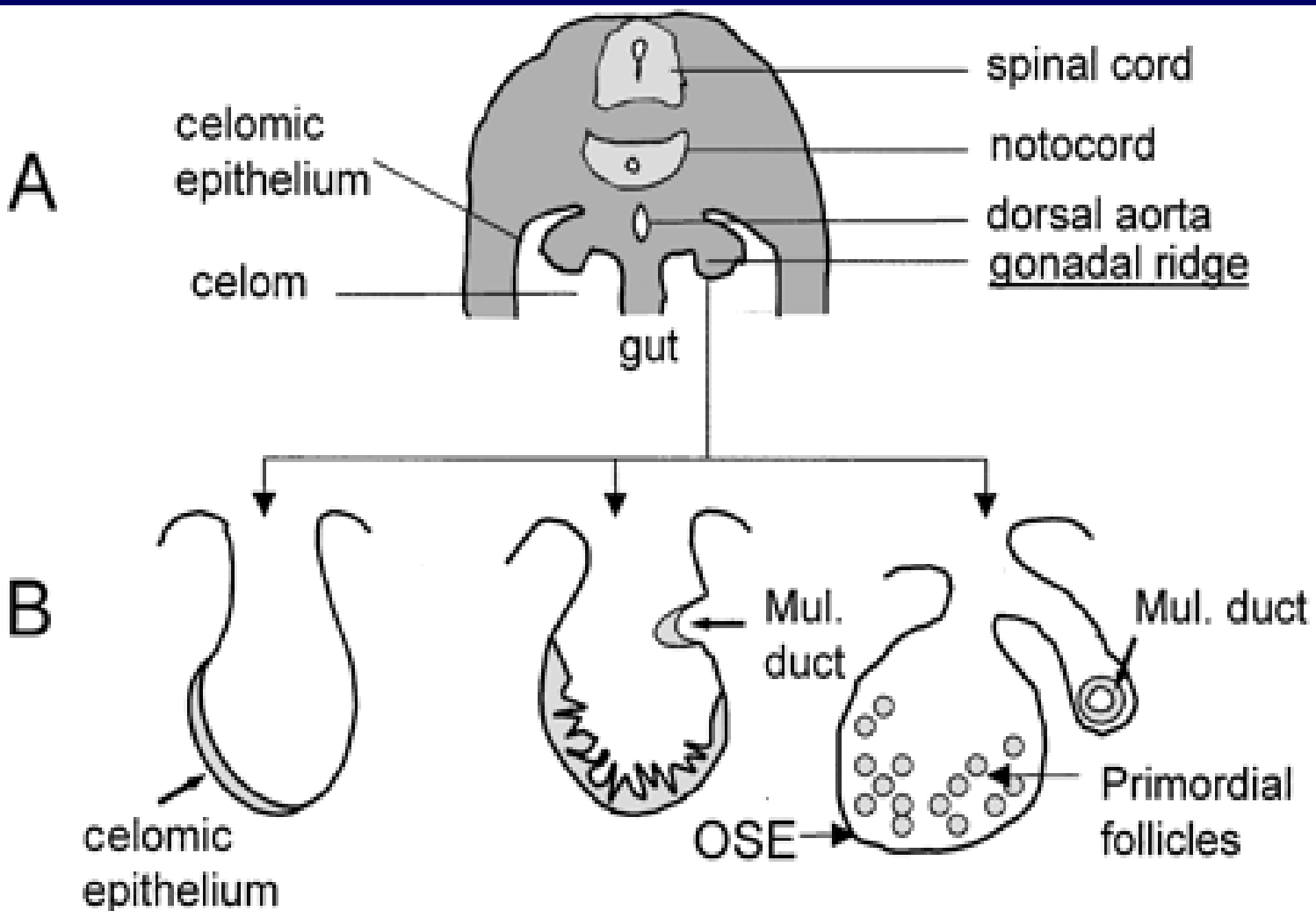


# Benign tumours of the Ovary

# Development of the ovary:

- It is of triple origin:
- Coelomic epithelium of the genital ridge.
- the underlying mesoderm
- Primitive germ cells



