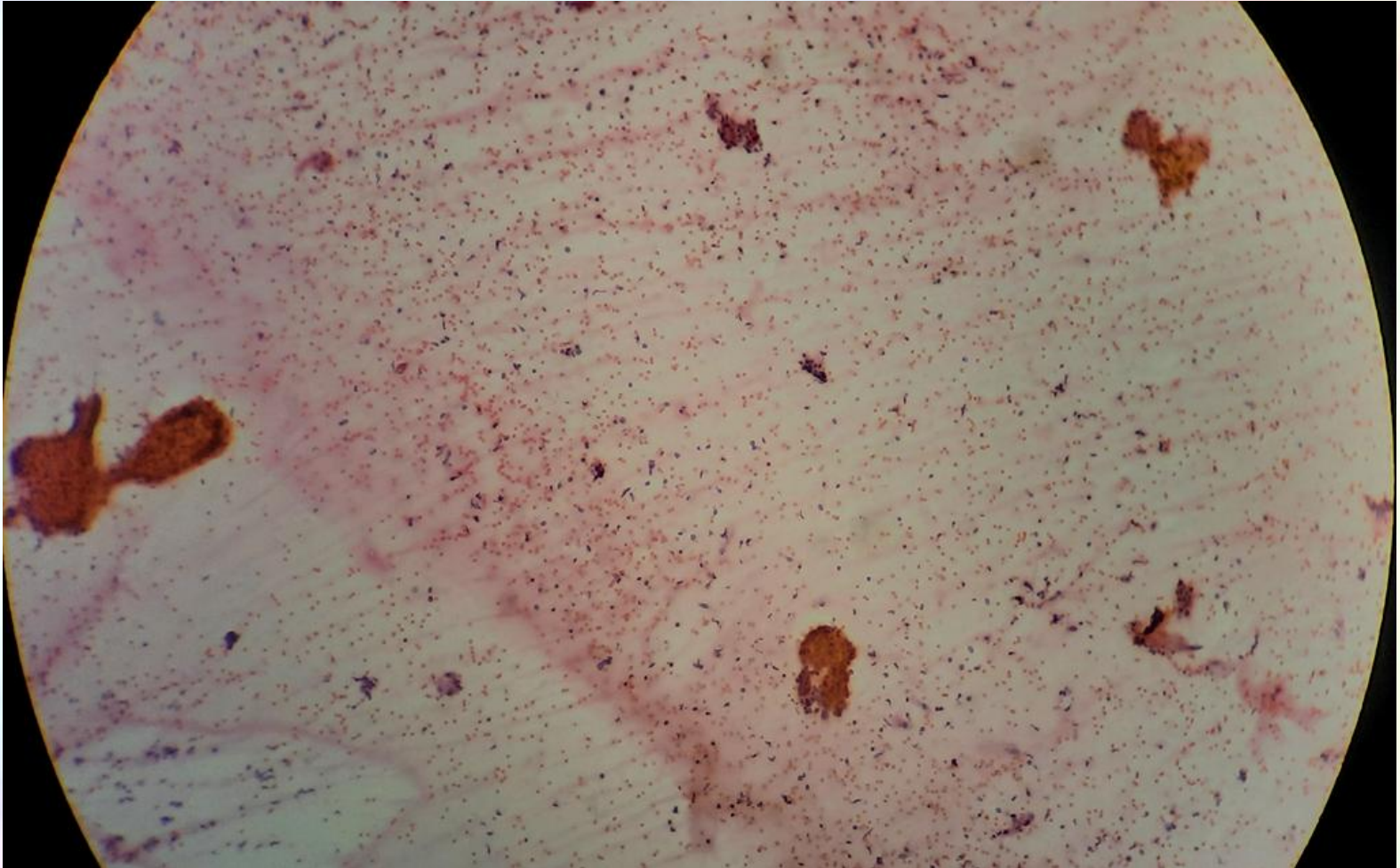


# Gross description of frozen specimen:

- One ovarian mass
- Multilobulated
- 11x8x5cm in dimensions
- In cut: white-creamy surface
- Homogenous
- Hard consistency



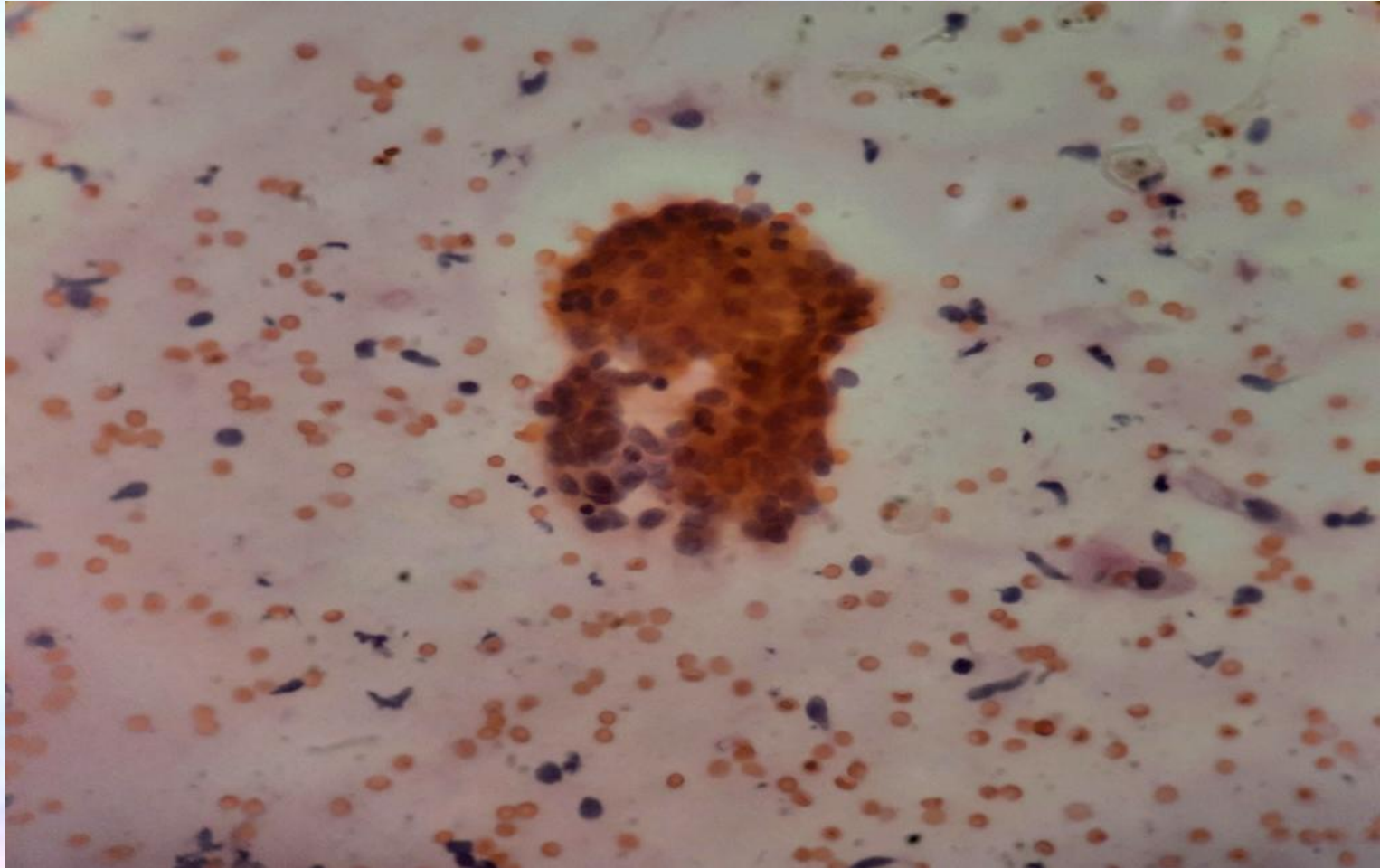
## Right ovary mass frozen:



Slide 1 (cytology): x4

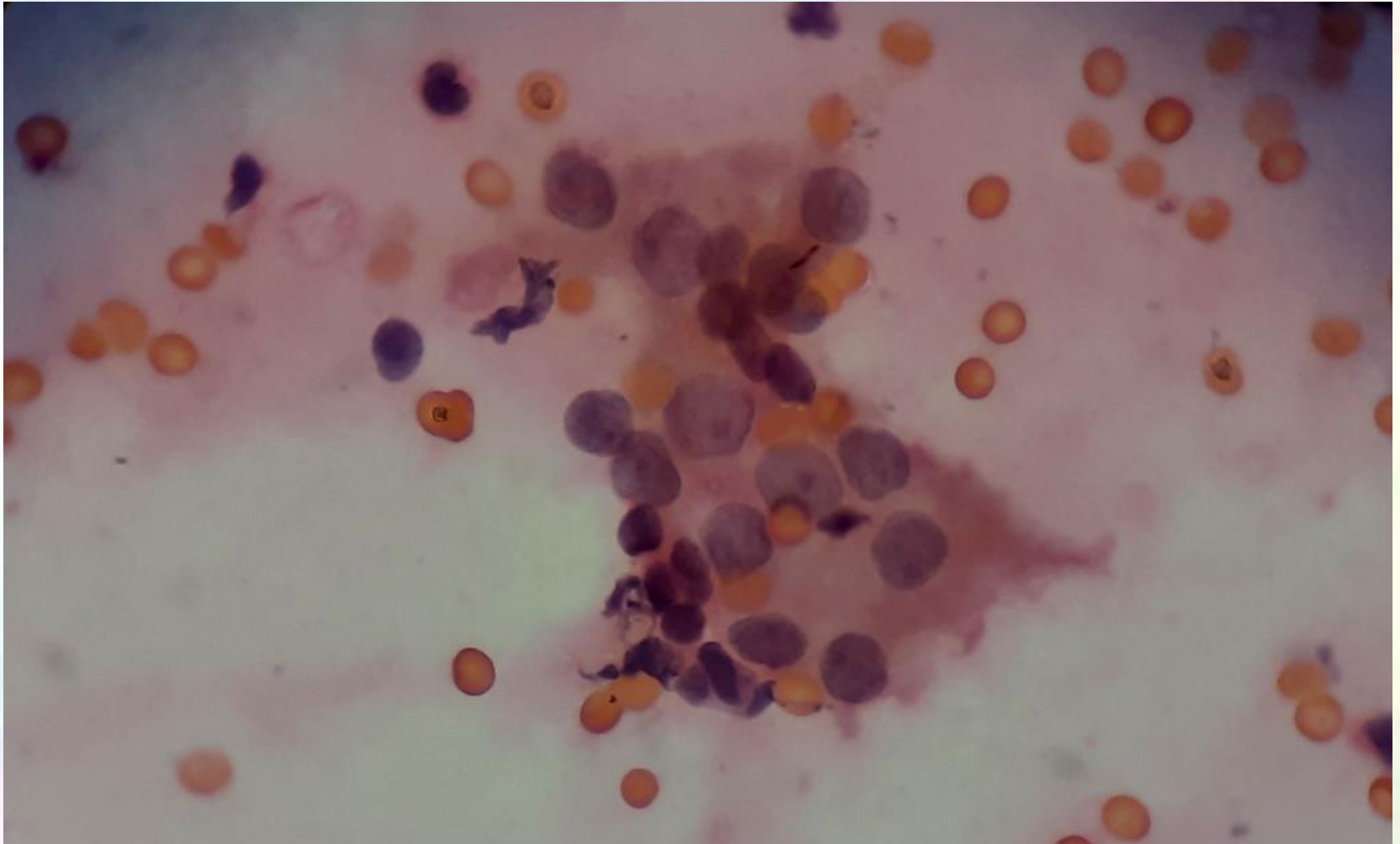


## Right ovary mass frozen:



Slide 1 (cytology): x20

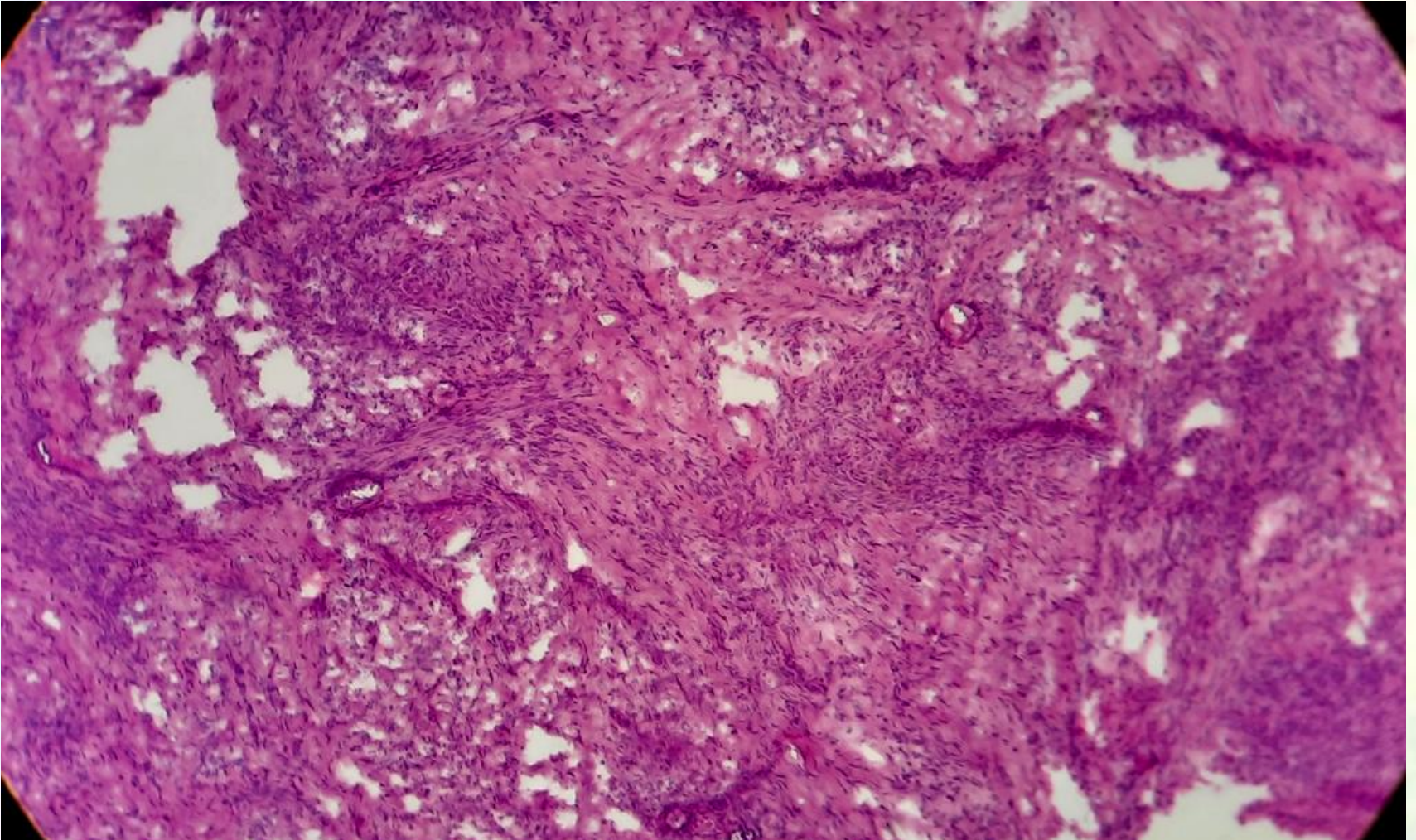
## Right ovary mass frozen:



Slide 1 (cytology): x100



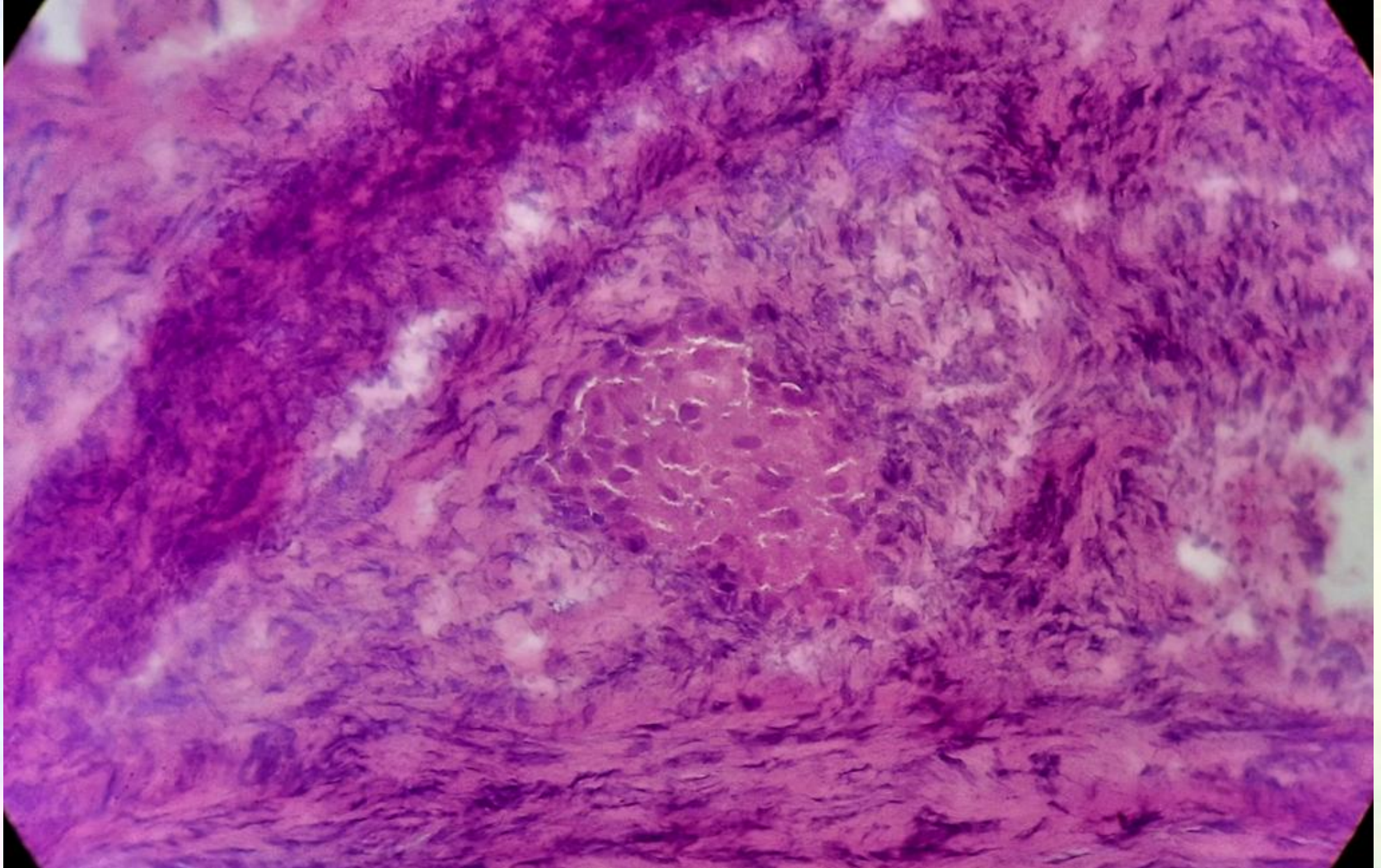
## Right ovary mass frozen:



Slide 2 : x20



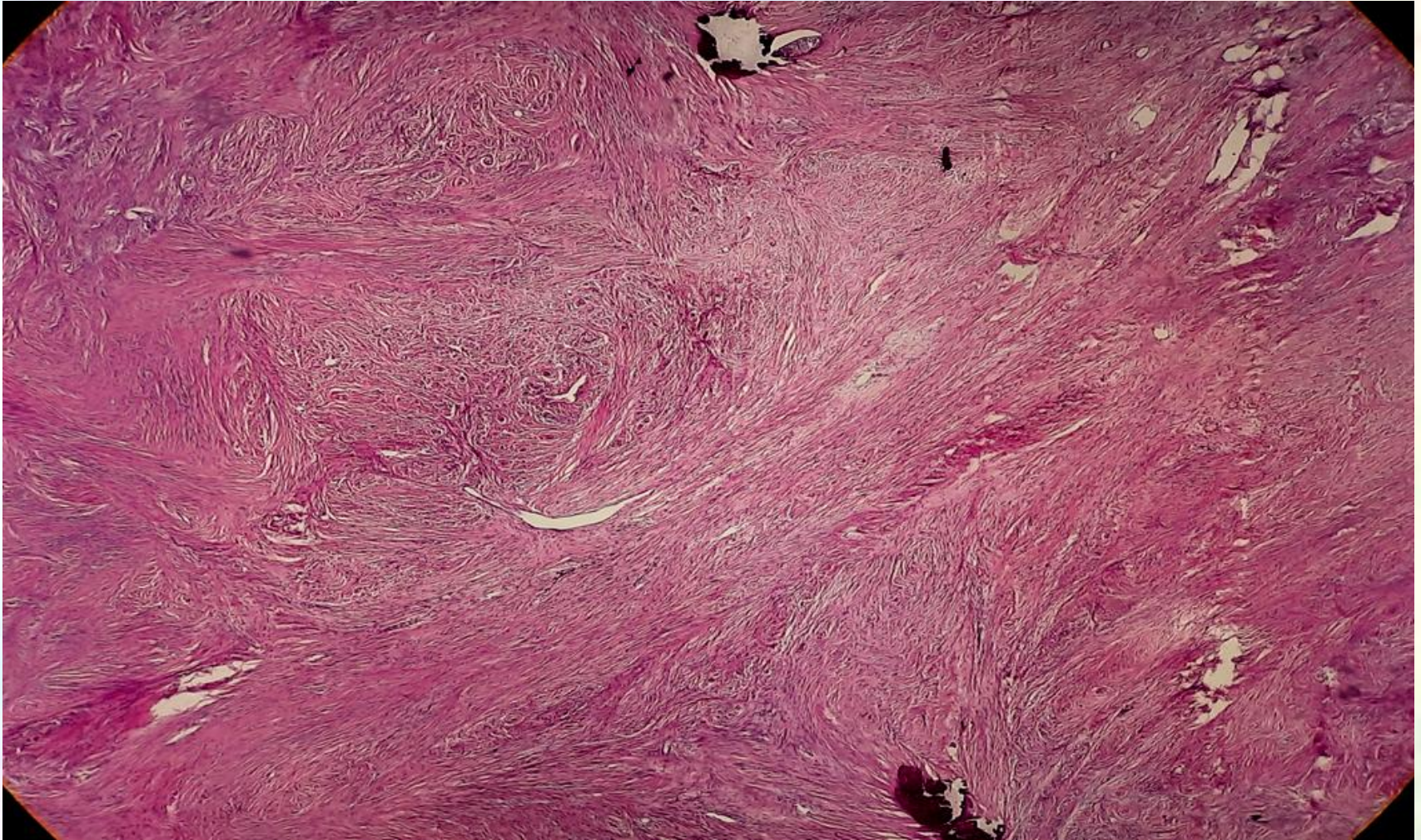
## Right ovary mass frozen:



Slide 2 : x40



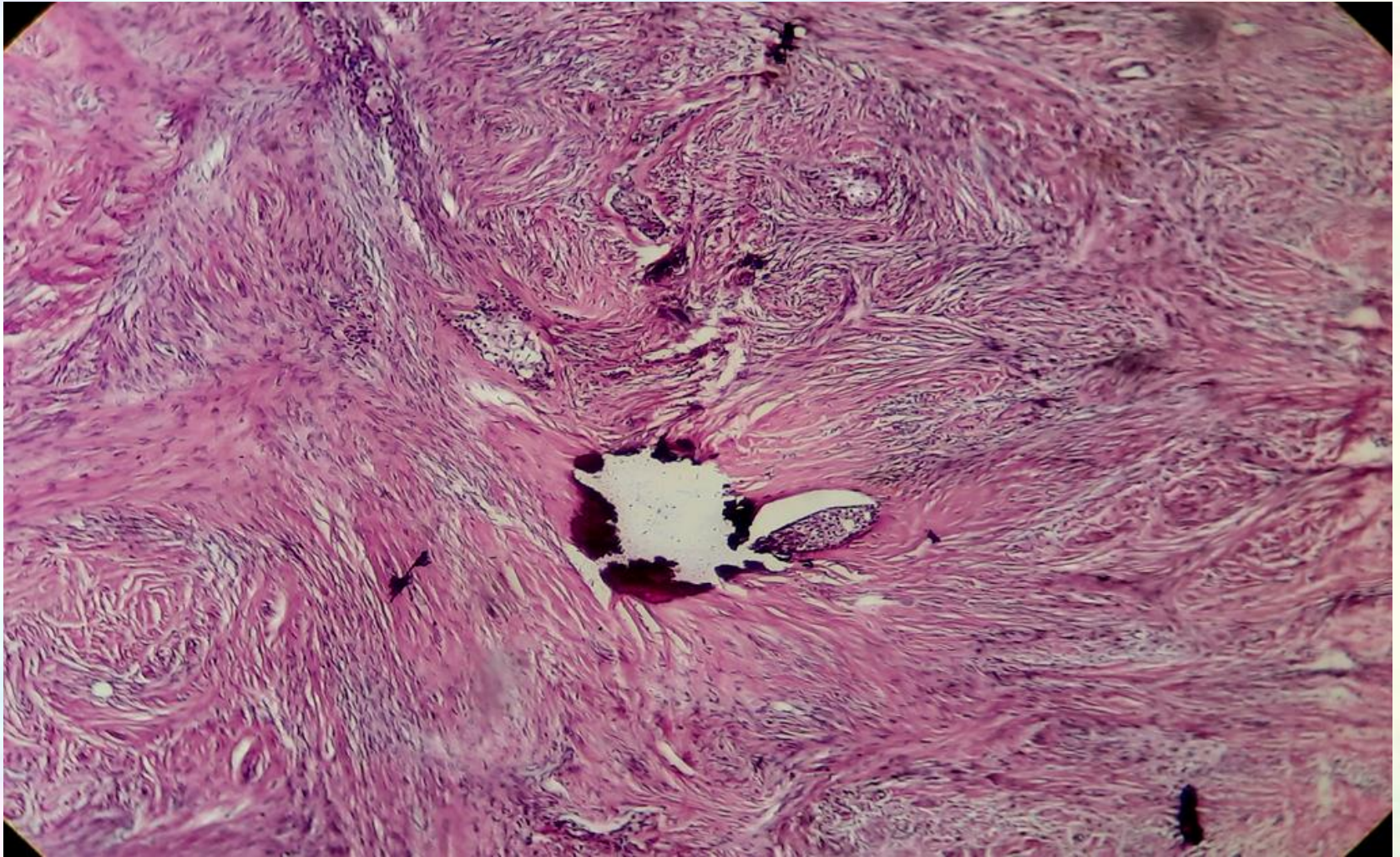
# Right ovary mass frozen (permanent):



Slide 3 : x4



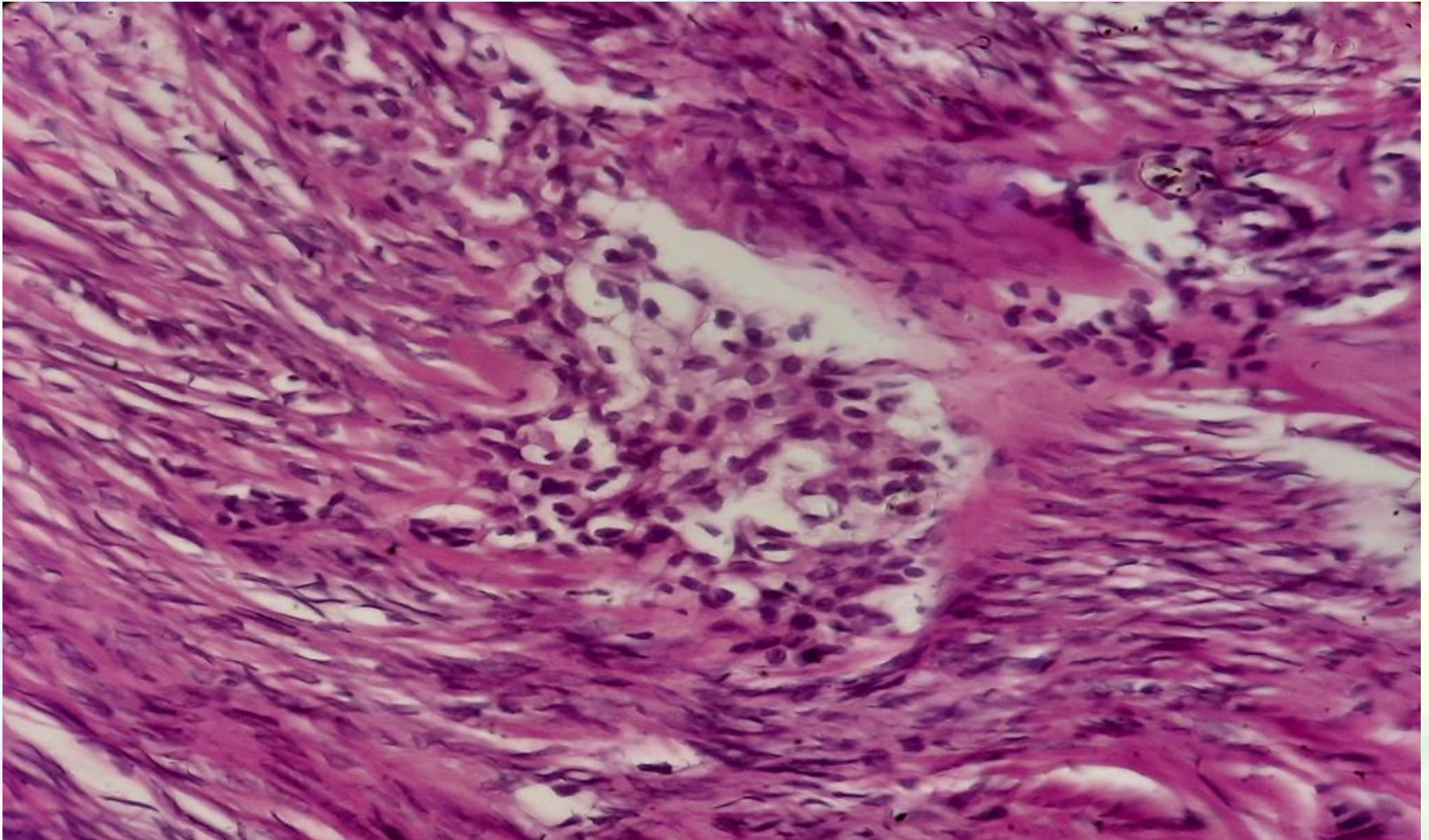
# Right ovary mass frozen (permanent):



Slide 3 : x20



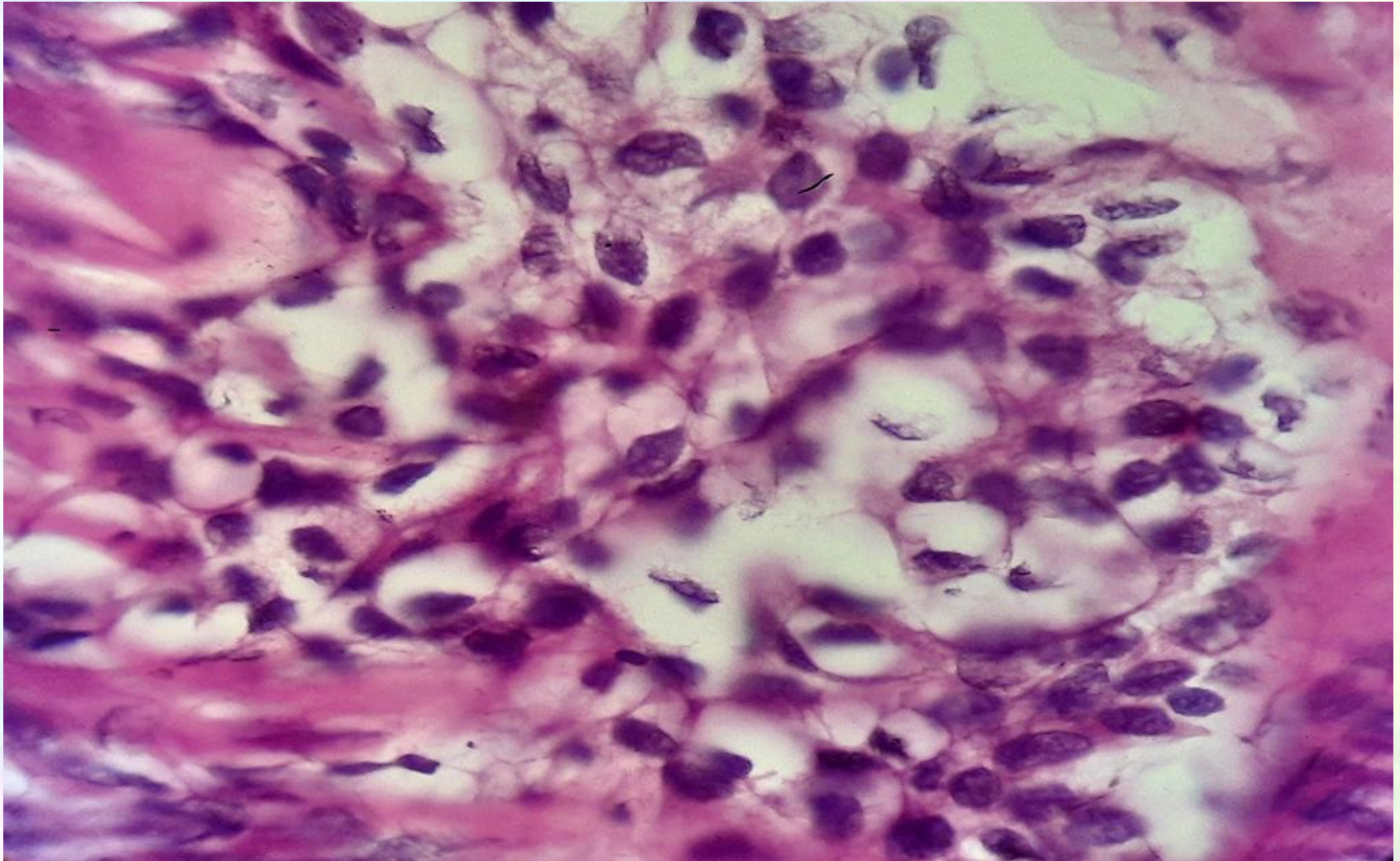
# Right ovary mass frozen (permanent):



Slide 3 : x40



# Right ovary mass frozen (permanent):



Slide 3 : x100



What are the differential diagnosis that come to your mind when you saw the previous pictures?



