الكلية : الطب

القسم او الفرع : الامراض والطب العدلي

المرحلة: الرابعة

أستاذ المادة : امراض

اسم المادة بالغة العربية : علم الامراض النسيجي

سم المادة باللغة الإنكليزية ا:pathology

اسم المحاضرة الأولى باللغة العربية: امراض الجهاز البولي/ المحاضرة الاولى

اسم المحاضرة الأولى باللغة الإنكليزية : pathology of renal system

Classification of renal diseases

Kidney is a complex & multi-functioning organ, its complex

Diseases are divided in to:

- 1) Glomerular diseases (us. Immunological injury).
- 2) Vascular diseases (HT, vasculitis…)
- 3) Tubulointerstitial diseases (drugs, toxins, infection…)
- In early stages these diseases could be separated on clinical and morphological grounds but later on all components will be involved ……leading to End Stage Renal Disease (ESRD): - Small contracted kidney, obliterated glomeruli, atrophic tubular, fibrosis & vascular changes.

Azotemia: elevated urea & creatinine (renal, pre-renal and post-renal causes), when it becomes associated with chronic signs & symptoms: Uremia.

CONGENITAL ANOMALIES OF THE KIDNEY

Agenesis & hypoplasia:

- Unilateral or bilateral
- May be associated with other congenital anomalies
- May lead to CRF in childhood.

Ectopic kidney & horseshoe kidney:

Usually located lower than normal, often at pelvic brim

Main complications are obstructive uropathy & stones formation.

CYSTIC DISEASES OF THE KIDNEY

Heterogeneous group of hereditary, developmental & acquired disorders that include:

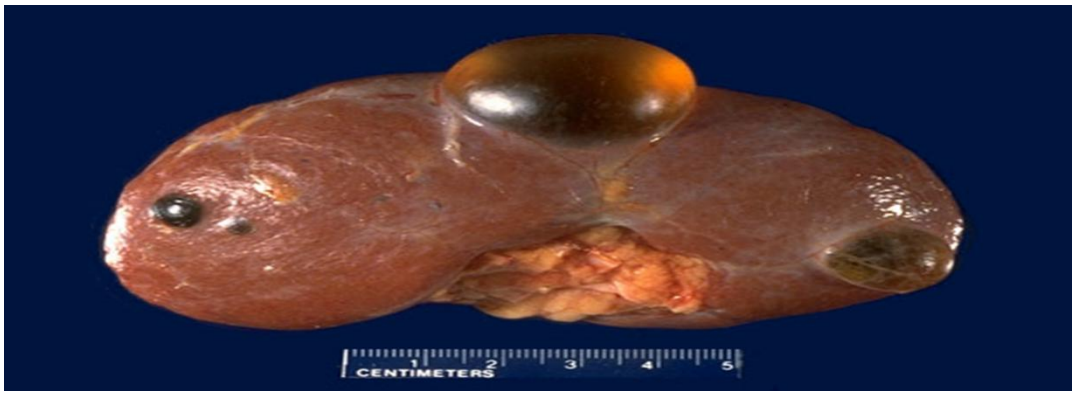
- Simple renal cyst(s).
- Cystic renal dysplasia
- Polycystic kidney diseases (adult & childhood types)
- Medullary sponge kidney.
- Acquired (dialysis associated) cystic disease

Main clinical presentations of these diseases are:

-Pain, hemorrhage and mass (that may be confused with tumors). Some are major causes of CRF