**Embryo**

stage: 25 somites

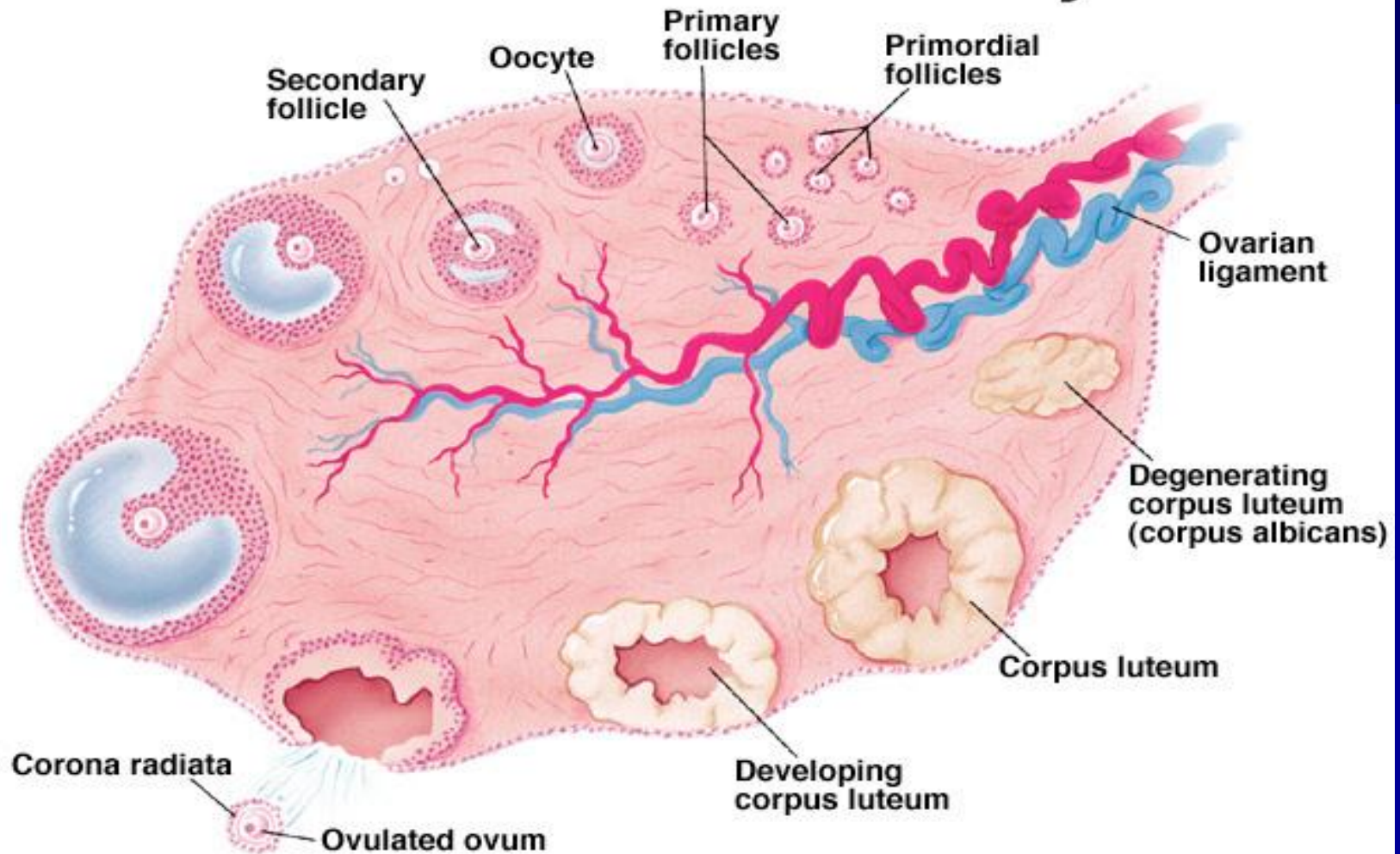
30 somites

14 weeks

# Structure of ovaries:

- covered by a layer of simple cuboidal epithelium called germinal (ovarian) epithelium
- Underneath is a dense connective tissue capsule, the tunica albuginea
- an outer cortex contain follicles
- Medulla: loose connective tissue contain blood vessels and nerve fibers.

# Structure of an Ovary

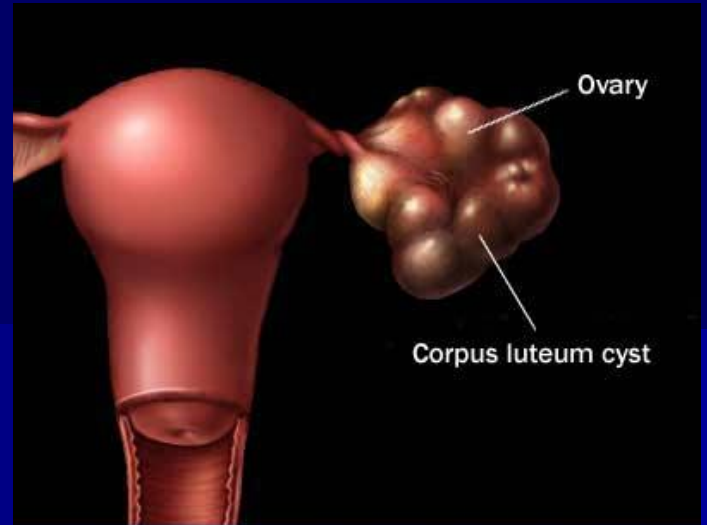
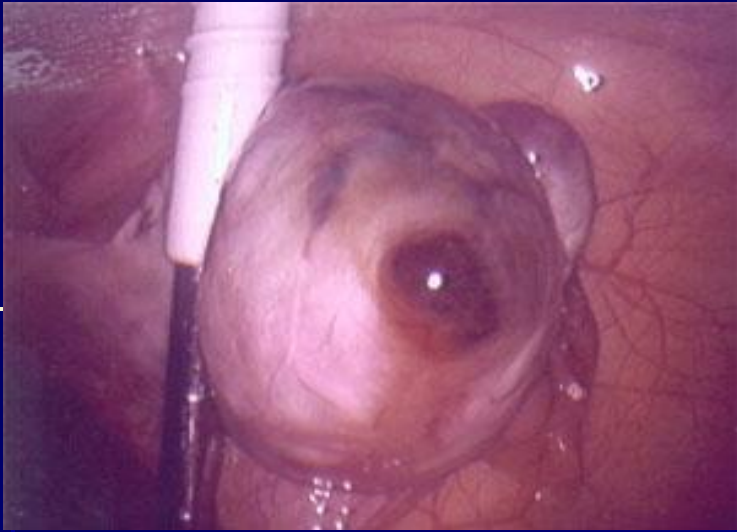


# Physiological cyst:

- **Follicular cyst:** may persist for several menstrual cycles & may achieve a diameter of up to 10 cm.

may produce estrogen causing menstrual disturbance & endometrial hyperplasia

- **Luteal cyst:** Corpora lutea are not called luteal cyst unless they are more than 3 cm.



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- Ovarian tumours are a group of neoplasms affecting the ovary and have a diverse spectrum of features according to the particular tumour entity. They include benign, low-malignant potential/borderline and malignant subtypes.

- **Histological Classification of benign ovarian tumours :**

- I- Benign germ cell tumours:**

- **Dermoid cyst (mature cystic teratoma)**
- **Mature solid teratoma**

- II- Benign epithelial tumours:**

- **Serous cystadenoma**
- **Mucinous cystadenoma**
- **Endometrioid cystadenoma**
- **Brenner tumours**
- **Clear cell (mesonephroid) tumours**

### **III- Benign sex cord stromal tumours:**

- **Granulosa cell tumours**
- **Theca cell tumours**
- **Fibroma**
- **Sertoli-Leydig cell tumours**

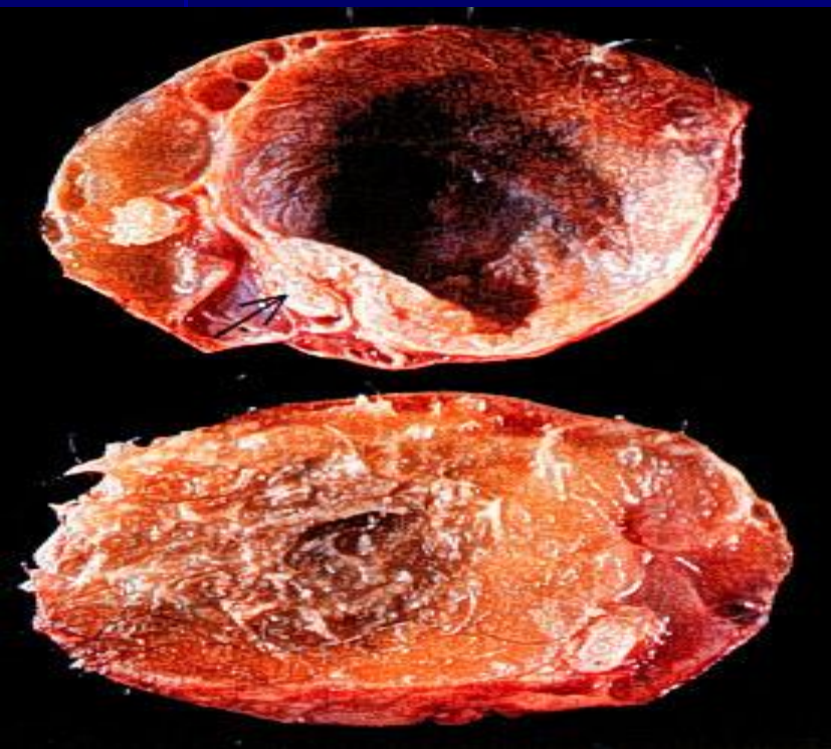
# Benign germ cell tumours:

