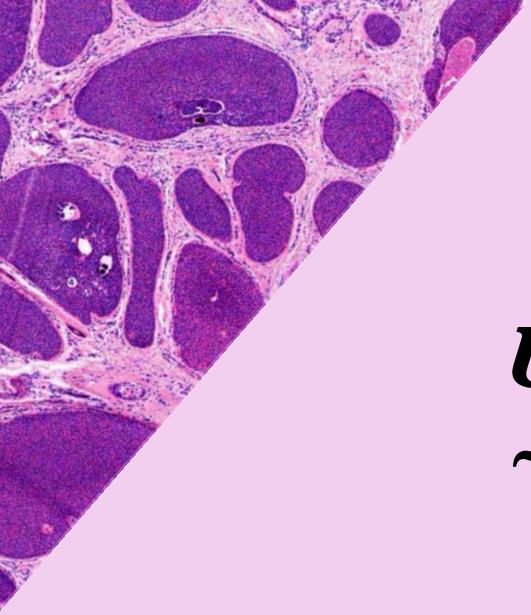
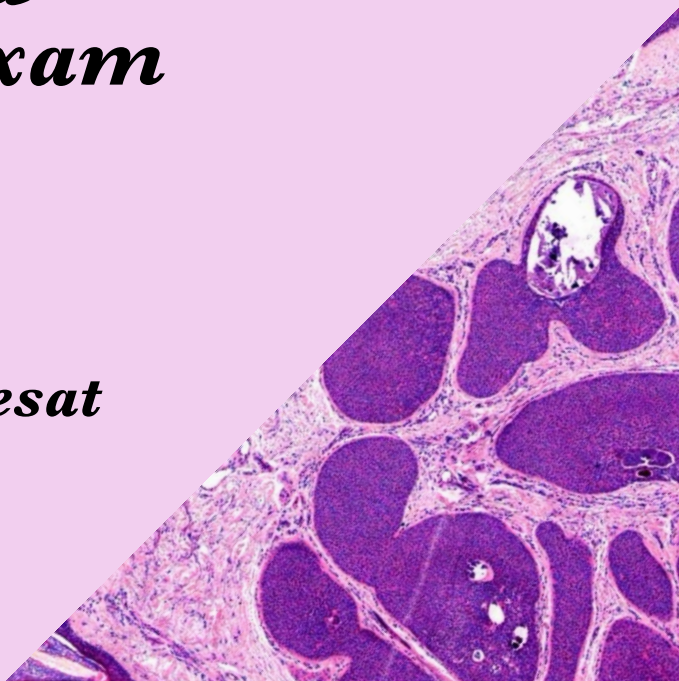


UGS Pathology Lab🔬
~ midterm exam

It's done by :
~ Reenas Al Khresat

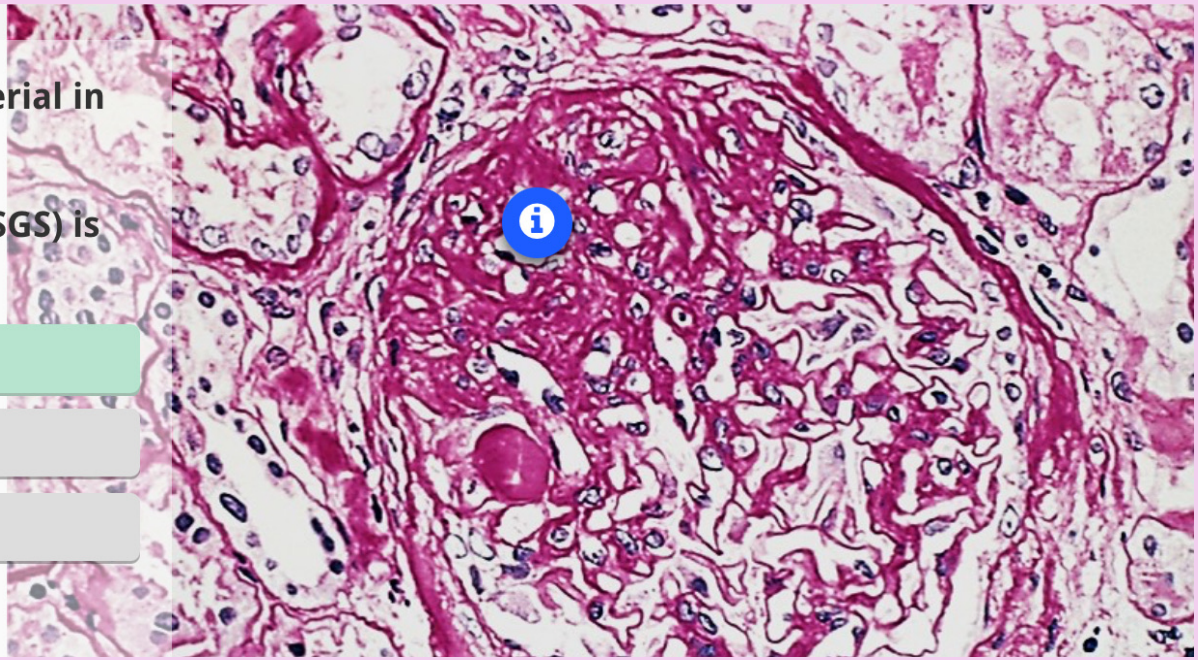


Dr. Nisreen's Material

The pink-colored material in this picture that is characterestic of this glomerular disease (FSGS) is composed of:

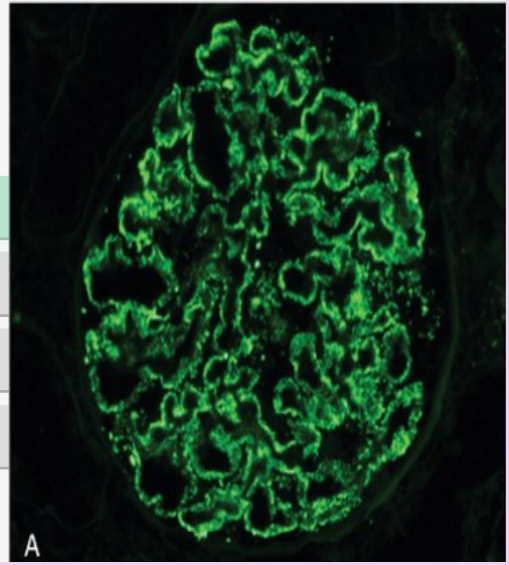
- ✔ Collagen +1
- Immunoglobulins
- Complements

Perfect!



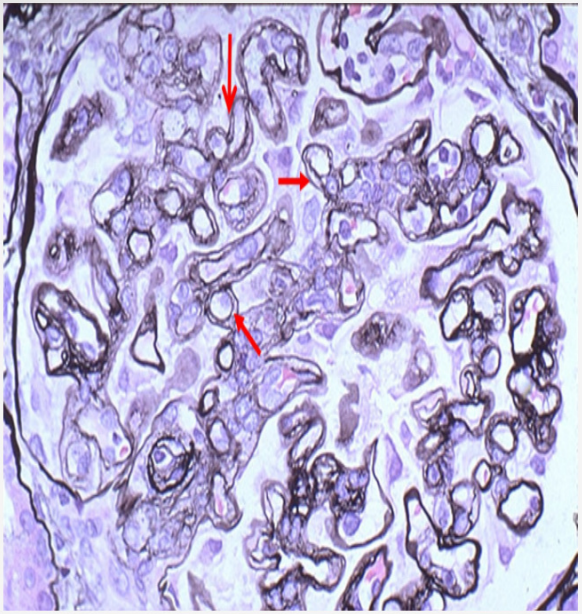
~ (FSGs) Focal segmental glomerulosclerosis

A 47 years-old woman who was diagnosed and treated for stomach cancer 3 years ago, is complaining of generalized edema. Her lab tests revealed nephrotic- range proteinuria. A renal biopsy was performed and showed difusse glomerular basement membrane thickening. This is a picture of the immunoflurescence test for IgG. Among the following, what is the most likely diagnosis?



- ✔ Membranous nephropathy
- Minimal change disease
- Normal renal tissue
- Post- infectious glomerulonephritis

Perfect!

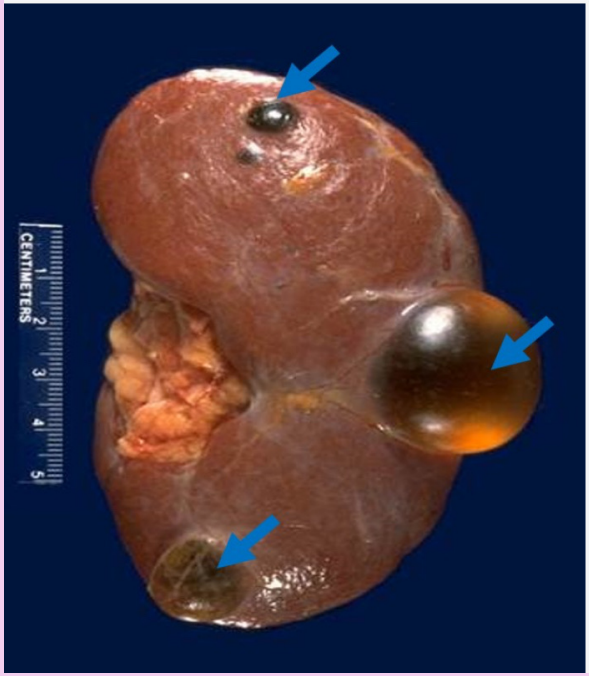


What do we call the glomerular abnormality (red arrows) seen in this picture of a Silver-stained, light microscopic section from a renal biopsy?

- Hump-shaped immune deposits
- ✔ Tram-track (double contour) of glomerular basement membranes
- Spike and dome pattern

Great!

1/1



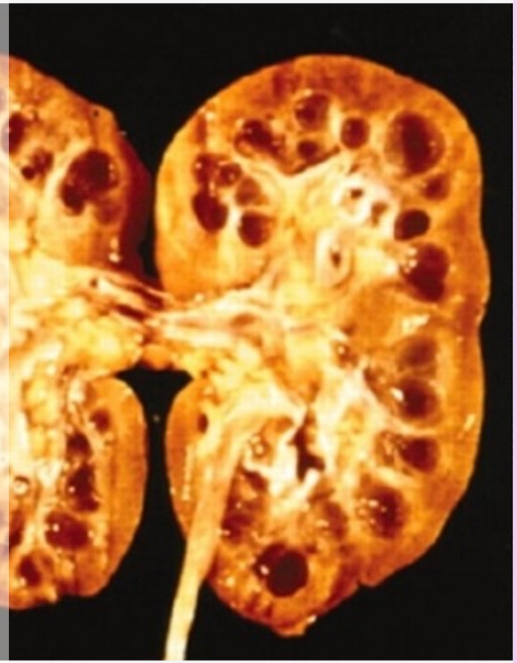
A healthy 34 years-old man had a general medical check up for a job interview. This picture (blue arrows) is representative of what he was told to have in his left kidney. His other tests including kidney function test and urine analysis were normal. He had normal blood pressure readings.