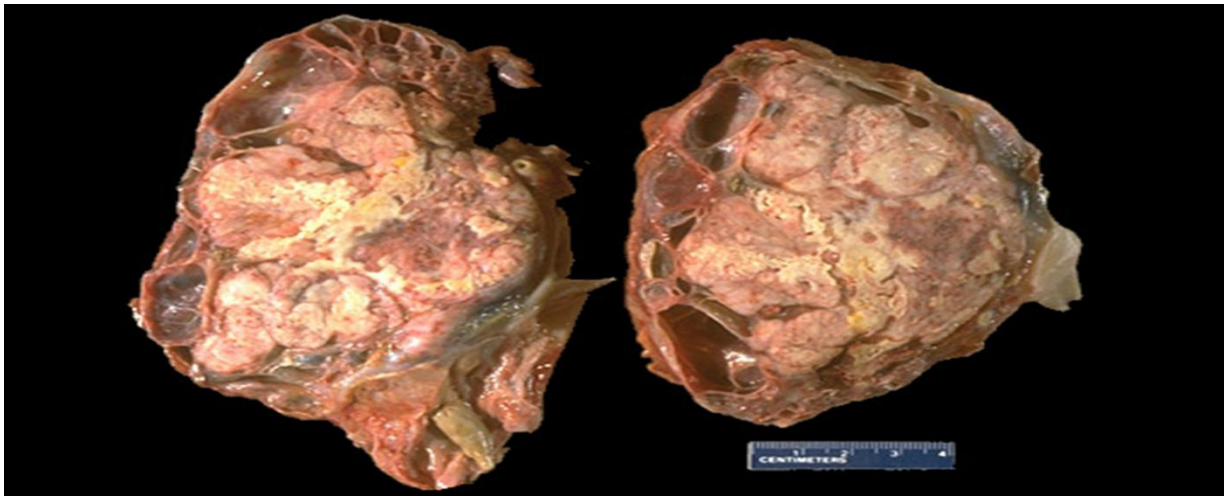
SIMPLE RENAL CYST(S)

Single or multiple cortical cysts 1-5 cm in size. Common postmortem finding, usually of no clinical significance + symptoms of infection, hemorrhage, but the main importance is to differentiate them from tumors.



ACQUIRED "dialysis associated" CYSTIC DISEASE

Numerous cortical & medullary cysts in patients with CRF who have undergone long term dialysis. Usually asymptomatic but sometimes patients got hematuria. The main complication is development of renal cell carcinoma in the cyst wall (~ 7 % over 10 yrs).



ADULT POLYCYSTIC KIDNEY DISEASE

- Multiple expanding cysts in both kidneys that eventually destroy the intervening parenchyma.
- Autosomal dominant dis. (1 per 500-1000 live births) responsible for about 10% of CRF.
- Presentation is delayed up to 4th decade.
- Mutations in 3 different genes (PKD1(90%), 2 or 3). that encode for Polycystin proteins which act on cell-cell & cell-matrix adhesion, the defected new proteins will result in formation of cysts that destroy the kidney parenchyma.