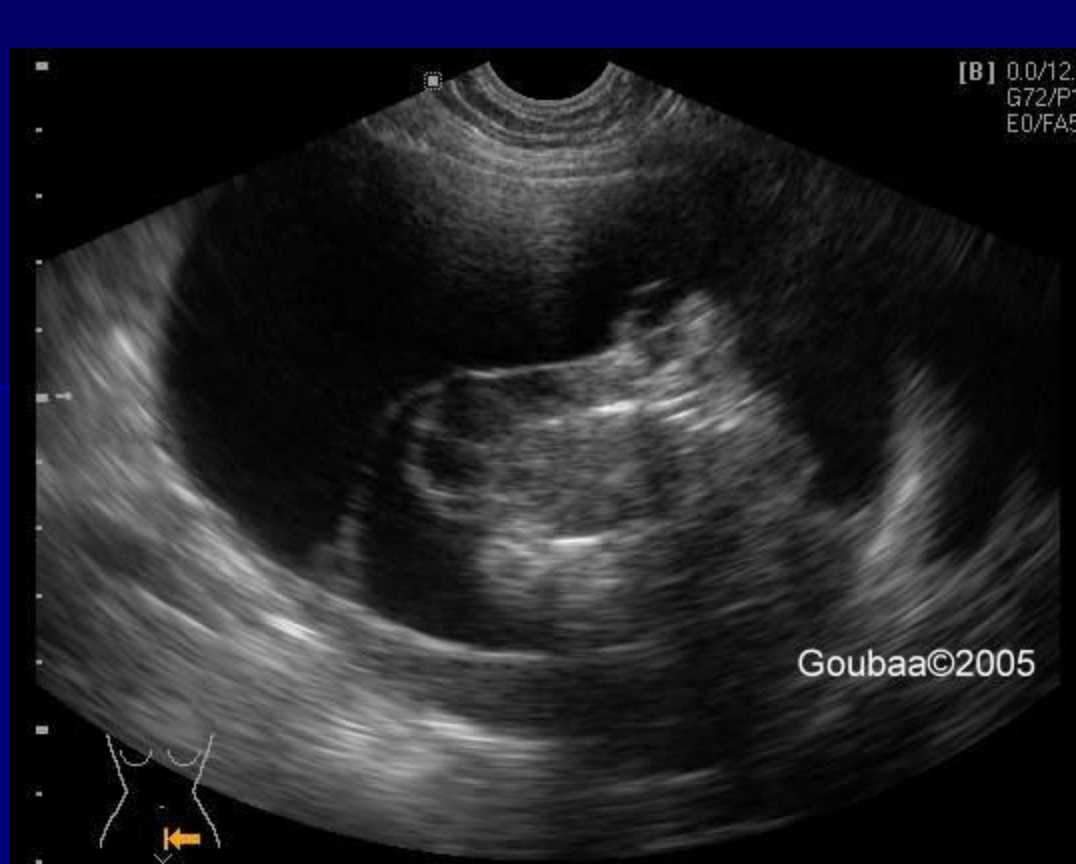
- The commonest ovarian tumours seen in women less than 30 years old.
- arise from totipotential germ cells & may contain elements of all three germ layers (embryonic differentiation).

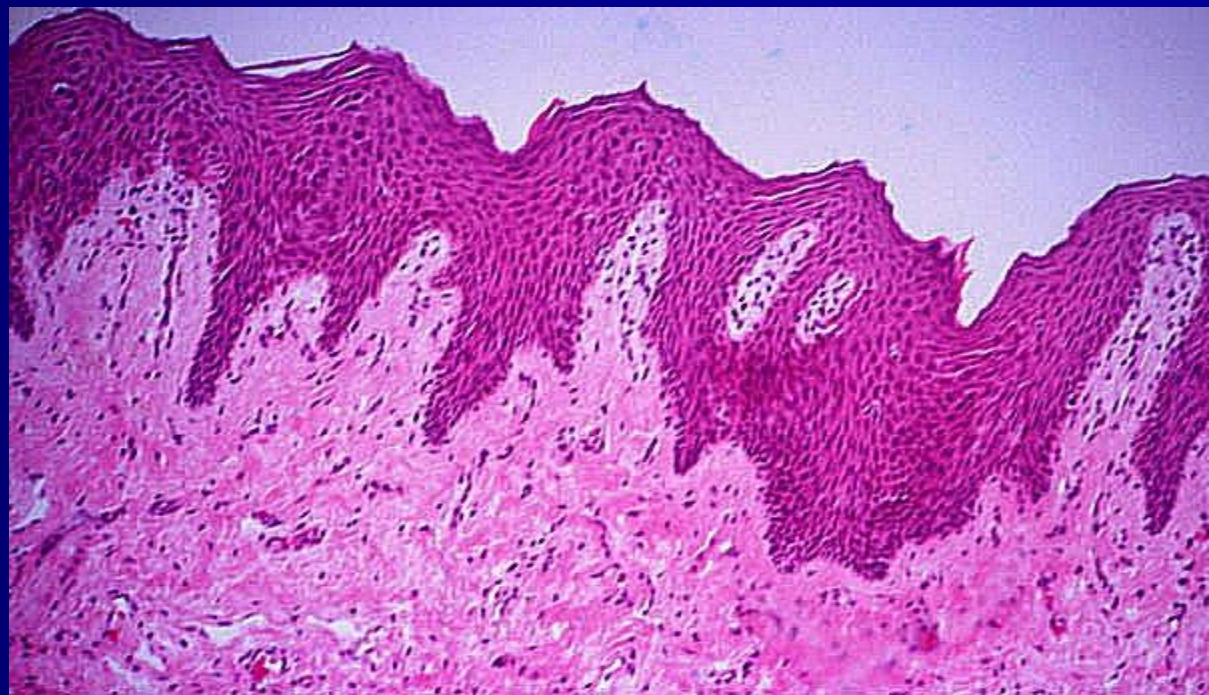
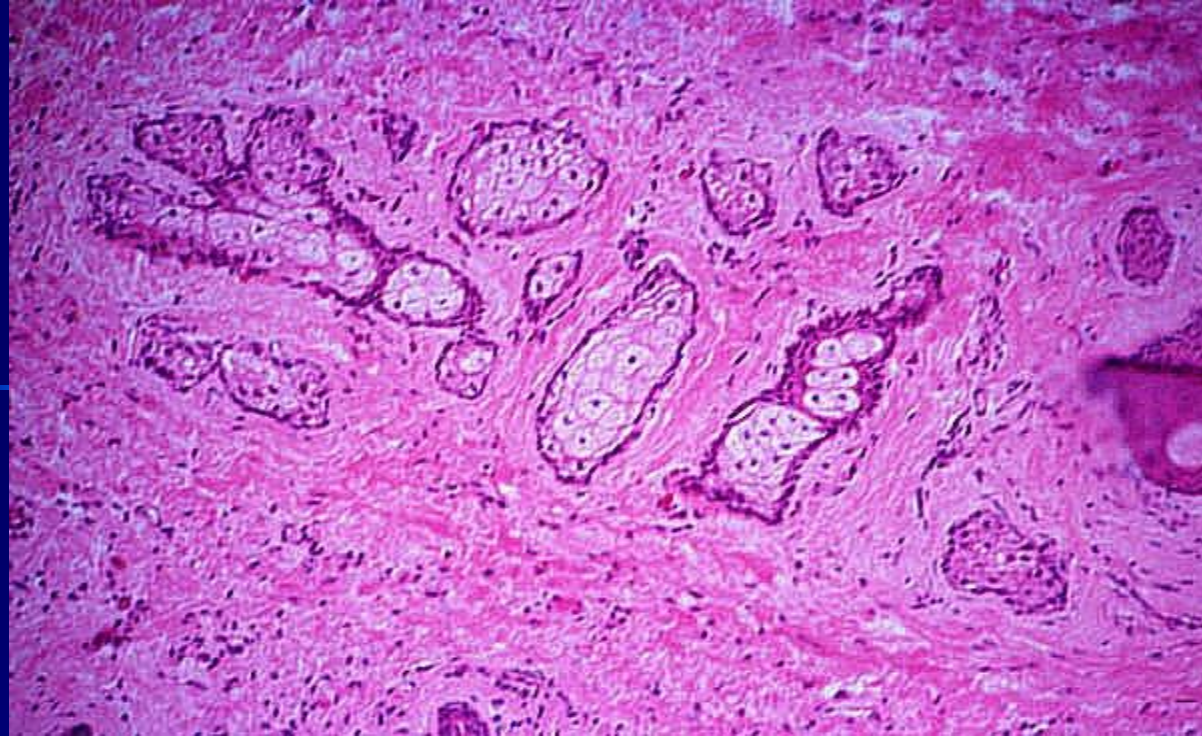
# Dermoid cyst (mature cystic teratoma):