What is the most likely diagnosis?

- ✔ Simple renal cysts
- Adult polycystic kidney disease
- Medullary sponge kidney
- Hydronephrosis

Good job!

A 5 years-old boy was brought to the pediatrics clinic as his parents were concerned about his growth. They described that "he drinks a lot of water and urinates very frequently". They mentioned that some of his uncles had renal failure as children and young adults. Physical examination revealed high blood pressure. His blood tests show high creatinine and urea. This picture which is representative of what the child has shows many renal cysts at the corticomedullary junction. What is the correct diagnosis?



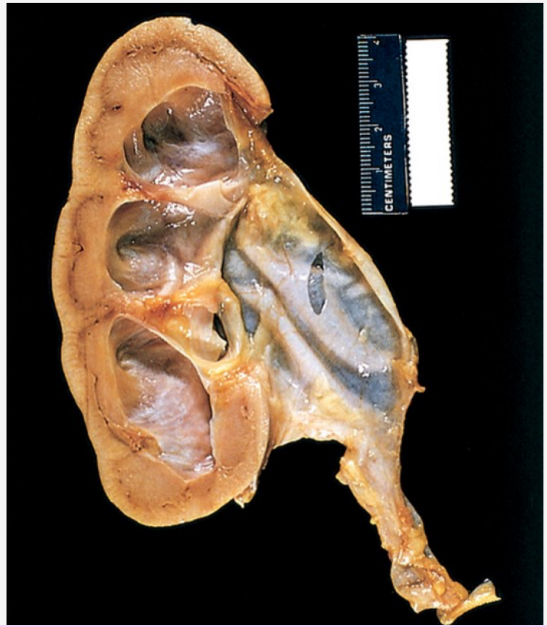
- CHildhood polycystic kidney disease
- Medullary sponge kidney
- ✔ Nephronophthisis Medullary cystic -Uremic disease

Perfect!

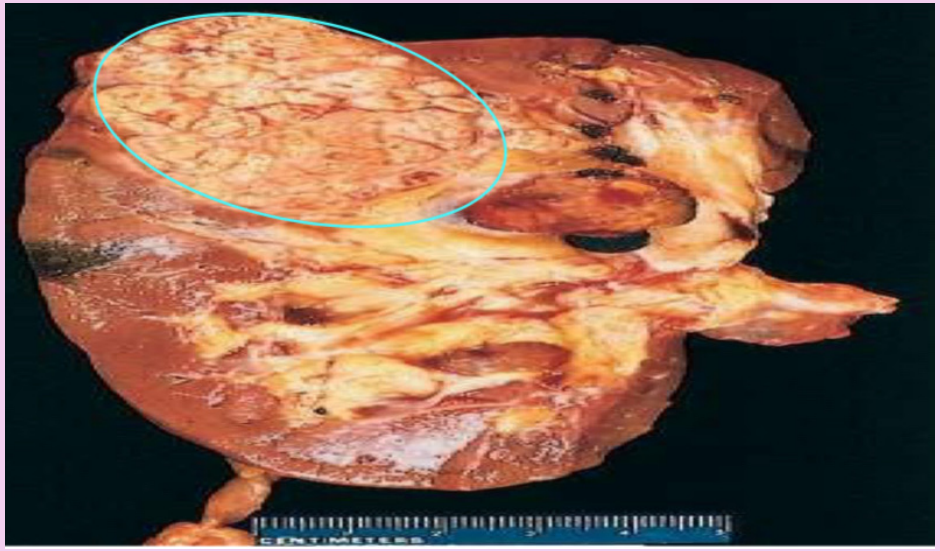
Fill in the missing words

Dilation of renal pelvis and calyces due to **urinary outflow obstrction/outflow obstruction/obstruction**, with accompanying **atrophy/thinning/loss/destruction** of kidney parenchyma. • The onset maybe **sudden/acute/rapid/fast** or **insidious/slow/chronic**

