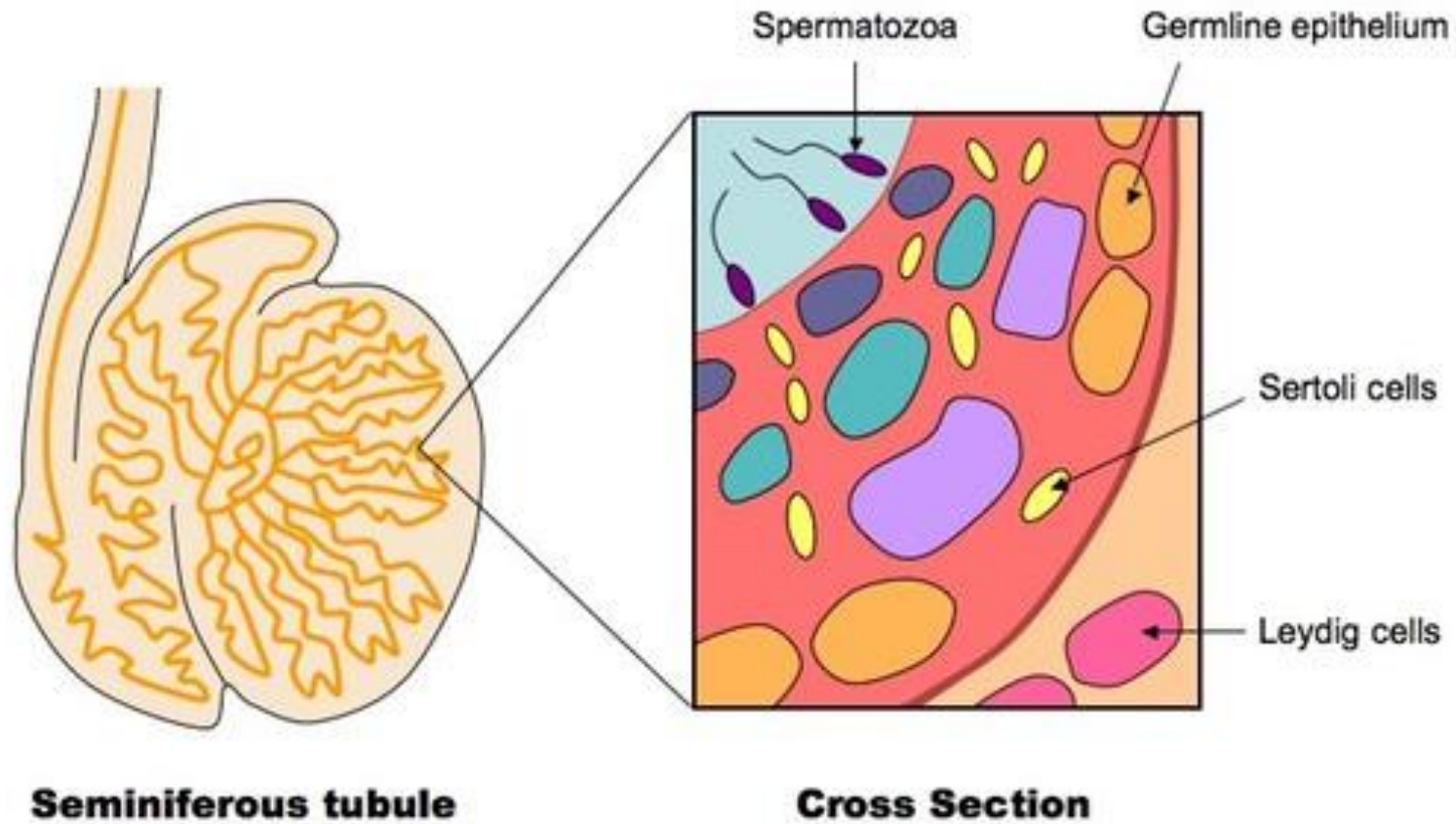


Testicular Tumors

Matthew Chabot and Kiran Mullur, Medical Students C/O 2019

www.12DaysinMarch.com

Closer look at the Testes



For purposes of Step 1 :



Germ cell tumors

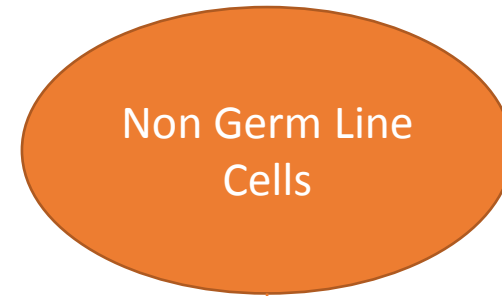
Seminoma

Embryonal

Teratoma

Choriocarcinoma

Yolk sac



Non Germ cell tumors

Leydig Cell Tumor

Sertoli Cell Tumor

Lymphoma

NO EPITHELIAL TUMORS OF THE TESTES. Contrast that with epithelial tumors in the ovary

Tackling Testicular Tumors

These criteria will guide you to the promised land (aka right answer):

- Histology Histology Histology!
- Gross Appearance
- Tumor Markers
- Age

For example: **Age** old male presents with scrotal mass. Histological examination reveals **pathological descriptor**:

Question may ask:

- What is the most likely diagnosis?
- Which marker is tumor likely to secrete?
- What is the best treatment?
- Sites of metastasis?