- usually unilocular
- < 15 cm in diameter
- ectodermal structures are predominant. lined with epithelium like the epidermis & contains skin appendages, teeth, sebaceous material, hair & nervous tissue.
- Endodermal derivatives include thyroid, bronchus & intestine,
- the mesoderm may be represented by bone, cartilage & smooth muscle

- monodermal teratoma: The classic example is struma ovarii which contains hormonally active thyroid tissue.
- majority of dermoid cysts are asymptomatic. may undergo torsion or rupture spontaneously, either suddenly, causing an acute abdomen & chemical peritonitis; or slowly causing chronic granulomatous peritonitis.
- 2% contain malignant component







# Mature cystic teratoma



# Benign epithelial tumour

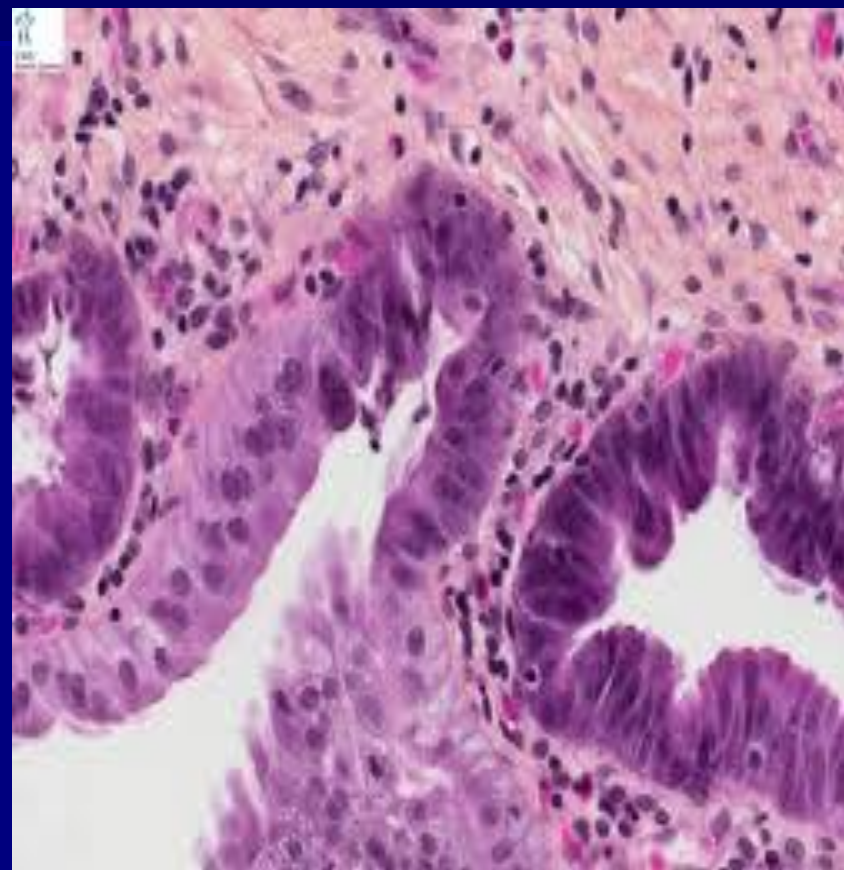
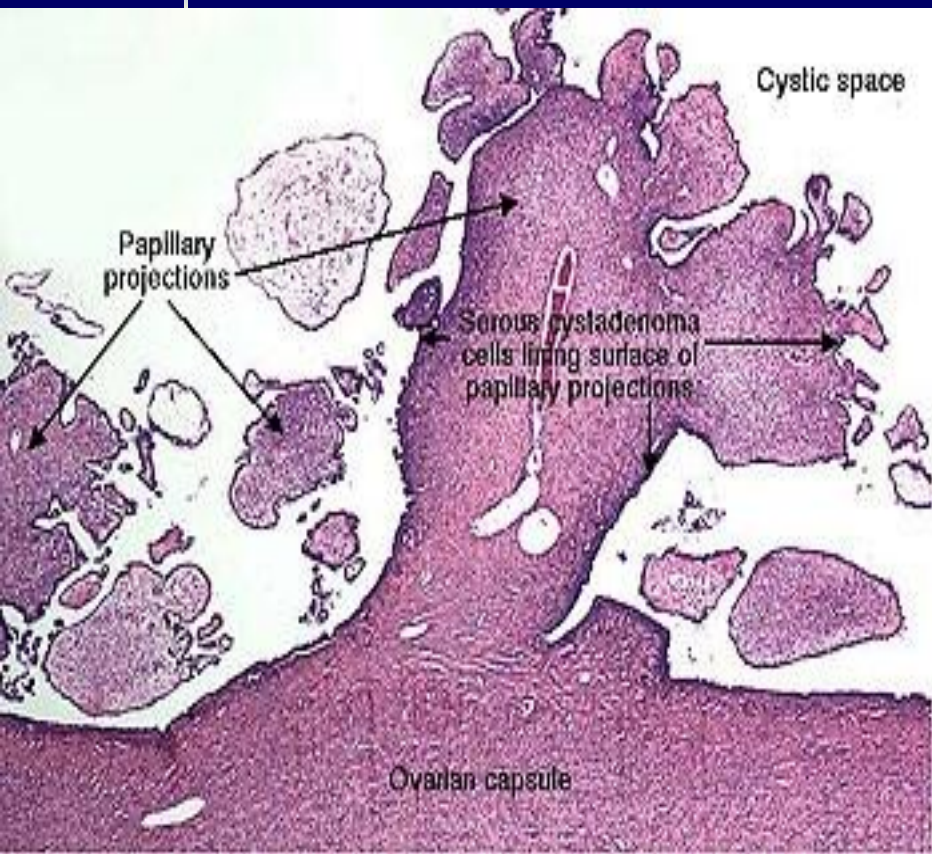
- derived from the coelomic epithelium from which develop Müllerian & Wolffian structures. Therefore this may result in development along endocervical (mucinous cystadenoma), endometrial (endometrioid) or tubal (serous) pathways or uroepithelial (Brenner) lines respectively.