# ⌘ Differential Diagnosis ⌘

- Brenner Tumor
- Krukenberg Tumor
- Fibrothecoma
- Fibroma



# Hysterectomy and left salpingo-oophorectomy:

- **Uterus:**

- Length: 12cm
- Fundic diameter: 7cm
- Cervical diameter: 3cm
- Leiomyomata 1cm in greatest diameter
- Maximum endomyometrial thickness: 3.5cm

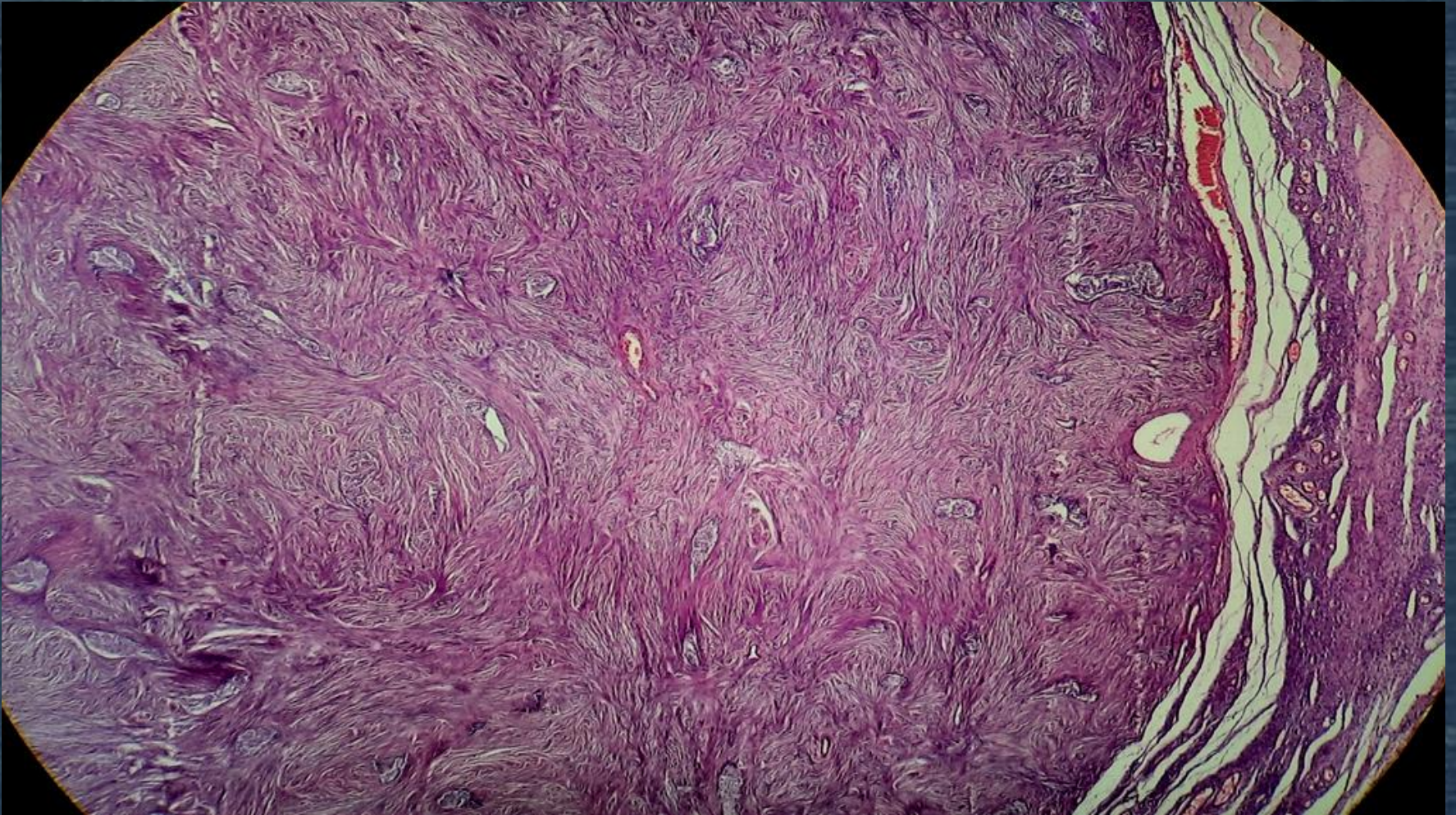
- **Left fallopian tube:**

- Length: 5cm
- Diameter: 0.7cm

- **Left ovary:**

- Lobulated
- Dimensions: 4.5x2.5x2.5 cm
- 2 hard brown-creamy nodules 1.5cm in greatest diameter

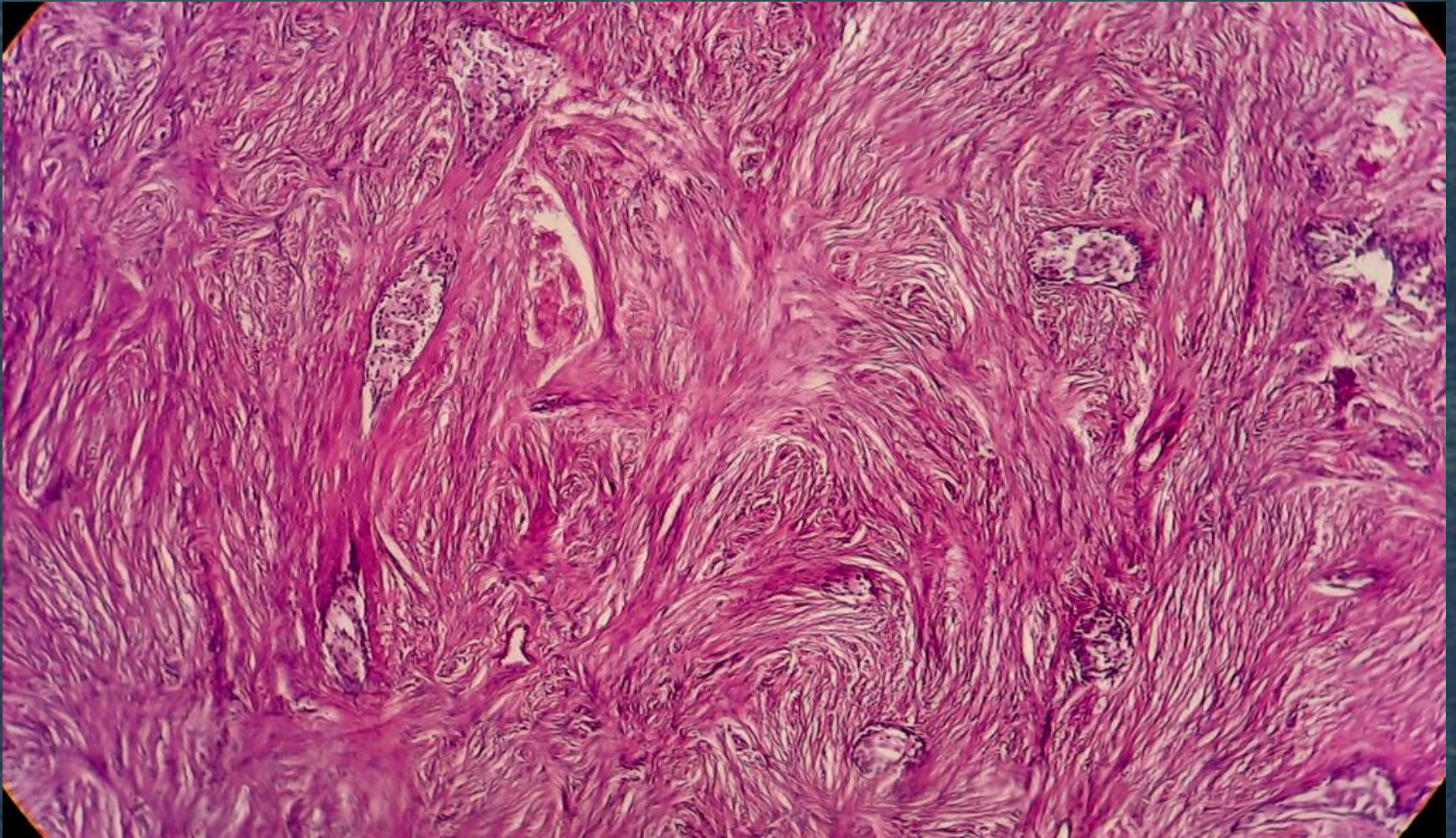
# Left ovary section:



Slide 4: x4



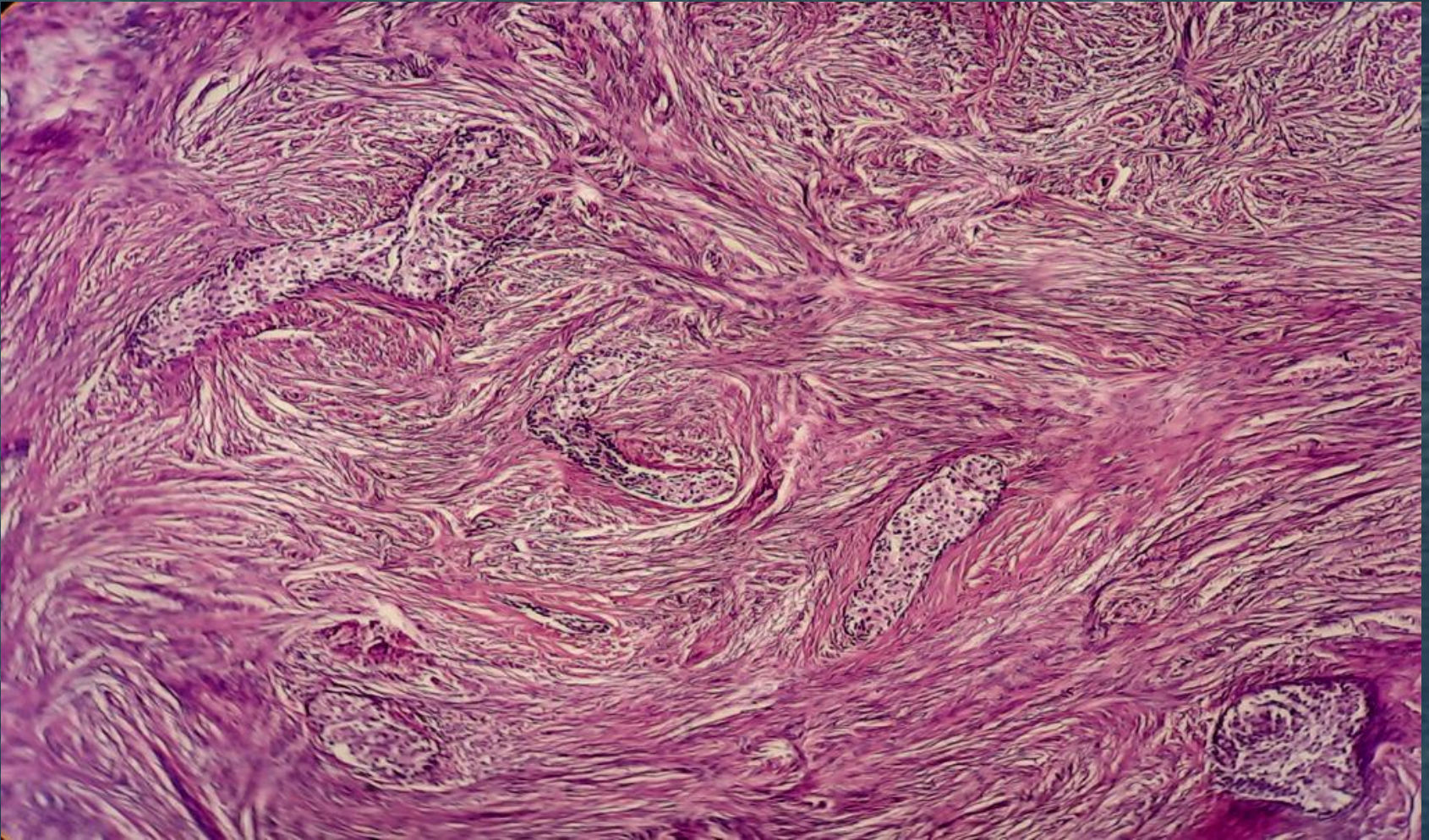
# Left ovary section:



Slide 4: x20



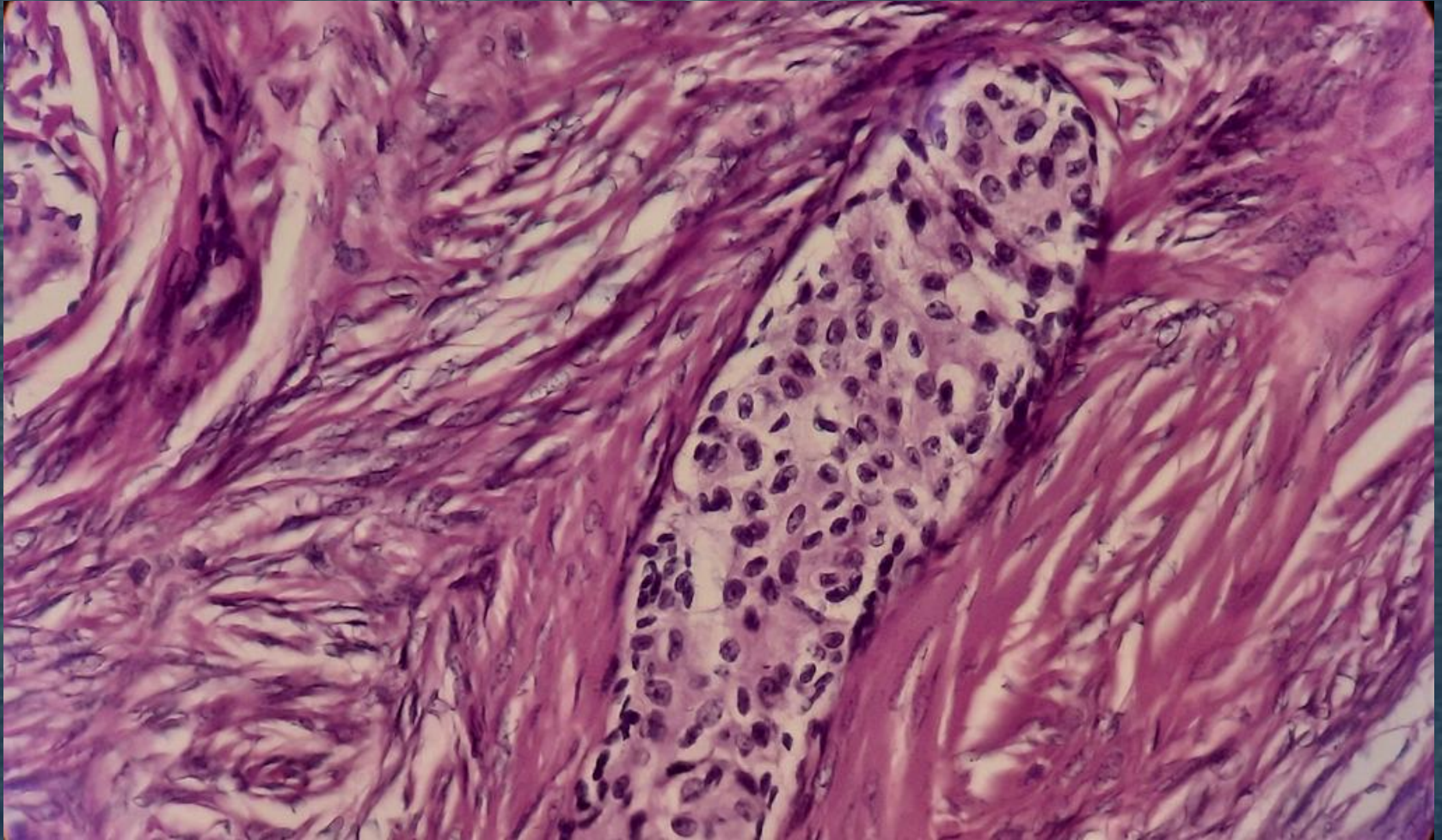
# Left ovary section:



Slide 4: x20



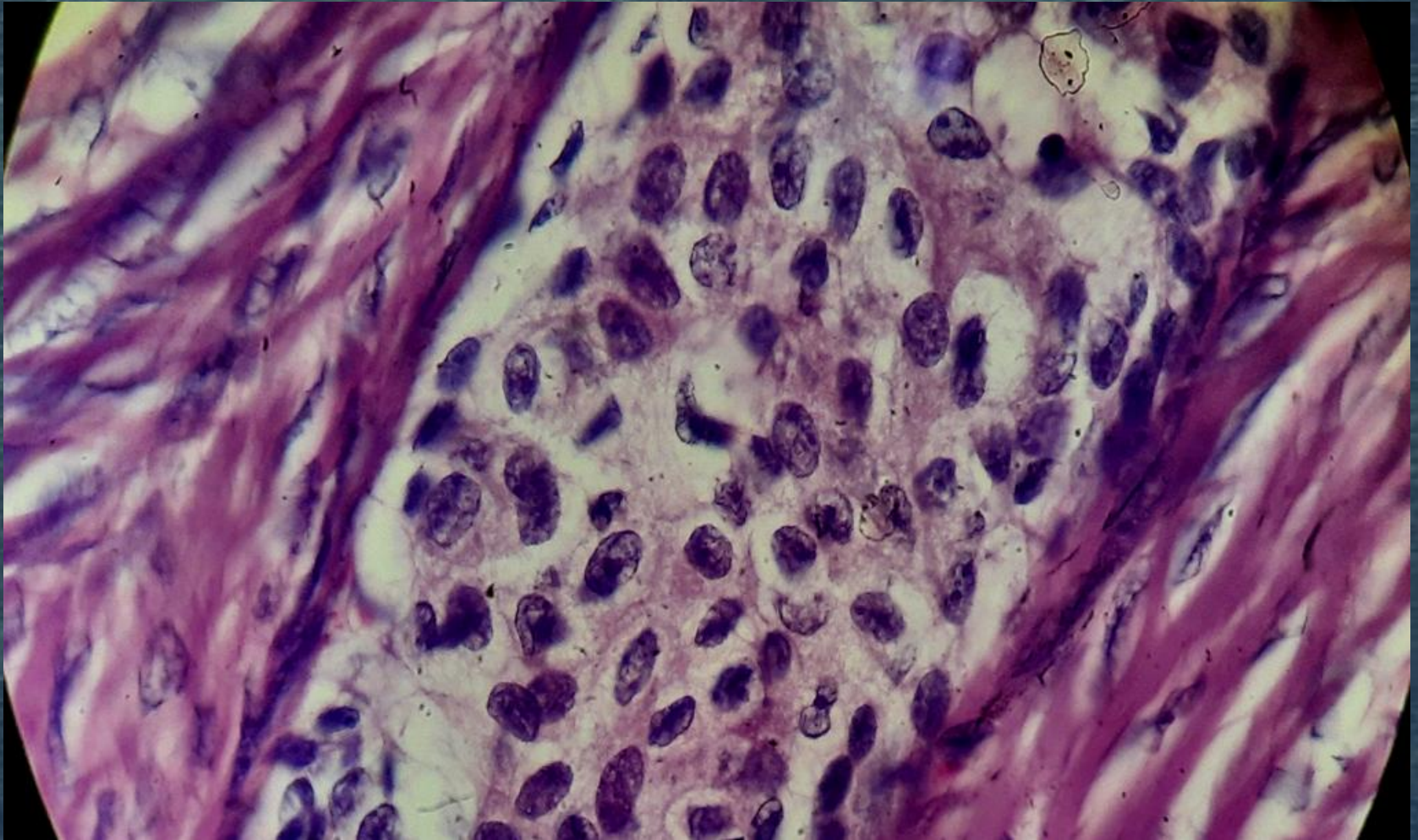
# Left ovary section:



Slide 4: x40



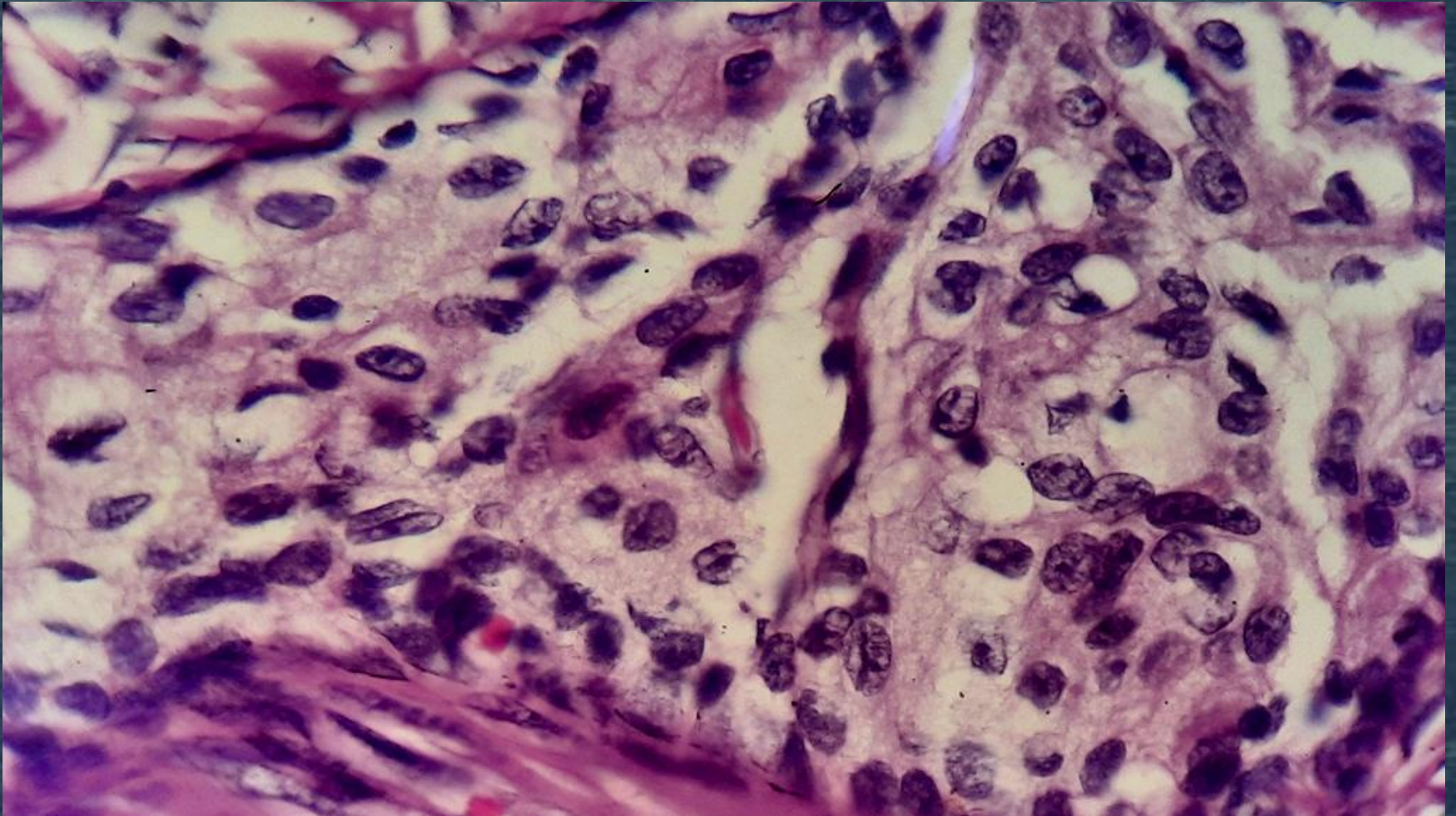
# Left ovary section:



Slide 4: x100




# Left ovary section:



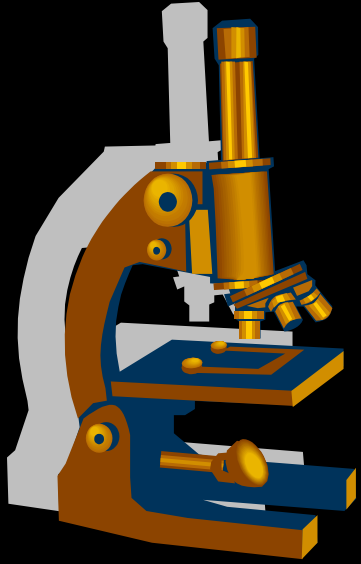
Slide 4: x100



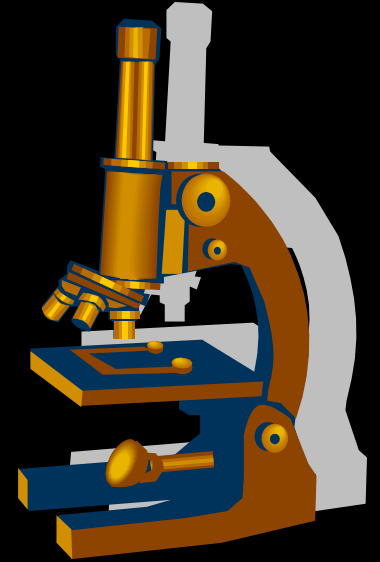


**Final**  
**Diagnosis?**





Final Diagnosis:



Benign Brenner  
Tumor

# Brenner Tumor

- **Definition:** 1-2% of ovarian neoplasms / Tumor composed of transitional/urothelial-like epithelium, typically embedded in fibromatous stroma.
- Benign, borderline and malignant variants based on the growth pattern and cytological features of the epithelial cells.
- **Epidemiology:** most common in the fifth and sixth decades
- **Site:** Ovary / rarely extraovarian



# Brenner Tumor

## Essential features:

- **Benign:** Adenofibromatous architecture with nests of bland transitional epithelium within fibromatous stroma.
- **Borderline:** Papillary architecture with papillae covered by multilayered transitional epithelium / variable but usually low grade cytological atypia.
- **Malignant:** Stromal invasion by carcinoma with transitional cell features, associated with a benign or borderline Brenner Tumor.

# Brenner Tumor

- **Clinical Features:** usually asymptomatic / borderline and malignant tumors are larger and usually present with findings secondary to an adnexal mass.
- **Radiology Description:** Nonspecific findings of a solid or solid-cystic ovarian mass.
- **Diagnosis:** Most benign Brenner tumors are an incidental finding in an ovary removed for other reasons / Borderline and malignant Brenner tumors are usually diagnosed at the time of removal of an adnexal mass.



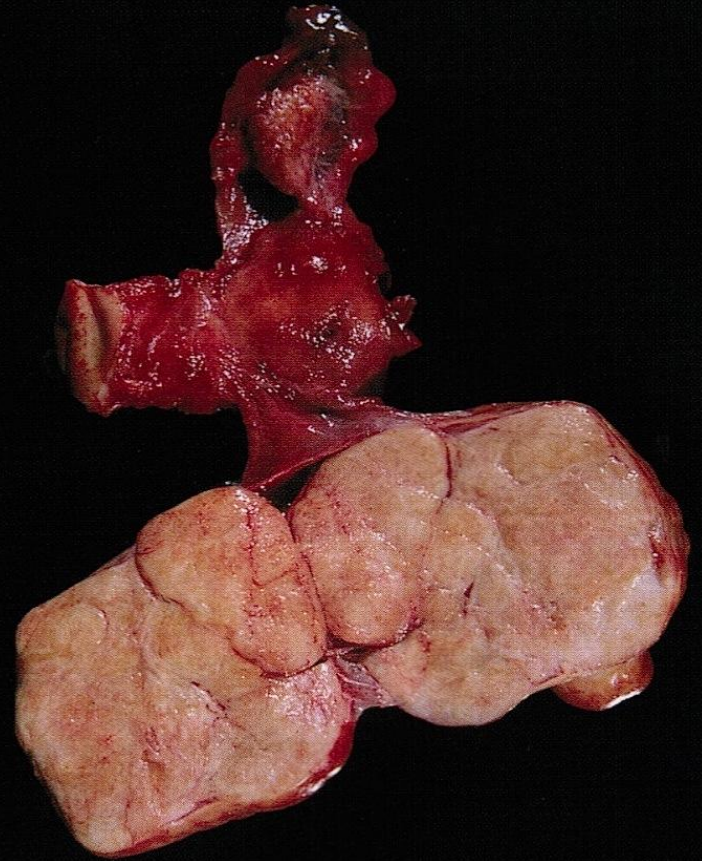
# Brenner Tumor

- **Treatment:** Oophorectomy / Adjuvant chemotherapy for advanced stage malignant Brenner tumors.

# Brenner Tumor

## Gross Description:

- **Benign:** Small (usually < 2 cm), circumscribed, fibrous tumor with a uniform cut surface (**fibroma or thecoma-like**) / Calcifications may be present.
- **Borderline/malignant:** Smooth surface, larger (usually > 10 cm) with fleshy, polypoid masses projecting into cystic cavity(s).

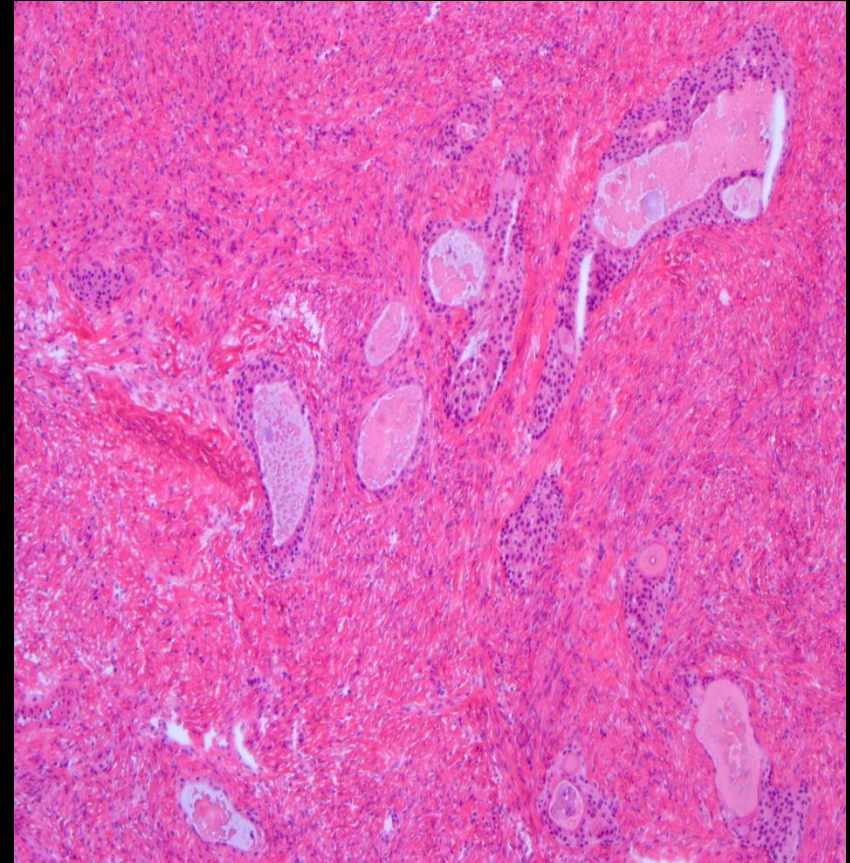




# Brenner Tumor

## Frozen section description:

- **Benign:** Adenofibromatous architecture, smooth contoured nests of bland epithelial cells within benign fibromatous stroma.
- **Borderline/Malignant:** Resembling low grade papillary urothelial tumor of the bladder, with papillary fronds covered by transitional-like epithelium.



