

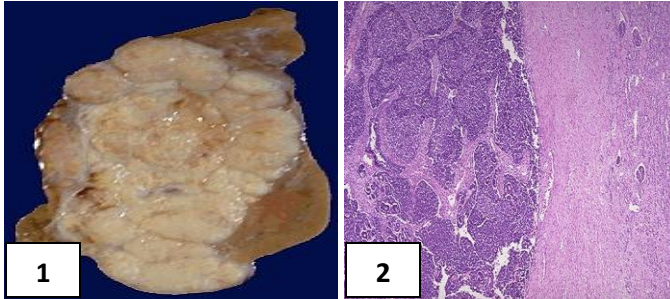


- Important tumors in kidneys, urinary bladder and prostate:

• **Kidneys:**

✓ Nephroblastoma (Wilm’s tumor) in children:

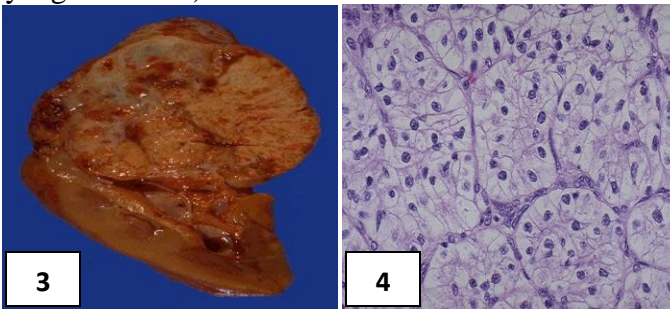
- ❖ It is a common intra-abdominal tumor occurring in children < 10 years of age.
- ❖ Occasionally bilateral (affecting both kidneys).
- ❖ It is a highly malignant tumor arising from mesoderm (renal blastema). At time of diagnosis, the tumor is already spread to the lungs!
- ❖ *Gross (image-1):* big tumor presenting as abdominal mass which extends through renal capsule.
- ❖ *Histologic features (image-2):*
 - Epithelial and mesenchymal tissue.
 - Primitive glomeruli and tubules.



- ❖ Excellent response when treated with a combination of nephrectomy, chemotherapy and radiotherapy.

✓ Renal cell carcinoma (adenocarcinoma of the kidney) in adults:

- ❖ Commonest renal malignancy in adults (90% of cases).
- ❖ Increased incidence with smoking and obesity.
- ❖ Most common in men 50-70 years old.
- ❖ Large bulging tumor at the upper renal pole.
- ❖ *Gross (image-3):* yellowish cut surface with cysts and hemorrhage. The tumor has sharp margins due to the formation of a pseudocapsule.
- ❖ *Histologic features (image-4):*
 - It is derived from renal tubular cells.
 - Presence of clear cells (clear cytoplasm because it contains glycogen and fat).



❖ *Spread:*

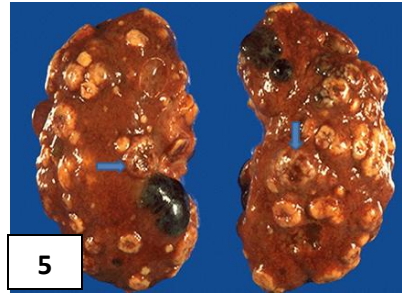
- **Local:** invading perinephric fat or pelvi-calyceal system.
- **Lymphatic:** para-aortic lymph nodes.
- **Blood:** invading renal veins and metastasizing to lungs and bones.

❖ *Prognosis:*

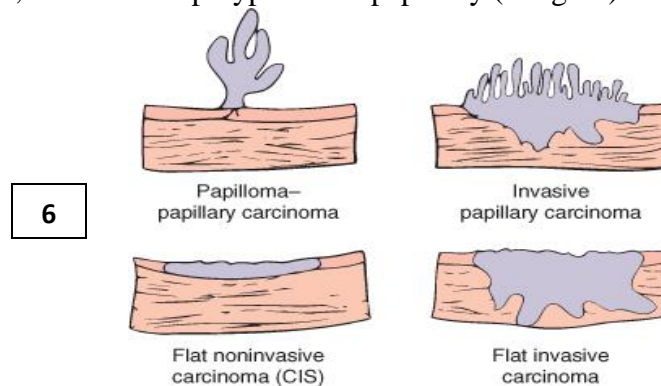
- Overall 5 year survival: 50%
- 70% if there is no metastasis.
- 15%-20% if renal vein is involved.