•Significance: if untreated, leads to renal



Clear cell renal carcinoma
Spherical tumor in the cortex of the kidney



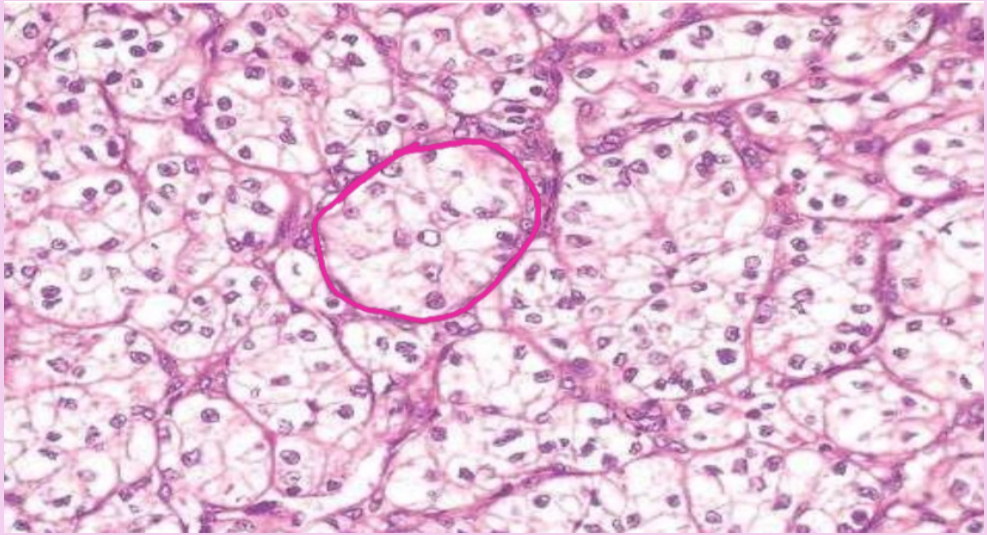
- Well demarcated margin

of the tumor However with progression of the tumor this demarcation might be lost due to evolvement of the invasion to the surrounding tissue

- The growth of the tumor include the invasion of :

1-the Cortical tissue
2-the kidney capsule
(stretched out because
of tumor growth)
3-Perinephric fat
4-adrenal gland Invasion can occur in all directions

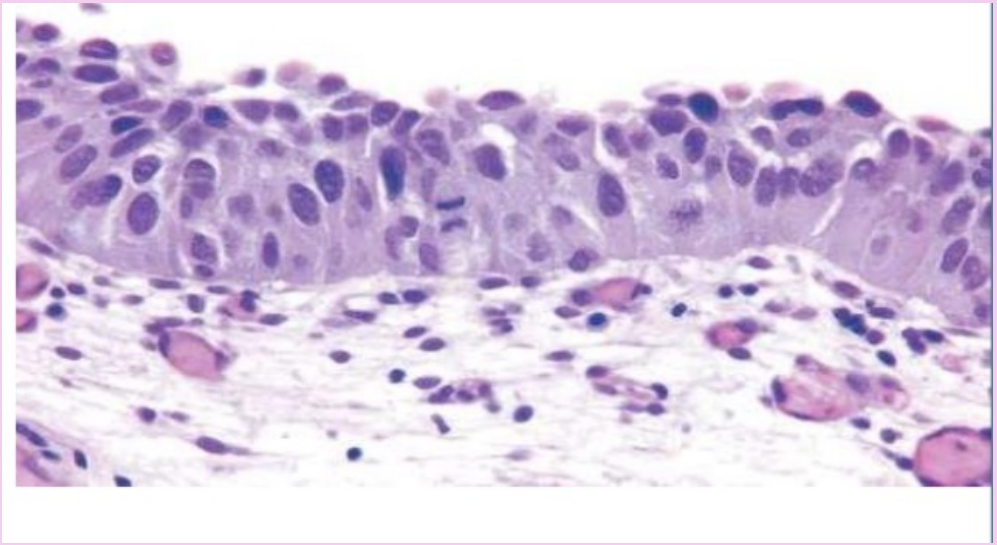
Clear cell renal carcinoma



- Relatively large due to abundant cytoplasm

- Abundant empty cytoplasm (in real life it isn't empty as it is filled with either glycogen or lipid but it is dissolved during processing)
So it appears as a clear cell
Island of the tumor are separated with delicate fibrous tissue
- When there is clear cells predominance it’s called a clear cells carcinoma, But sometimes there is a mixture with other type of tumor cells

Carcinoma in situ (CIS) with enlarged hyperchromatic nuclei and a mitotic figure

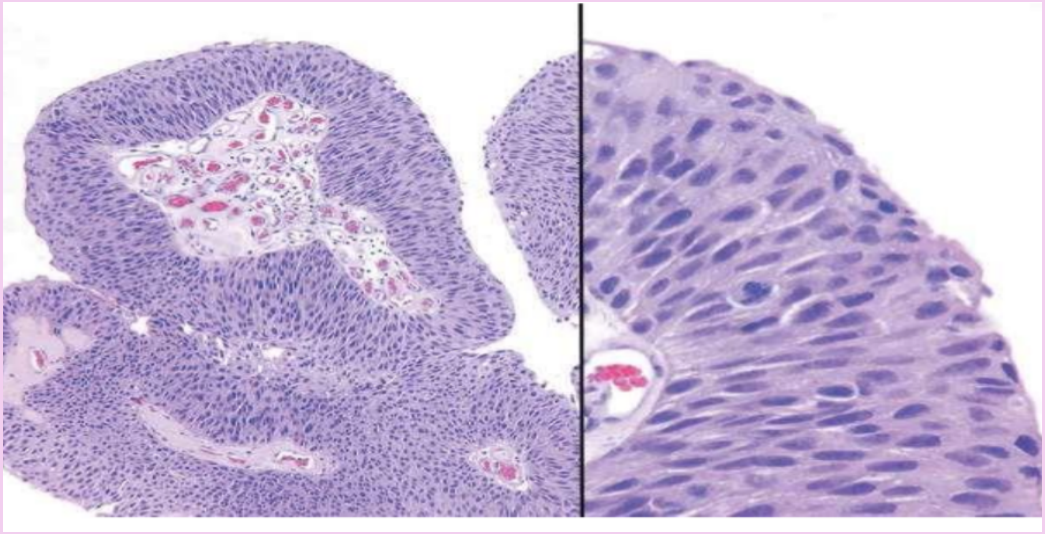


- **This is a urothelial or transitional epithelium , the urothelial show all nuclear changes involving the full layer (pleomorphic, hyperchromatic nuclei) .And this is the basic definition of CIS**
- **Normally the urothelial surface is larger with abundant cytoplasm showing maturation and we call it umbrella cells**