# Brenner Tumor

- **Microscopic description:**

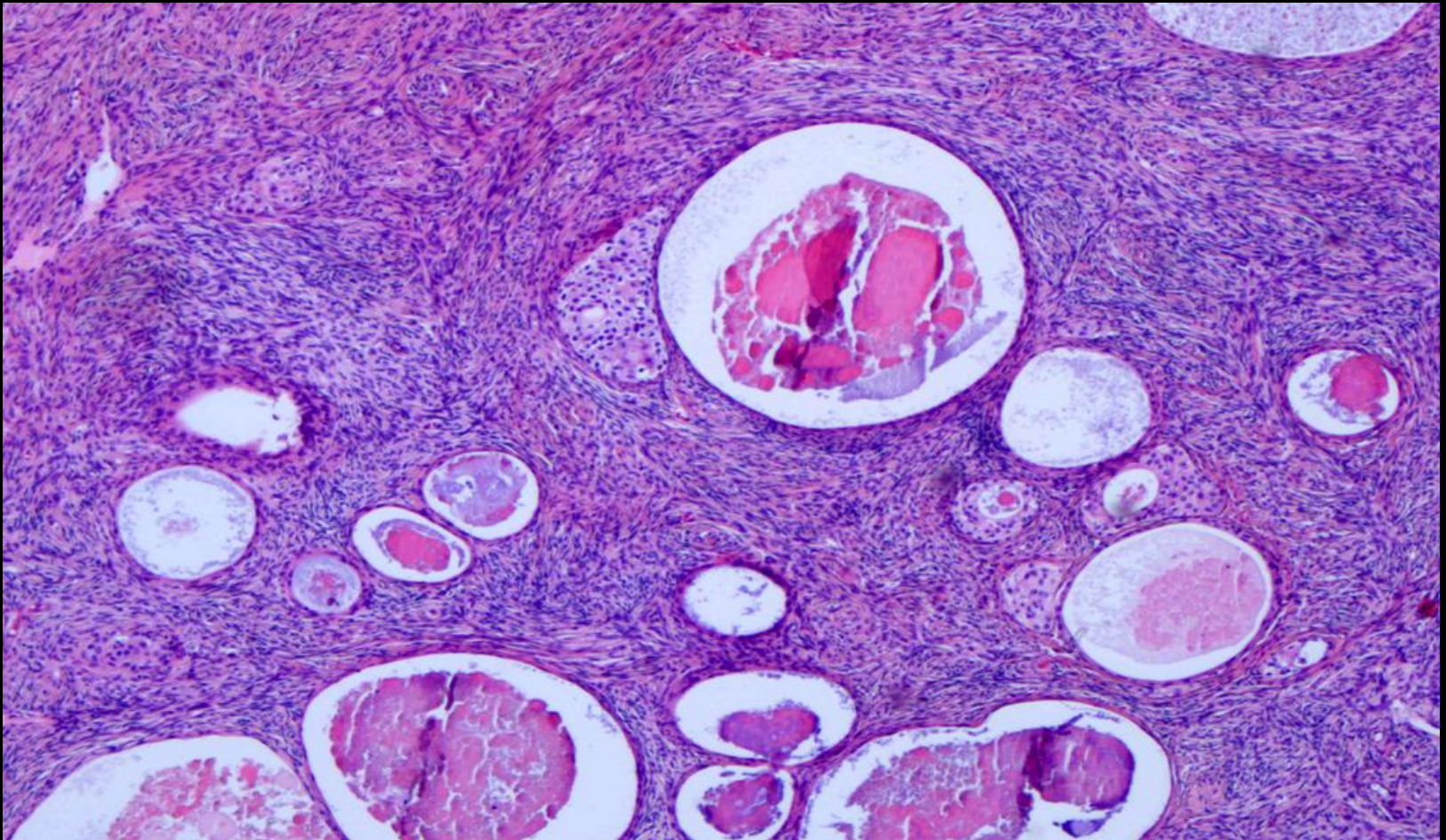
## Benign:

- Smooth contoured nests of bland transitional epithelium within fibromatous stroma.
- Transitional cells have uniform oval nuclei and may have a longitudinal nuclear groove.
- may be mucinous epithelium at the center of the nests, with microcyst formation.
- Ciliated or nondescript glandular epithelium may be present; a coexistent mucinous cystadenoma is present in 10% of cases.
- Calcification is common.



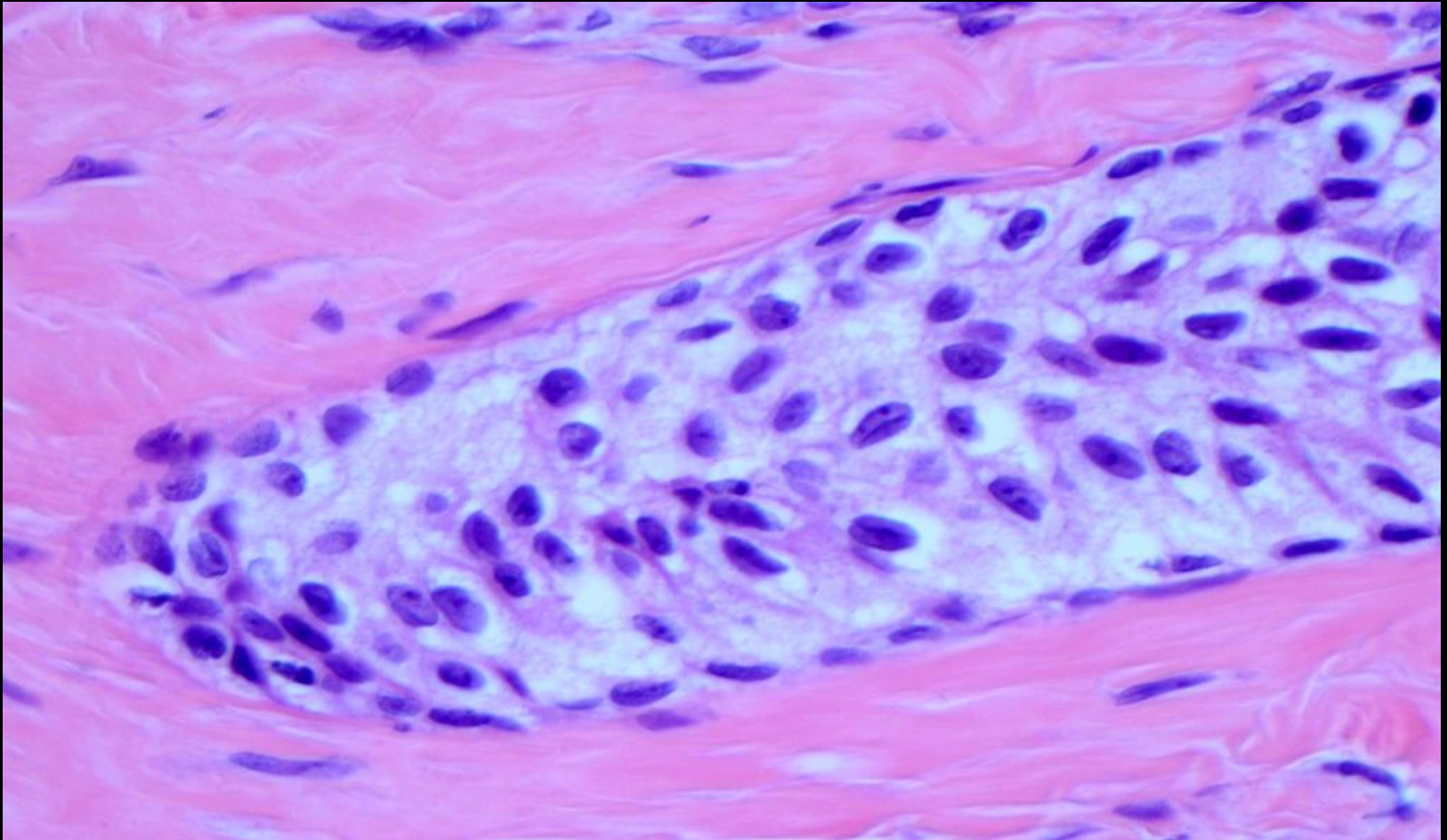
# Brenner Tumor

## Benign Transitional Nests



# Brenner Tumor

## Nuclear Grooves



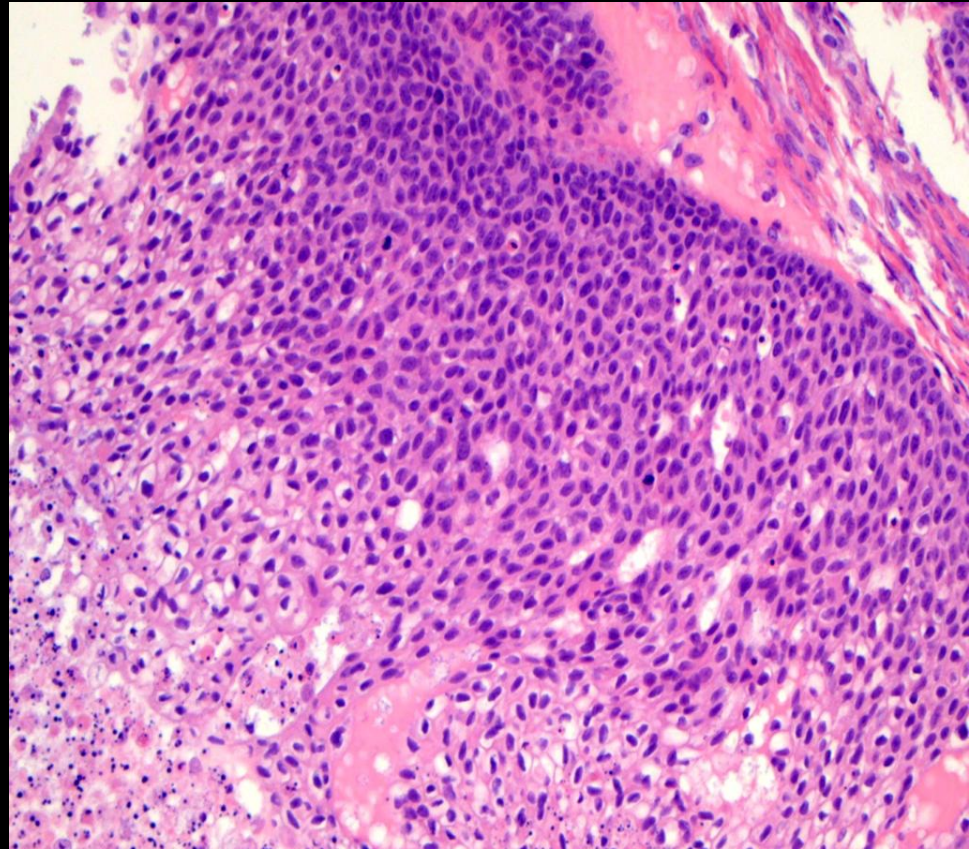


# Brenner Tumor

- **Microscopic description:**

## Borderline:

- Papillary architecture with papillae covered by multilayered transitional epithelium.
- variable cytological atypia; usually low grade but on occasion moderate or marked cytological atypia may be present.
- Benign Brenner tumor component is often present.