# Serous cystadenoma

- The most common benign epithelial tumour
- usually unilocular cyst with papilliferous processes on the inner surface.
- The cyst fluid is thin & serous. They are seldom as large as mucinous tumours.

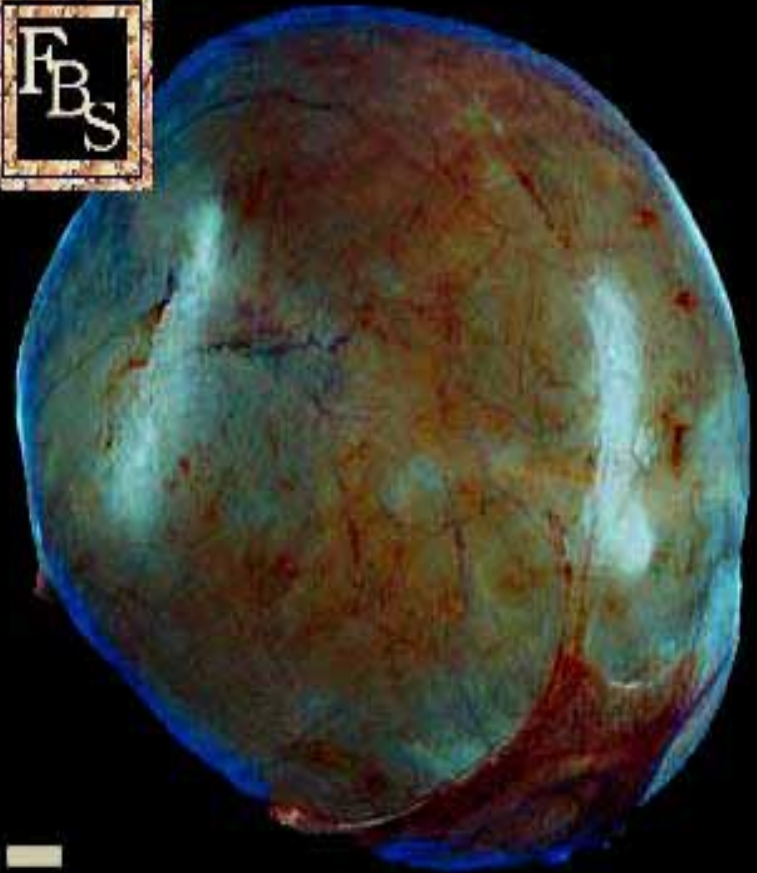
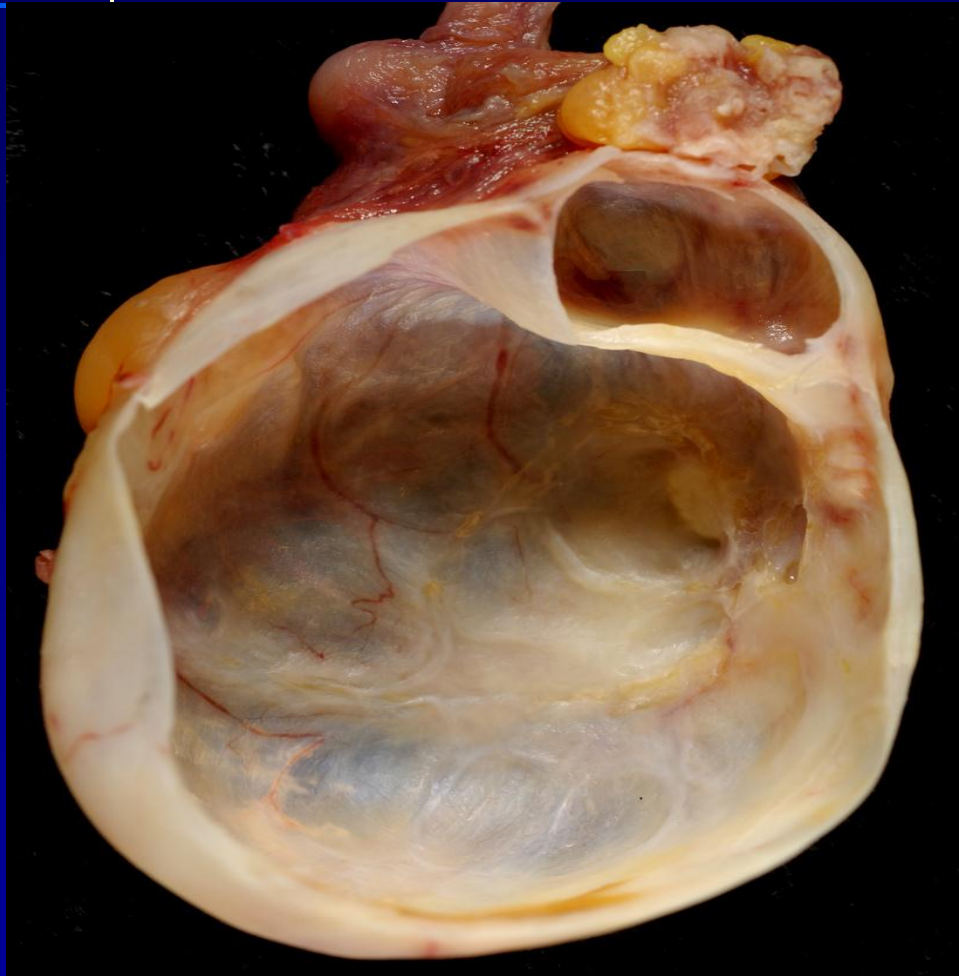