- **So you can notice the abnormal state here**
- **Why it's in situ?**

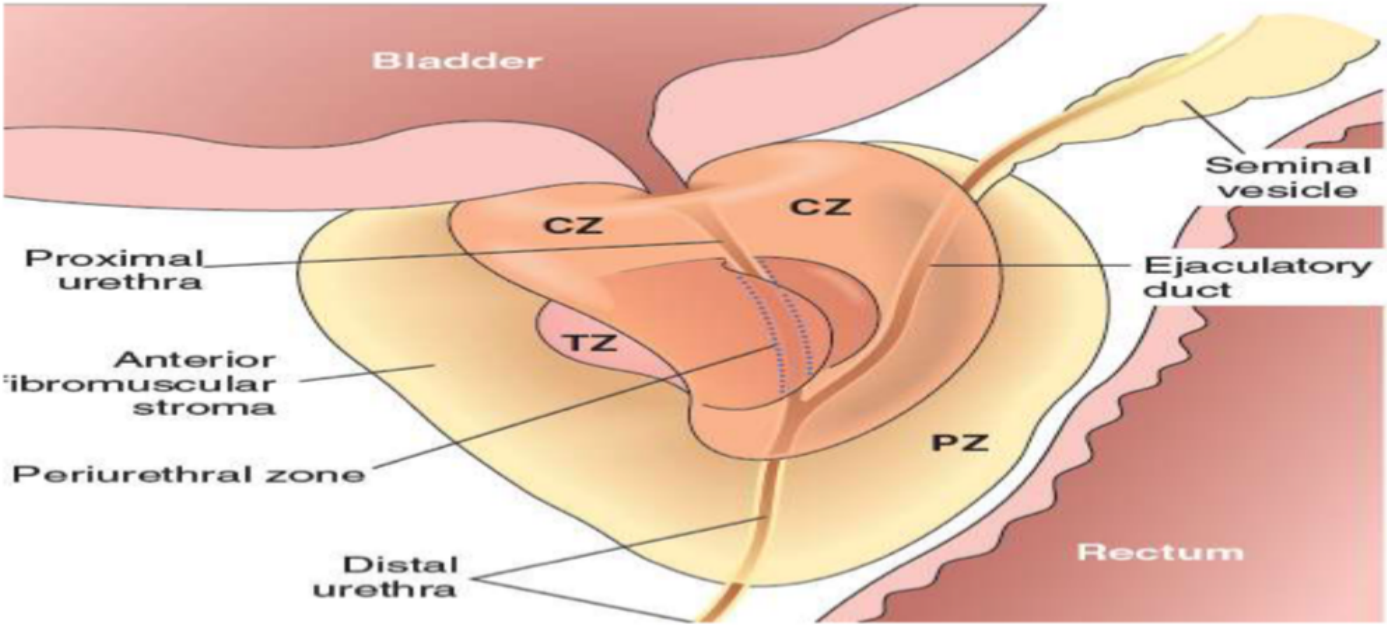
Because the basal membrane over which the
epithelium is lying is intact.
Thin flat line with No invasion

Noninvasive low-grade papillary urothelial carcinoma. Higher magnification (right) shows slightly irregular nuclei with scattered mitotic figures



- The core of papilli is formed by fibrous tissue which is vascularized
And if we look at the epithelium which show features of nuclear dysplasia you can see the tumor cells with mitosis and this depends on the grade of the tumor