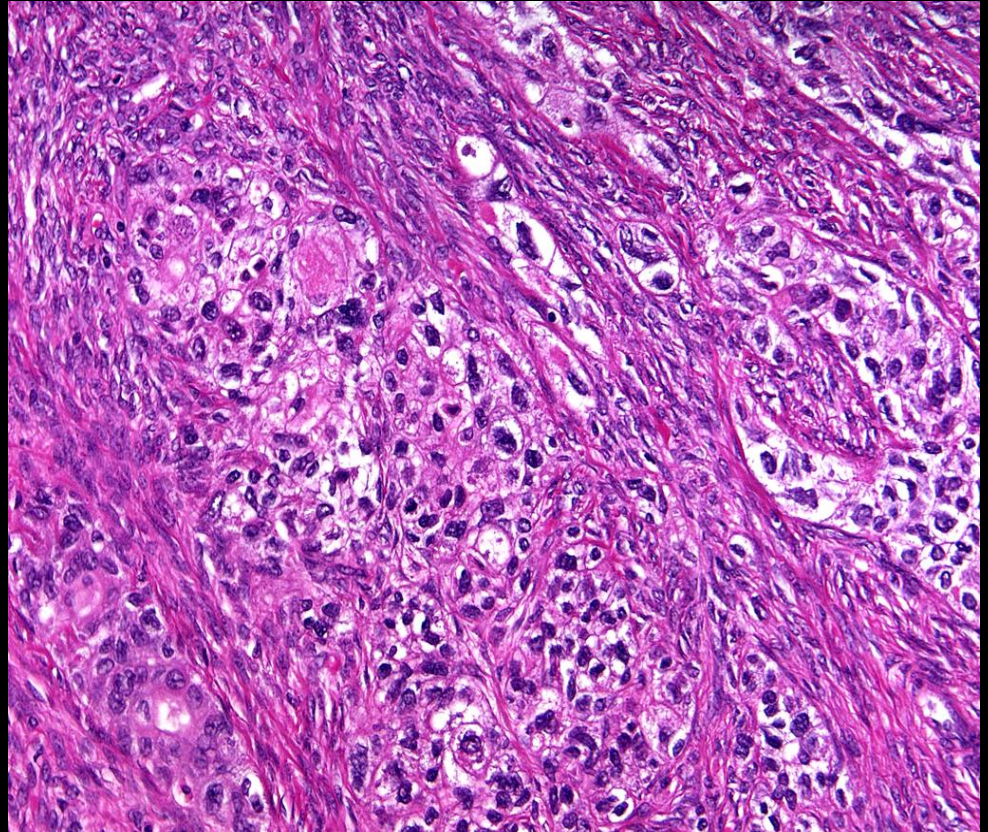


# Brenner Tumor

- **Microscopic description:**

## **Malignant:**

- Stromal invasion by carcinoma with transitional cell features, with irregular nests of cells and single cells in an infiltrative pattern.
- Squamous or mucinous differentiation may be present.
- Benign or borderline Brenner tumor component is present.





# Brenner Tumor

## IHC:

- **Positive for:** CEA, EMA, P63 and GATA3 (nuclear).
- **Negative for:** ER, PR and WT1.

# Differential Diagnosis:

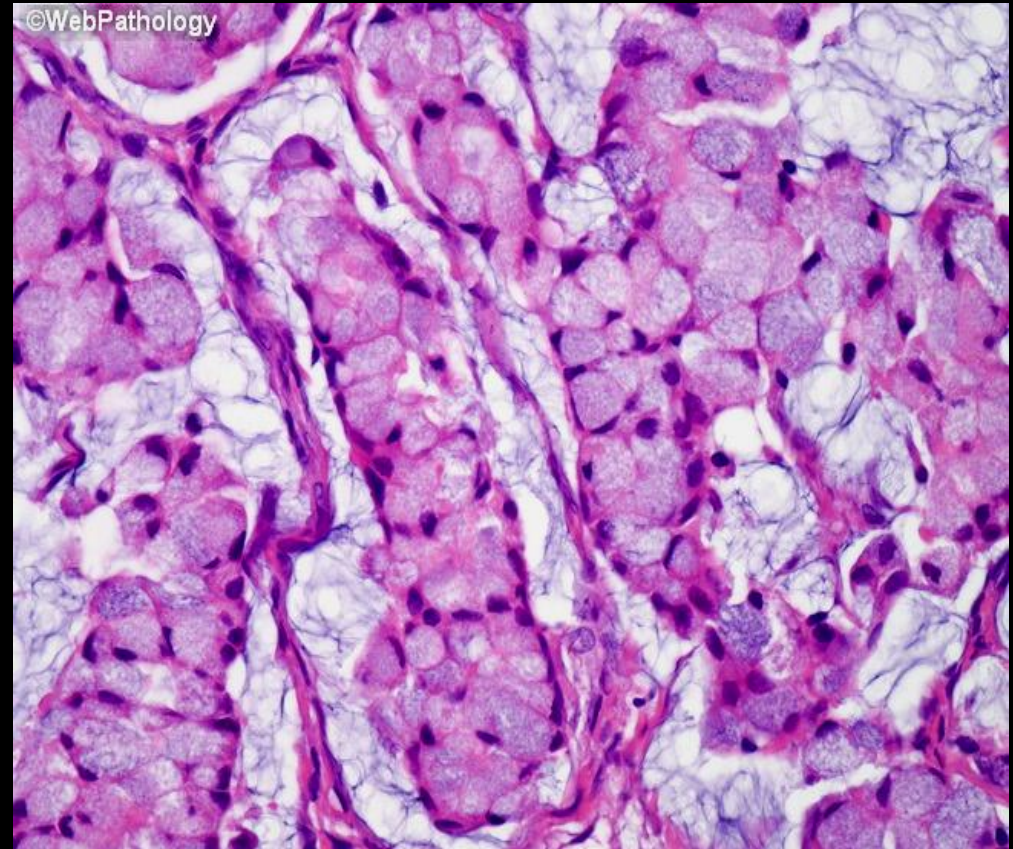
## Krukenberg Tumor:

### Gross Description:

mostly bilateral / mostly < 10cm / mostly multiple small nodules on surface.

### Microscopic Description:

Nests of pleomorphic, mucin-filled, signet ring cells.





# Differential Diagnosis:

## Fibroma:

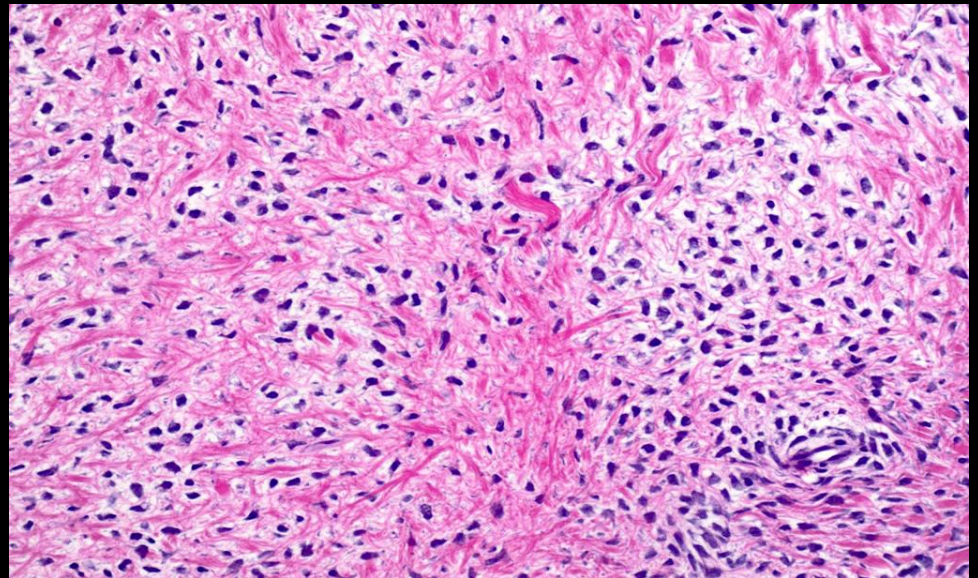
### Gross Description:

Well circumscribed mass with smooth, lobulated surface / Firm, chalky, solid, white to yellow-white to tan-yellow cut surface / Mean size 6 cm (range 1 - 21.5) / Usually unilateral (< 10% bilateral).



### Microscopic Description:

Variably cellular fascicular or less frequently, storiform growth of tumor cells within a variably collagenous stroma / Bland spindled to ovoid nuclei with pointy ends and scant eosinophilic cytoplasm blending with surrounding stroma / occasional mitosis / can be cellular.



# Differential Diagnosis:

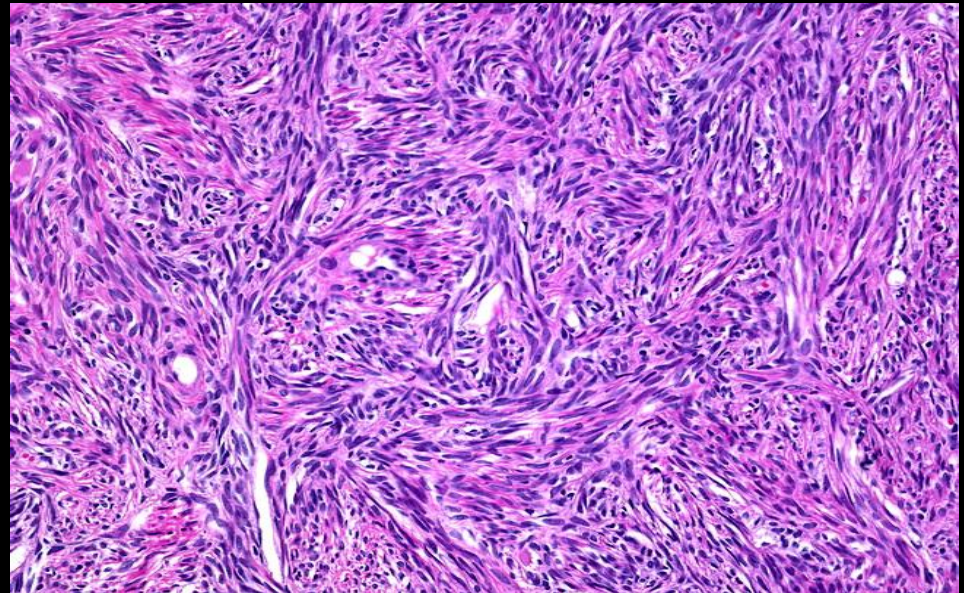
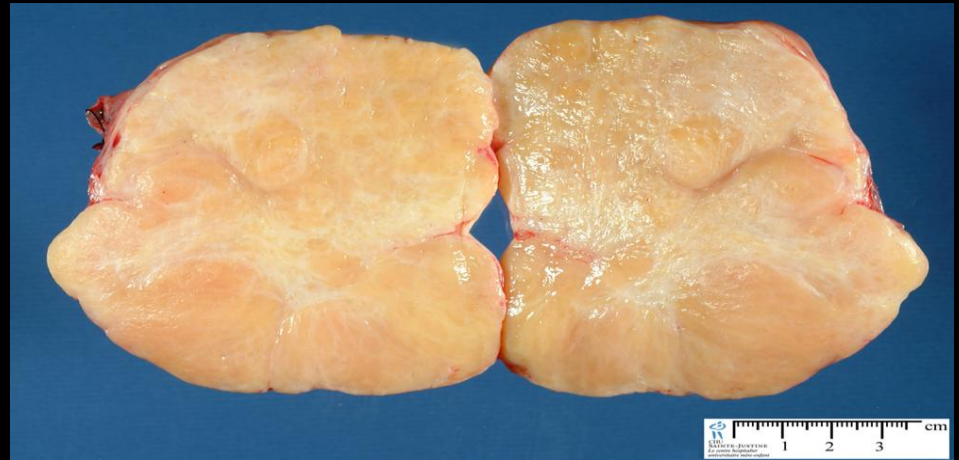
## Fibrothecoma:

### Gross Description:

Ovarian mass showing firm, grayish white fascicular pattern with few yellow areas.

### Microscopic Description:

Spindle stromal cells randomly distributed or arranged in a fascicular fashion / an amount of the stroma is characterized by thecal cells which are oval or rounded with moderate to abundant pale or vacuolated cytoplasm / Nuclei are round to oval and pale with little or no atypia / fibromatous component separates the sheets and nests of thecal cells.







**Thank You!**