# Mucinous cystadenoma

- Large
- Unilateral
- multilocular cysts
- smooth inner surface.
- lining epithelium consists of columnar mucus-secreting cells.
- The cyst fluid is thick & gelatinous.
- pseudomyxoma peritonei





# Endometrioid tumours of the ovary



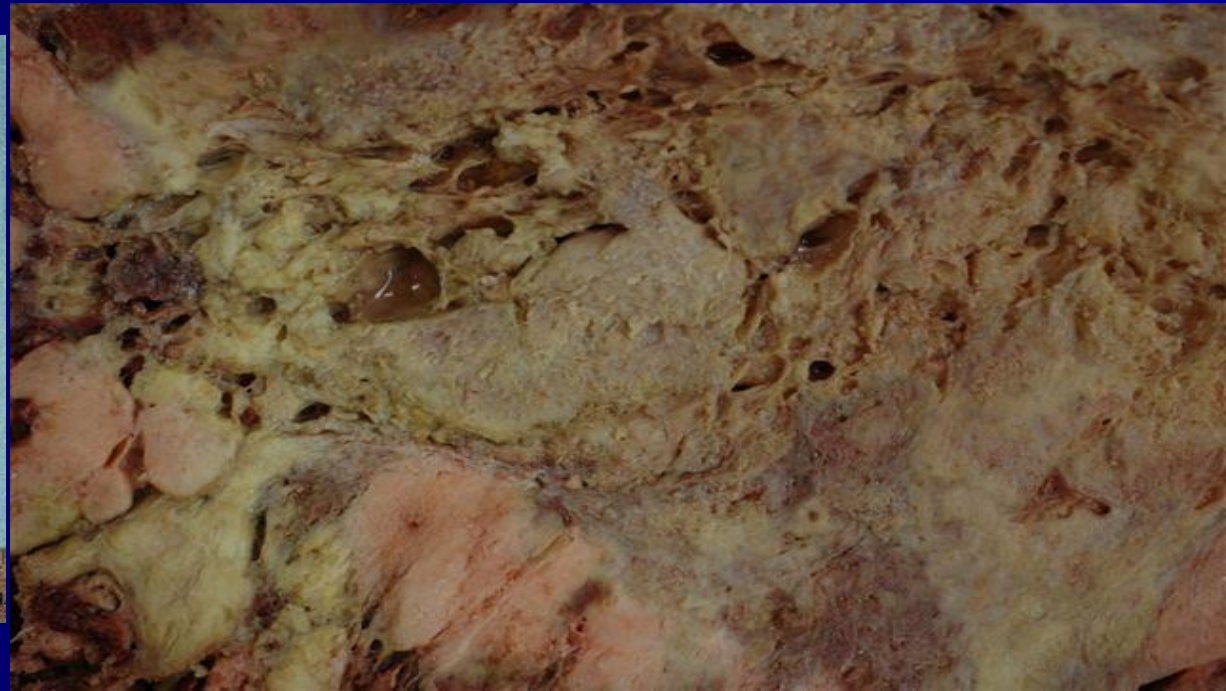
Rashmi Nursing Home

## **Benign sex cord stromal tumours:**

- Constitute a small percentage of benign ovarian tumours.
- They occur at any age from prepubertal children to elderly, postmenopausal women.
- Many secrete hormones & present with symptoms of inappropriate hormone effects

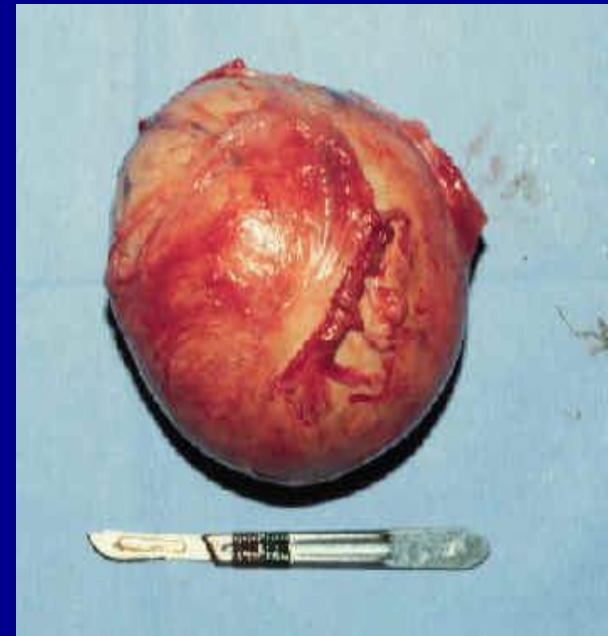
# Granulosa cell tumor

- These are malignant tumours but are mentioned here because they are generally confined to the ovary when they present & so have a good prognosis



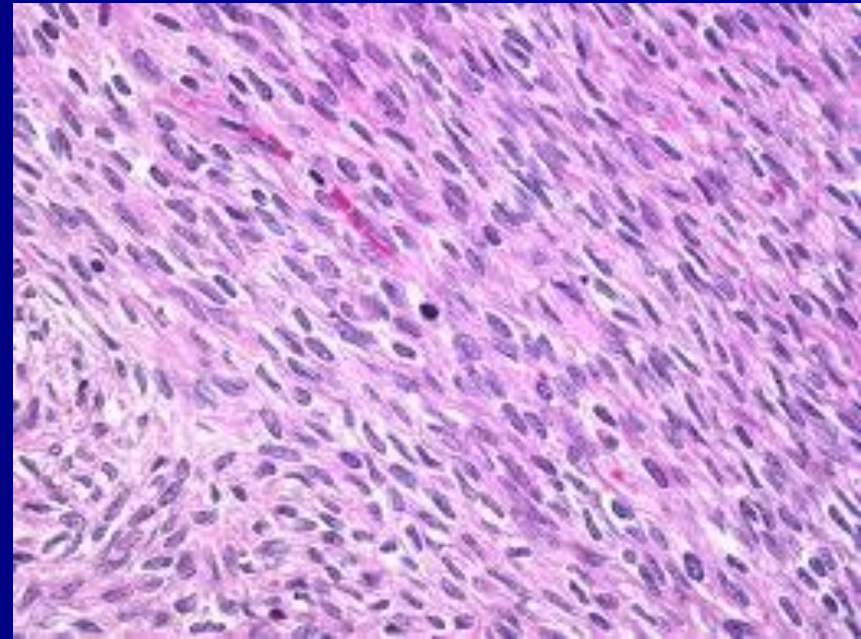
# Theca cell tumour

- benign, solid & unilateral
- Oestrogen secreted, cause systemic effects such as precocious puberty, postmenopausal bleeding, endometrial hyperplasia & endometrial cancer
- rarely cause ascites or pleural effusion.