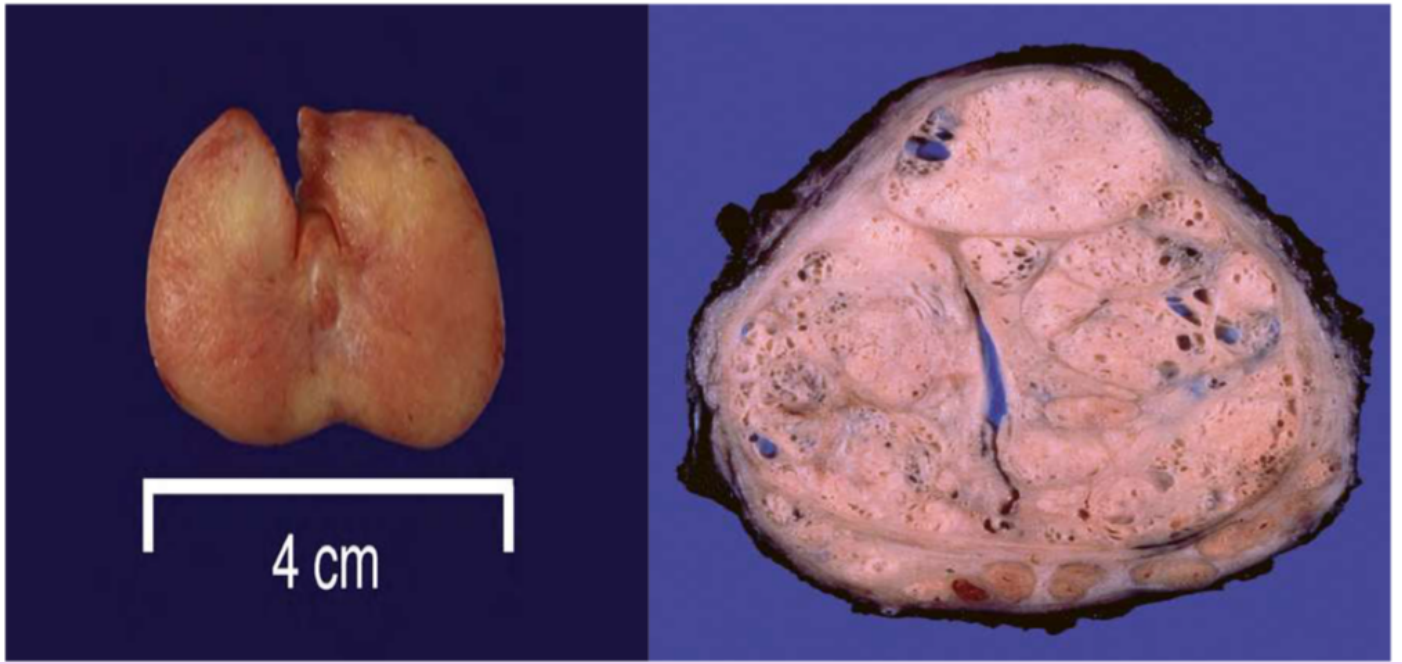
Prostate zones
central zone (CZ), a peripheral zone (PZ), a transitional zone (TZ), and a periurethral zone.



U can go back to slides if u don't remember about this disease

Benign nodular hyperplasia of prostate

Dr. Maha's Material

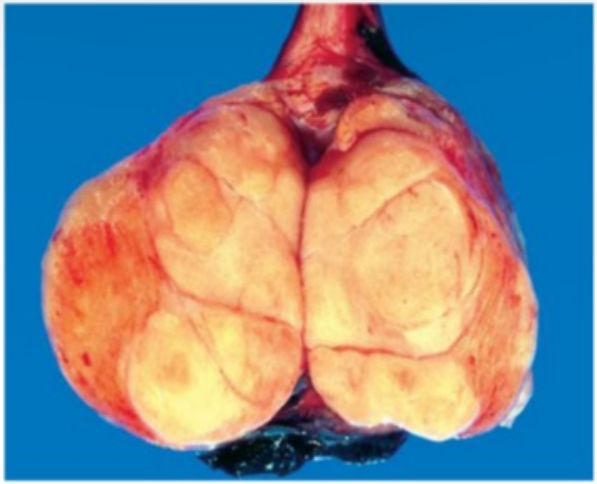


U can go back to slides if u don't remember about this disease

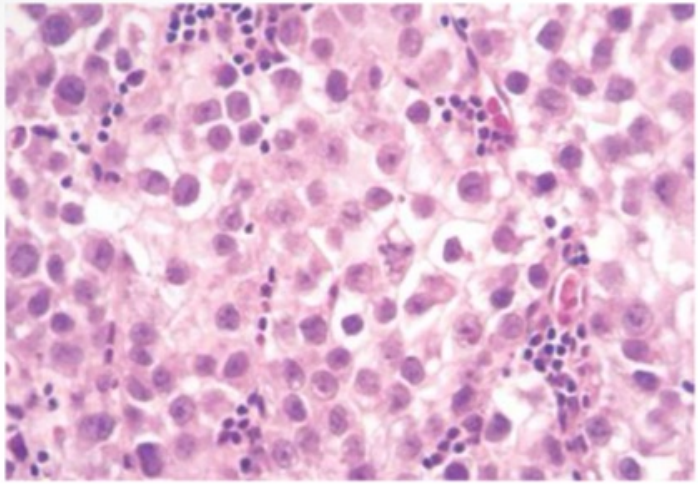
Prostate adenocarcinoma

Dr. Maha's Material

1. Seminoma

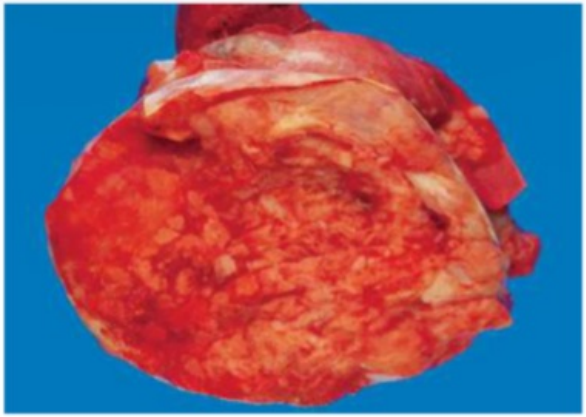


Seminoma :circumscribed, pale, fleshy, homogeneous mass; usually without hemorrhage or necrosis.