Germ Cell Tumors

- **95%** of ALL testicular tumors
- Almost always **malignant** (think they're nasty and "germy")
- **Age:** young men. 15-35 y/o
- **Risk Factors:** **cryptorchidism**

Germ Cell Tumors

- **95%** of ALL testicular tumors
- Almost always **malignant** (think they're nasty and "germy")
- **Age:** young men. 15-35 y/o
- **Risk Factors:** **cryptorchidism**
- Does not **transilluminate**
 - Contrast with hydrocele



Germ Cell Tumors

Seminoma: most common testicular tumor

Age: young men 15-35

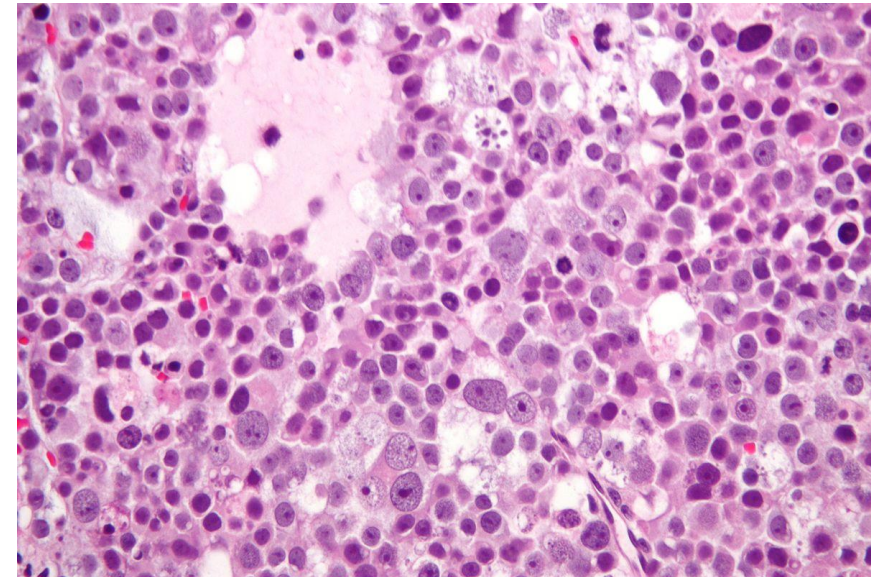
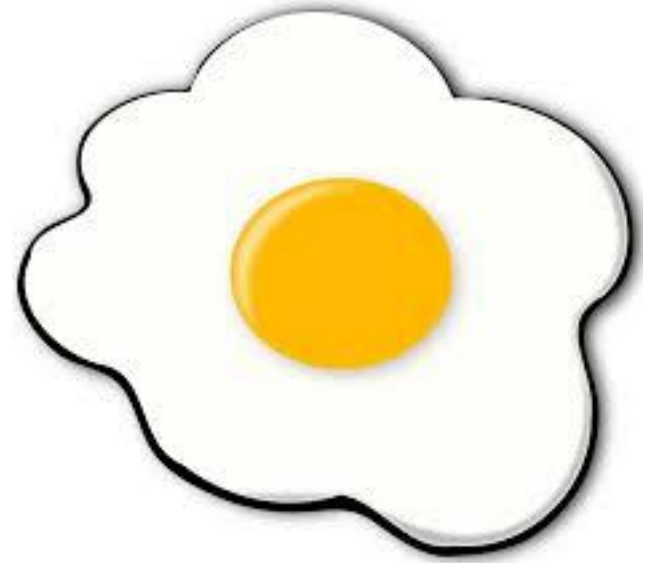
Histology: nests of large cells with **clear cytoplasm**
- “**fried egg appearance**” with central nuclei

Appearance: **homogenous** mass.