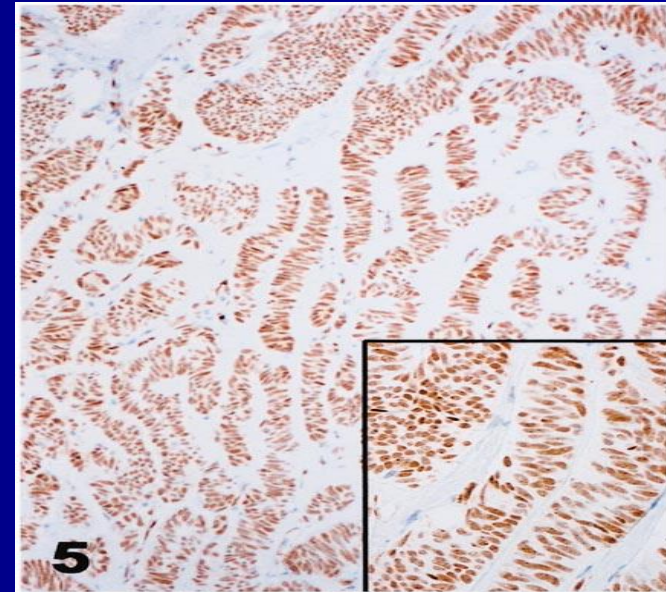
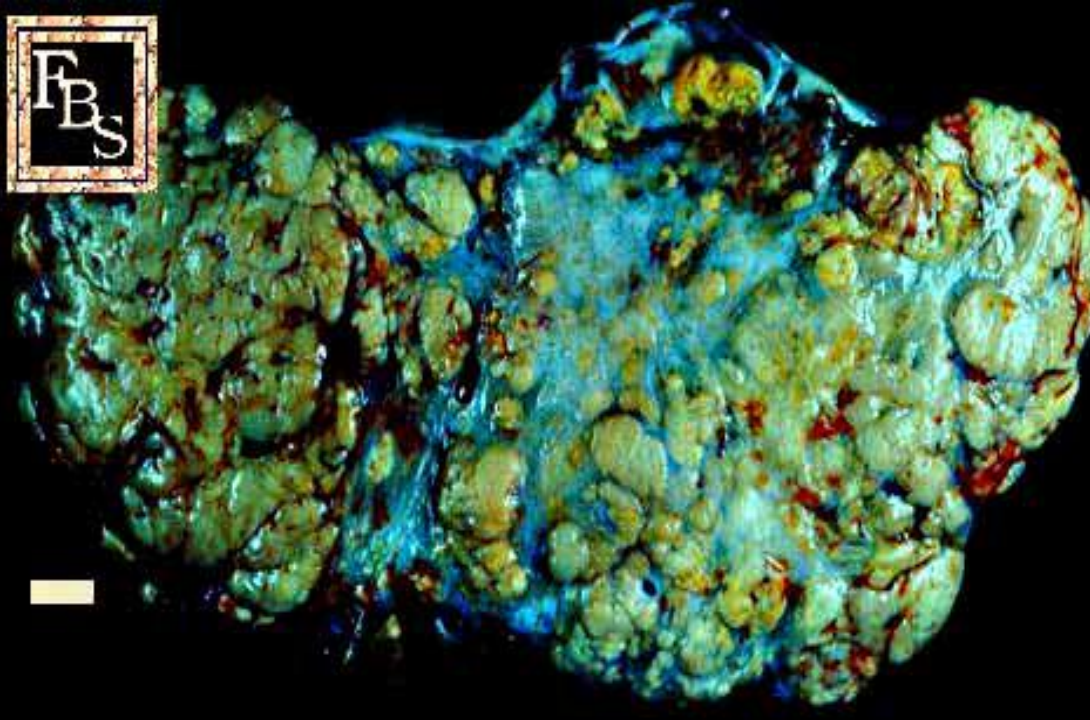
# Fibroma:

- these are hard, mobile & lobulated with a glistening white surface.
- While ascites occur with many of the larger fibromas, Meig's syndrome – ascites & pleural effusion in association with fibroma of the ovary- is seen in only 1% of cases.



# Sertoli-Leydig cell tumor

- Many produce androgens, & signs of virilization are seen in three quarters of patients. Some secrete oestrogen



# Presentation:

- Asymptomatic
- pain
- Abdominal swelling: noticed only when the tumour is very large.
- Pressure effects
- Menstrual disturbance
- Hormonal effects
- Abnormal cervical smear

# Differential diagnosis of benign ovarian tumours:

## Pain

- Ectopic pregnancy
- Spontaneous abortion
- Pelvic inflammatory disease
- Appendicitis
- Meckel's diverticulum
- Diverticulitis

## Abdominal swelling

- Pregnant uterus
- Fibroid
- Full bladder
- Ovarian malignancy
- Colorectal carcinoma

## Pressure effects

- Urinary tract infection

All other causes of menstrual irregularities, precocious puberty & postmenopausal bleeding.

# Diagnosis:

- **History:**

- **Examination:**

- peritonism is an ominous sign.

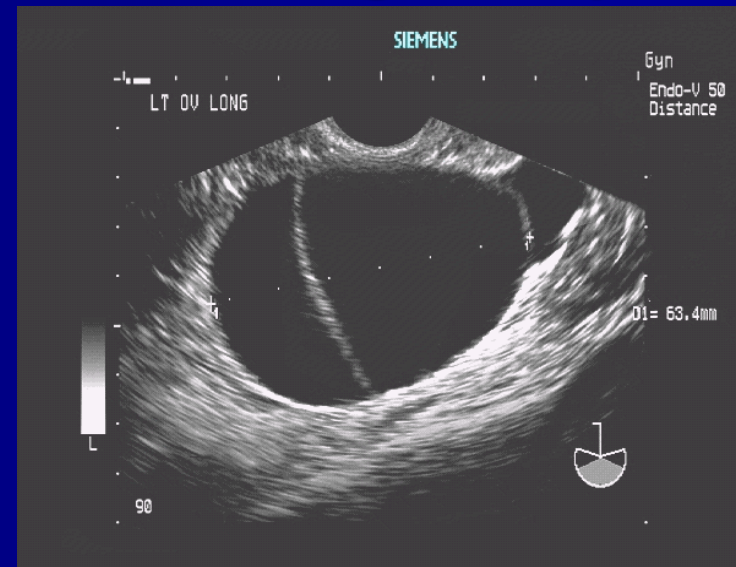
- Bimanual examination is essential for palpating the mass between the vaginal & abdominal hands, its mobility, texture & consistency, presence of palpable lymph nodes in the pouch of Douglas. Hard, irregular, fixed mass is likely to be invasive.