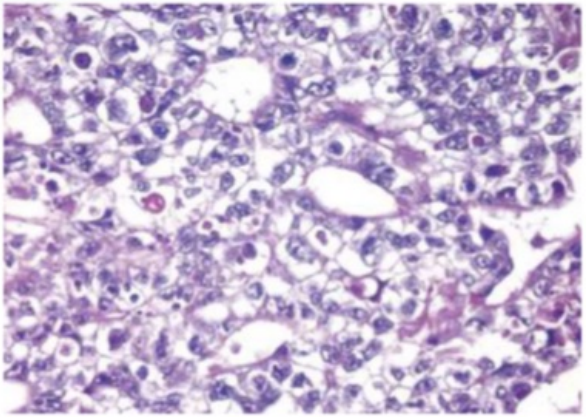


Microscopic examination reveals large cells with distinct cell borders, pale nuclei, prominent nucleoli, and lymphocytic infiltrate.

2. Embryonal carcinoma



ill-defined masses containing foci of **hemorrhage** and **necrosis**

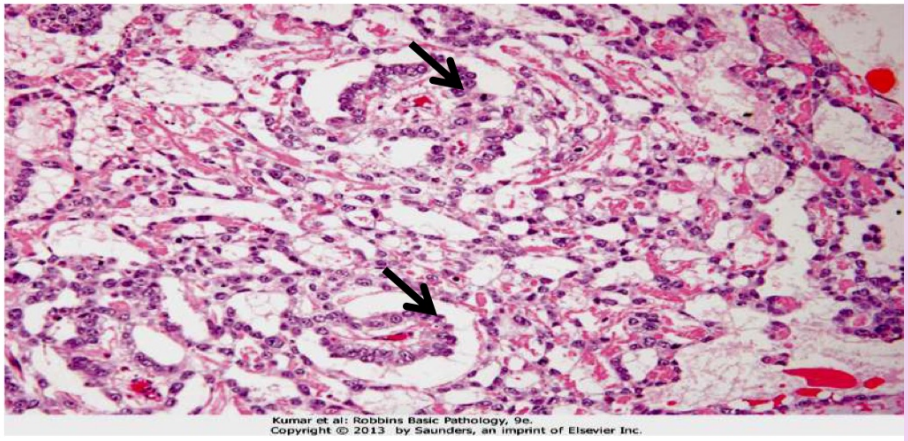


Sheets of undifferentiated cells & primitive gland -like structures. The nuclei are large and hyperchromatic with prominent nucleoli, and increased mitotic activity

- **20-30 years old**
- **More aggressive than seminoma**

Dr. Maha's Material

3. Yolk sac tumor (arrows: Schiller-Duvall bodies)

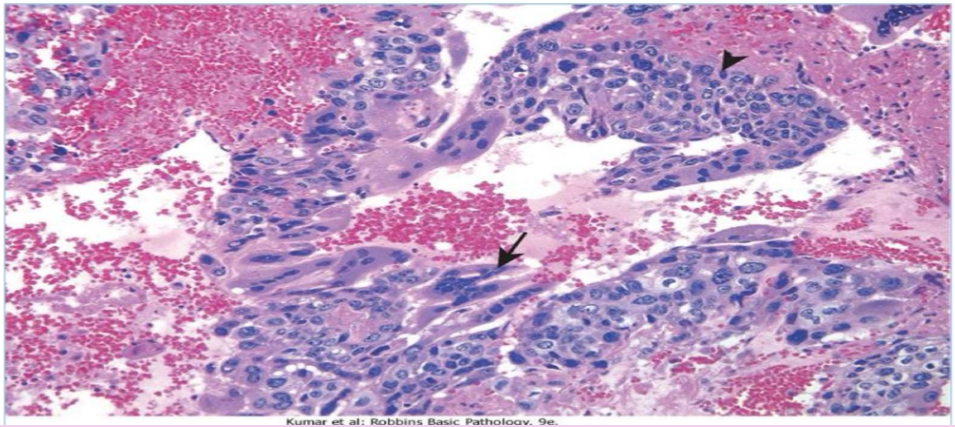


The most common primary testicular neoplasm in children <3
year
• Good prognosis in young children
• In adults, pure form of yolk sac tumors is rare and have a
worse prognosis
Histologically:
- The tumor is composed of low cuboidal to columnar epithelial cells forming Microcysts, Lacelike (reticular) patterns.
- A distinctive feature is the presence of structures resembling primitive glomeruli, called Schiller-Duvall bodies.
- Alpha- feto-protein (AFP) usually detected in serum
- The tumor is composed of low cuboidal to columnar epithelial cells forming
Microcysts, Lacelike (reticular) patterns.
- A distinctive feature is the presence of structures resembling primitive
glomeruli, called Schiller-Duvall bodies.
- Alpha- feto-protein (AFP) usually detected in serum

Dr. Maha's Material

Choriocarcinoma

Arrow: **Syncytiotrophoblast**
Arrow head: Cytotrophoblast



Macroscopically:

- **The primary tumors may be small even in patients with extensive metastatic disease.**
- **necrosis and hemorrhage are extremely common**

Microscopic examination:

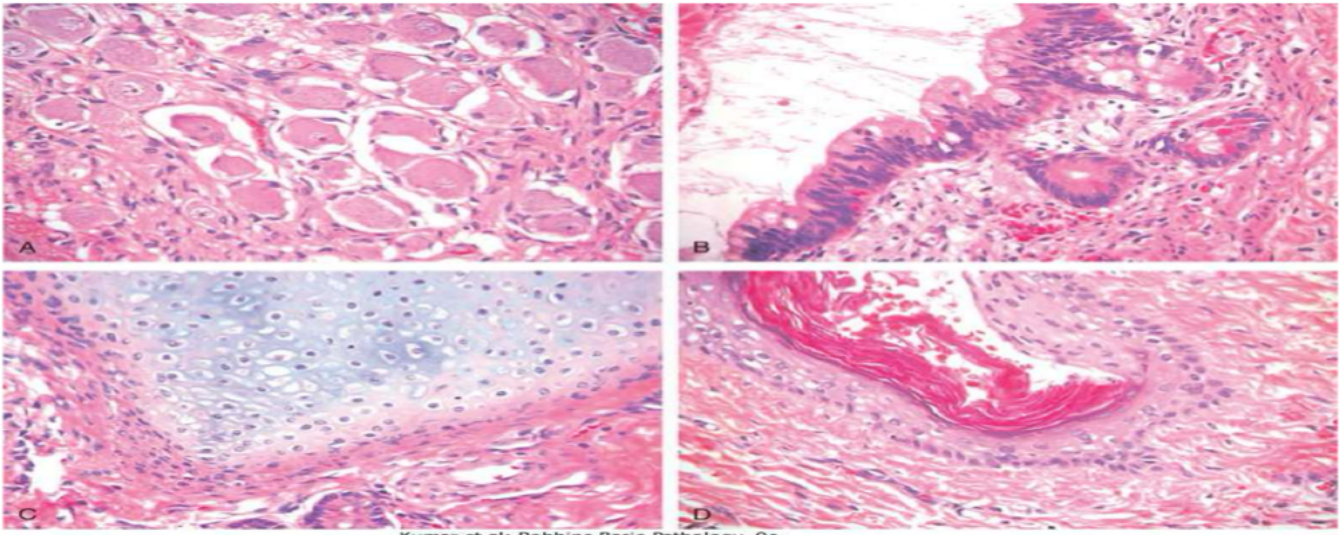
- **Syncytiotrophoblasts: large multinucleated cells with abundant eosinophilic vacuolated cytoplasm producing HCG.**
- **Cytotrophoblasts: polygonal cells with distinct borders and clear cytoplasm grow in cords or masses and have a single, fairly uniform nucleus**

Dr. Maha's Material

Teratoma
• The neoplastic germ cells differentiate along somatic cell lines
showing various cellular or organoid components
• Resonant of the normal derivatives of more than one germ layer.
• May affect all ages
In children
- Pure forms of teratoma are common being second in
frequency to yolk sac tumors
• In adults
- Pure teratomas are rare (3% of germ cell tumors).
- frequency of teratoma mixed with other germ cell tumors
is high

Grossly:
Firm masses and cysts with hair, cartilage, bone, and even teeth!
• Histologically:
1. Mature teratomas:
a heterogeneous collection of differentiated cells, such as neural tissue,
muscle bundles, islands of cartilage,
clusters of squamous epithelium, etc.
2. Immature teratomas:
- Contain fetal primitive tissue

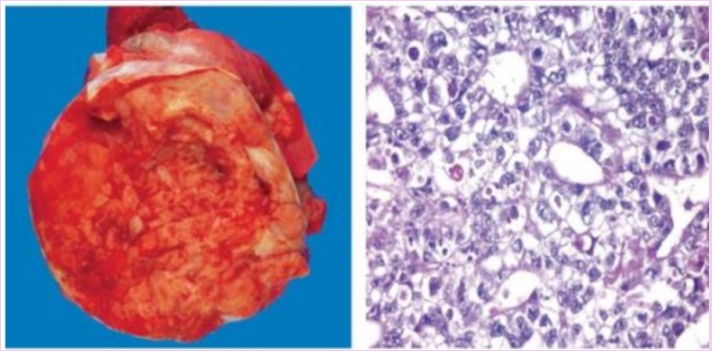
Teratoma



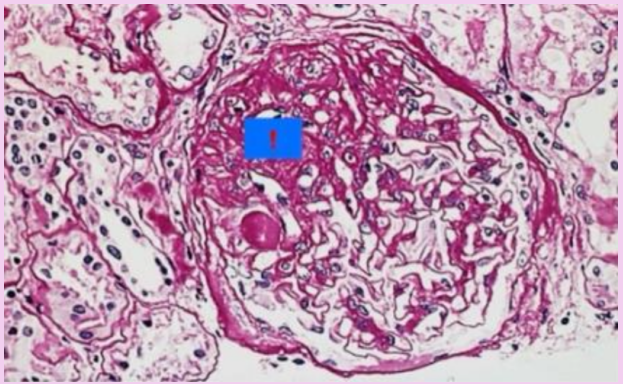
Kumar et al: Robbins Basic Pathology, 9e.

Past papers Question 📝

A 21 years-old man is found to have a large right testicular mass. He undergoes rightorchiectomy. The testis contians ill-defined masses with foci of hemorrhage and necrosis. Microscopic examination shows undifferentiated cells and primitive gland -like structures. What is the most likely diagnosis?
A. Embryonal carcinoma
B. Mature cystic teratoma
C. Seminoma
D. Medullary sponge kidney
Answer: A



The pink-colored material in this picture that is characterestic of this glomerular disease is composed of:
A. Immunoglobulins
B. Collagen (FSGS (Focal and Segmental Glomerulosclerosis))
C. Complements
D. Seminoma
Answer: B



Good luck