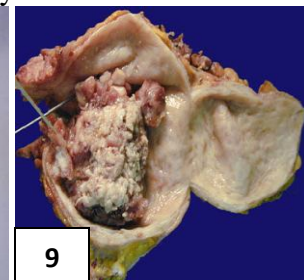
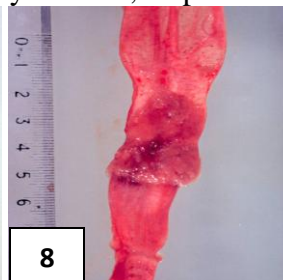
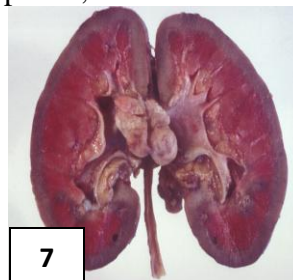
- ✓ Metastatic cancers in kidneys:
 - ❖ Image (5) shows nodular tumors with central umbilications.



- ✓ Transitional cell carcinoma of renal pelvis.
- **Urinary bladder:**
 - ✓ Transitional cell (urothelial) carcinoma (most common):
 - ❖ *Associated with:* Phenacetin, smoking, aniline dyes and cyclophosphamide.
 - ❖ Notice that the behavior of these tumors can change with time to become more malignant. Malignancy is preceded by dysplasia and carcinoma-in-situ.
 - ❖ Mostly affecting white males 50-70 years old.
 - ❖ Arising anywhere in the urinary tract (but especially in the base of the bladder)
 - ❖ Often, the tumor is polypoidal or papillary (image-6):



- ❖ If the tumor is benign it will be called “transitional papilloma” while if it is malignant it will be called “transitional carcinoma”.
- ❖ *These tumors present with:*
 - Hematuria.
 - Urinary infection and/or obstruction.
- ❖ Tumor cells exfoliate (shed) into urine, so cytological examination of urine can sometimes help in diagnosis.
- ❖ Images (7), (8) and (9) showing transitional cell carcinoma of renal pelvis, ureter and urinary bladder, respectively.



- ✓ Squamous cell carcinoma of the bladder (rare!):
 - ❖ *Risk factors:* Schistosoma hematobium infection (common in middle east), chronic cystitis, smoking and chronic nephrolethiasis.



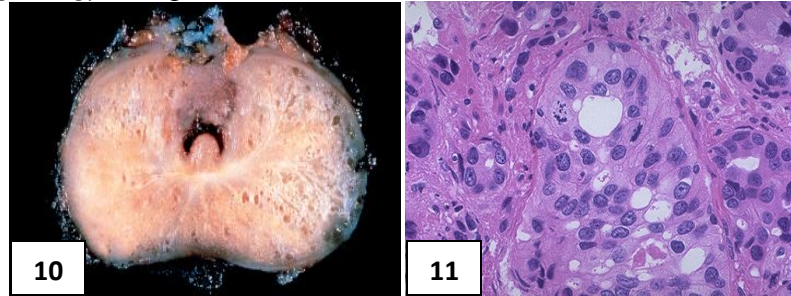
- **Prostate:** main causes of prostatic enlargement:

- ✓ Benign Prostatic Hyperplasia (BPH):

- ❖ Affecting most males around age of 50.
- ❖ Incidence and severity increase with age (75% by 70s).
- ❖ There will be hyperplasia of connective tissue and glands (prostate = 60-100 g instead of the normal 30 g).
- ❖ Involving more the central parts of the gland especially the median lobe.

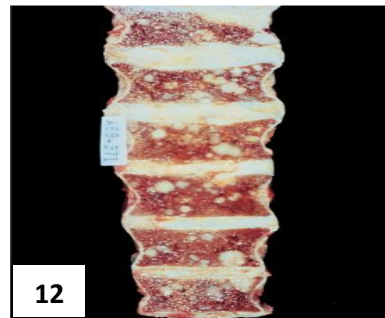
- ✓ Adenocarcinoma of prostate:

- ❖ It is the commonest male cancer.
- ❖ Family history increases the risk (X2 or X3).
- ❖ Common in elderly (60s to 80s) or younger patients with family history.
- ❖ *Risk factors:* age, race, family history, hormone levels and environmental factors (increased consumption of fats!).
- ❖ The carcinoma is arising from Prostatic Intraepithelial Neoplasia (PIN) and is androgen-dependent.
- ❖ *Morphology:* images (10) and (11):



- ❖ *Spread:*

- **Local:** seminal vesicles and base of bladder.
- **Lymphatic:** spread is common and often before spread through blood going initially to obturator lymph nodes.
- **Blood (image-12):** Lumbar spine, proximal femur, pelvis, thoracic spine and ribs.



- ❖ *Markers:*

- Prostate Specific Antigen (PSA).
- Prostatic acid phosphatase.