## Investigations:

- **Ultrasound:** mass size, consistency, and internal architecture. Bilaterality, ascites
- Doppler ultrasonographies to evaluate the resistive index of the mass vessels, which, when low, indicate a malignancy.

- **Radiological investigations: if in doubt**  **MRI**



■ **Blood test & serum markers:** some times you need:

1. serum CA 125
2. beta-human chorionic gonadotrophin ( $\beta$ -hCG)
3. Oestradiol
4. Androgen
5. alpha-fetoprotein levels

# problem

The following masses pose the greatest concern:


- Those that have a complex internal structure
- Those that have solid components
- associated with pain
- Masses in prepubescent or postmenopausal women
- Large cysts

# Management:

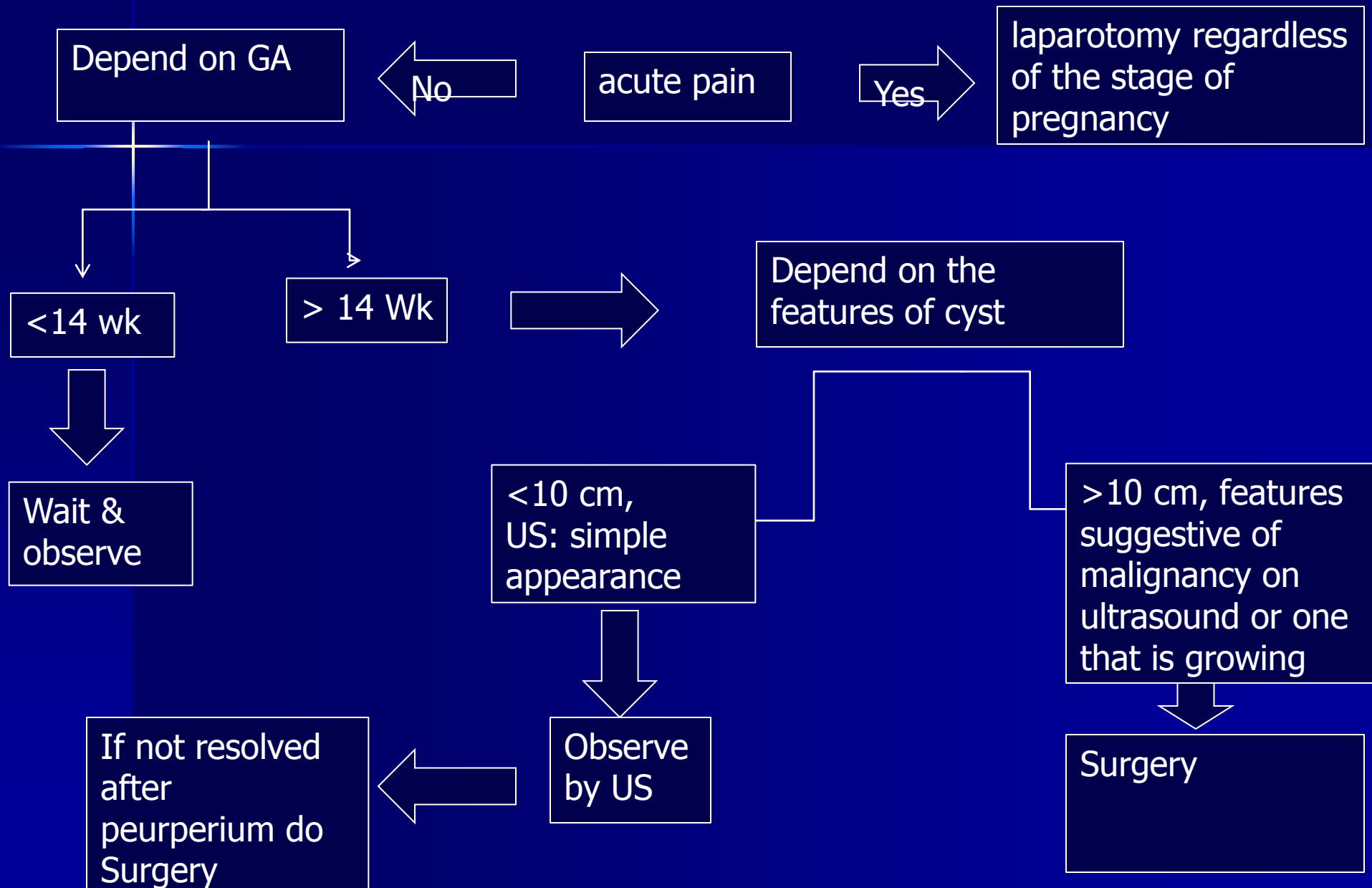
Criteria for observation of asymptomatic ovarian tumour:

- Unilateral
- Unilocular cyst without solid components
- Premenopausal women tumour 3-10 cm in diameter
- Postmenopausal women tumour 2-6 cm in diameter
- Normal CA 125 ( <35mU/mL)
- No free fluid or masses suggesting omental cake or matted bowel loops.

Observation include follow up with US after 3 months, if the cyst is the same follow up with US & CA 125 level will be safe.

- Patient with symptoms:
- severe, acute pain or signs of intraperitoneal bleeding  an emergency laparoscopy or laparotomy will be required.

# The pregnant patient



## Laparoscopic procedures:

- Indications of laparoscopy:
- Uncertainty about the nature of the mass.
- Tumour suitable for laparoscopic surgery:
  - age <35 years.
  - ultrasound show no solid component.
  - simple ovarian cyst.
  - endometrioma.

- Laparotomy:
- If there is any possibility of invasive disease, a longitudinal skin incision should be done.
- A sample of ascitic fluid or peritoneal washings should be sent for cytological examination at the beginning of the operation.
- explore the whole abdomen thoroughly & inspect both ovaries.

- Age < 35 years old: ovarian cystectomy
- Age > 44 years with a unilateral ovarian mass: total abdominal hysterectomy, bilateral salpingo-oophorectomy & infracolic omentectomy.
- Age 35-44 years treatment should be individualized: If conservative surgery is planned, preliminary hysteroscopy & curettage of the uterus are essential to exclude a concomitant endometrial tumour