Tumor Marker: may see elevated placental ALP
and β -HCG

- NOT most reliable markers

Presentation: painless unilateral mass



Germ Cell Tumors

Yolk Sac Tumor:

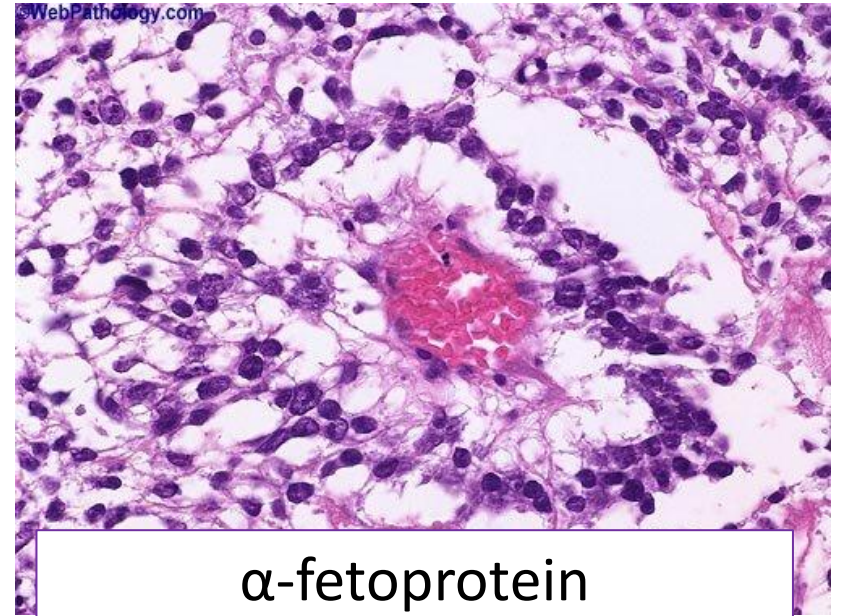
Age: children < 3 y/o

Histology: Schiller-Duval bodies resembling primitive glomeruli

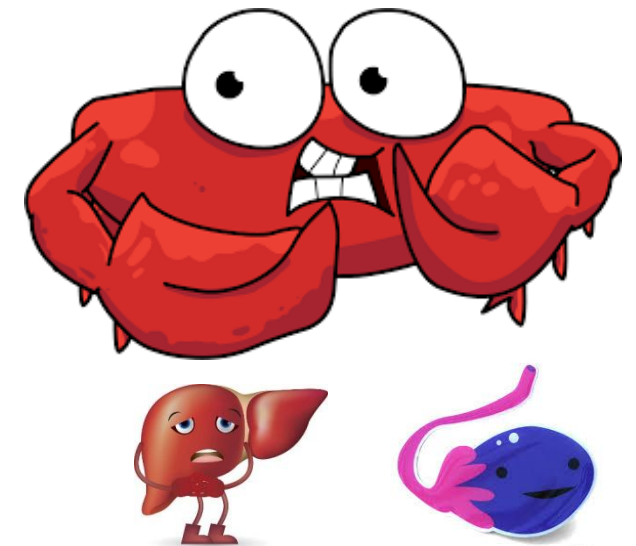
Appearance: yellow, mucinous

Tumor Marker: hallmark is increased **AFP**

Presentation: testicular mass in young child



α -fetoprotein



Germ Cell Tumors

Choriocarcinoma:

Age: young men

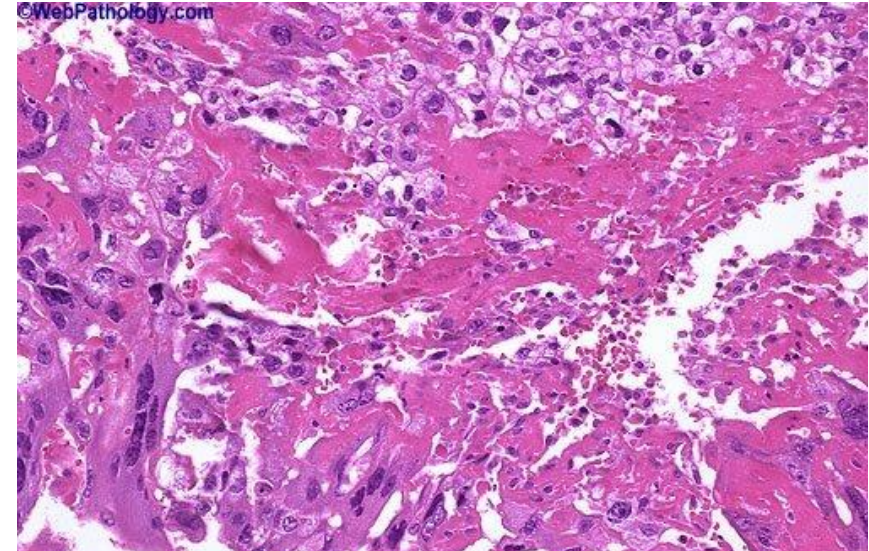
Histology: disordered **syncytiotrophoblasts** and **cytotrophoblasts**

Appearance: n/a

Tumor Marker: **β -hCG**

Presentation: testicular mass with **gynecomastia** and **hyperthyroid**; mets to the lungs

HcG mimics structure of TSH, LH, FSH



β -hCG

Germ Cell Tumors

Choriocarcinoma:

Age: young men

Histology: disordered **syncytiotrophoblasts**
cytotrophoblasts

Appearance: n/a

Tumor Marker: **BhCG**

Presentation: testicular mass with gynecomastia and hyperthyroid; **mets to the lungs**

HcG mimics structure of TSH, LH, FSH



Germ Cell Tumors

Teratoma:

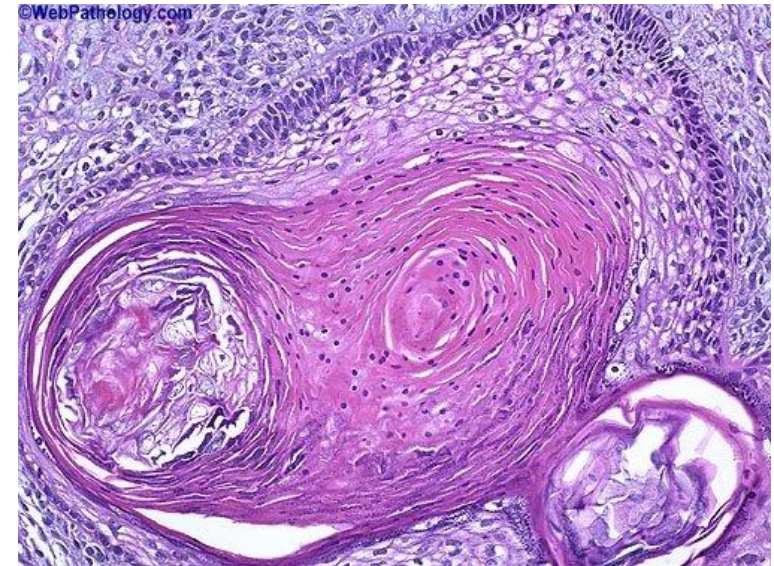
Age: young men or children (pure form in children)

Histology: cell types from all three germ layers

Appearance: large mass with **hair, muscle, neural tissue**

Tumor Marker: none

Malignant in adult males UNLIKE in adult females



Germ Cell Tumors

Embryonal Carcinoma:

Age: young men

Histology: glandular or papillary

Appearance: hemorrhagic mass with necrosis

Tumor Marker: sometimes increased AFP and BhCG

Presentation: painful unilateral mass



Germ Cell Tumors: Young lad with testicular mass PLUS

Seminoma

- homogenous
- "fried egg"** and clear nuclei

Yolk Sac

- children
- Schiller Duval Bodies
- AFP**

Choriocarcinoma

- cyto/syncytiotrophoblasts
- **Beta HcG** marker
- don't forget TSH, LH, FSH
- hematogenous spread

Teratoma

- three germ cell layers
- malignant** in men only

Embryonal

- painful**, necrotic mass

Non Germ Cell Tumors

- **Minority of** testicular tumors (~5%)

Non Germ Cell Tumors

Leydig Cell Tumor: Androgen and Estrogen producing

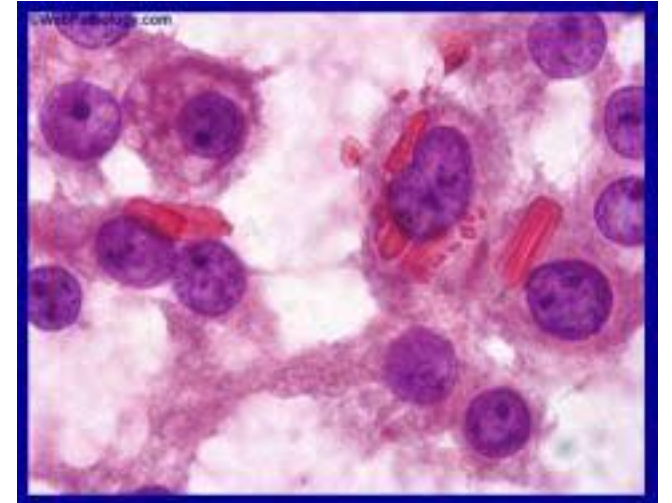
Age: young men

Histology: **Reinke crystals** (eosinophilic cytoplasmic inclusions)

Appearance: golden brown color

Tumor Marker: none

Presentation: **gynecomastia** and **early puberty**



Non Germ Cell Tumors

Sertoli Cell Tumor: benign and don't produce hormone

Testicular Lymphoma: testicular tumor of men >60. Usually bilateral NHL

Question Time:

25 year old chap comes in for evaluation of a painless right testicular mass. He also has complaints of weight loss, diaphoresis, palpitations and nervousness. Histological evaluation of his testicular mass is most likely to show:

- A) Clear cytoplasm with central nuclei
- B) Cells resembling primitive glomeruli
- C) Normal testicular histology
- D) Disordered cytotrophoblasts
- E) Eosinophilic cytoplasmic inclusions