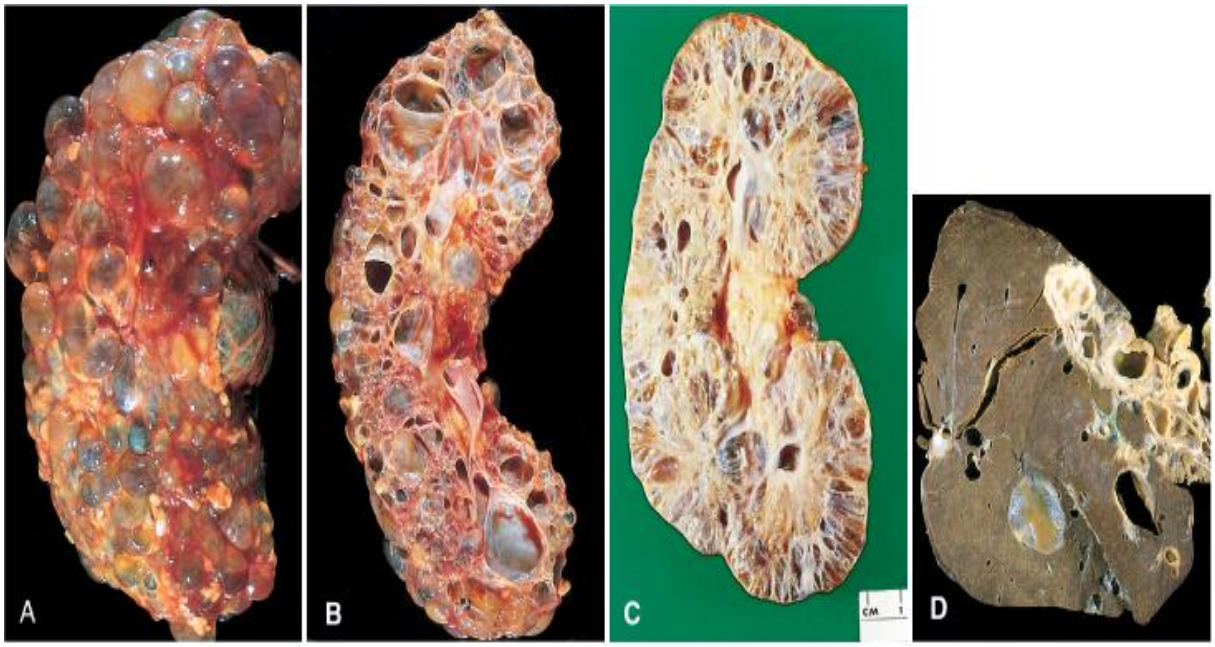
Morphology of APKD

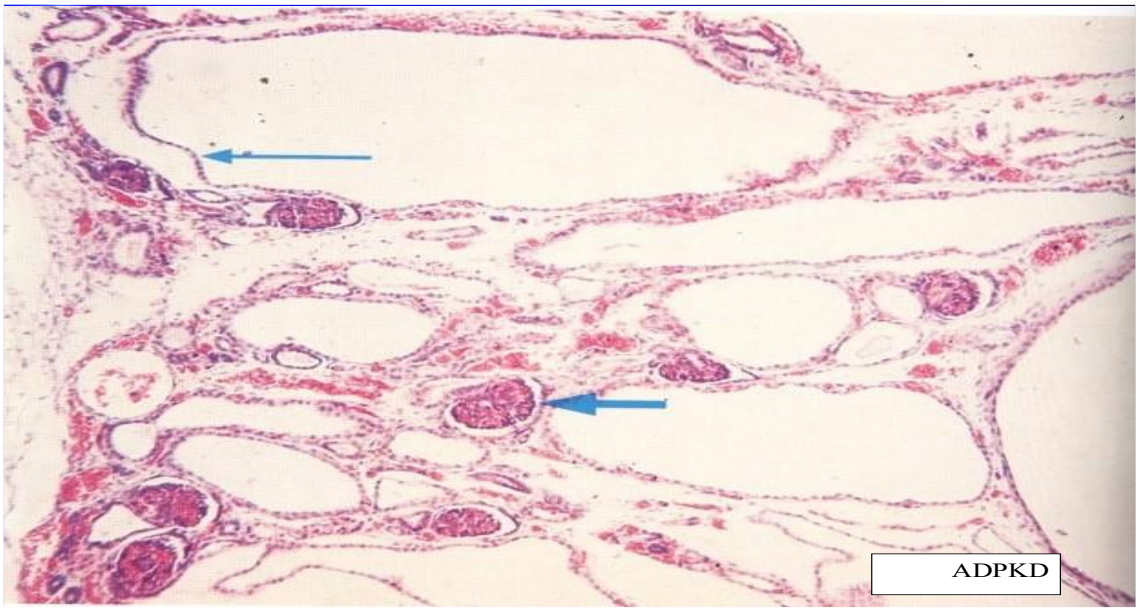
-Bilateral markedly enlarged kidneys (up to 4 Kg!)

-Numerous cysts up to 3-4 cm in diameter, containing clear or

hemorrhagic fluid.

- **Microscope**: Cysts of variable lining + some functioning nephrons in between.
- Clinical features: It of variable courses:
  - Gradual onset of CRF (5% by age 40 y…95% by 70y).
  - Flank pain or dragging sensation. Intermittent gross hematuria + clot and renal colic.
  - Hypertension (75%) & UTI.
  - Berry aneurysms in 10-30% due to altered expression of polycystin in vascular smooth muscle, (causing sub-arachnoid hemorrhage … death in 5-10% of APCKD).
  - Liver cysts of biliary lining in 40%.

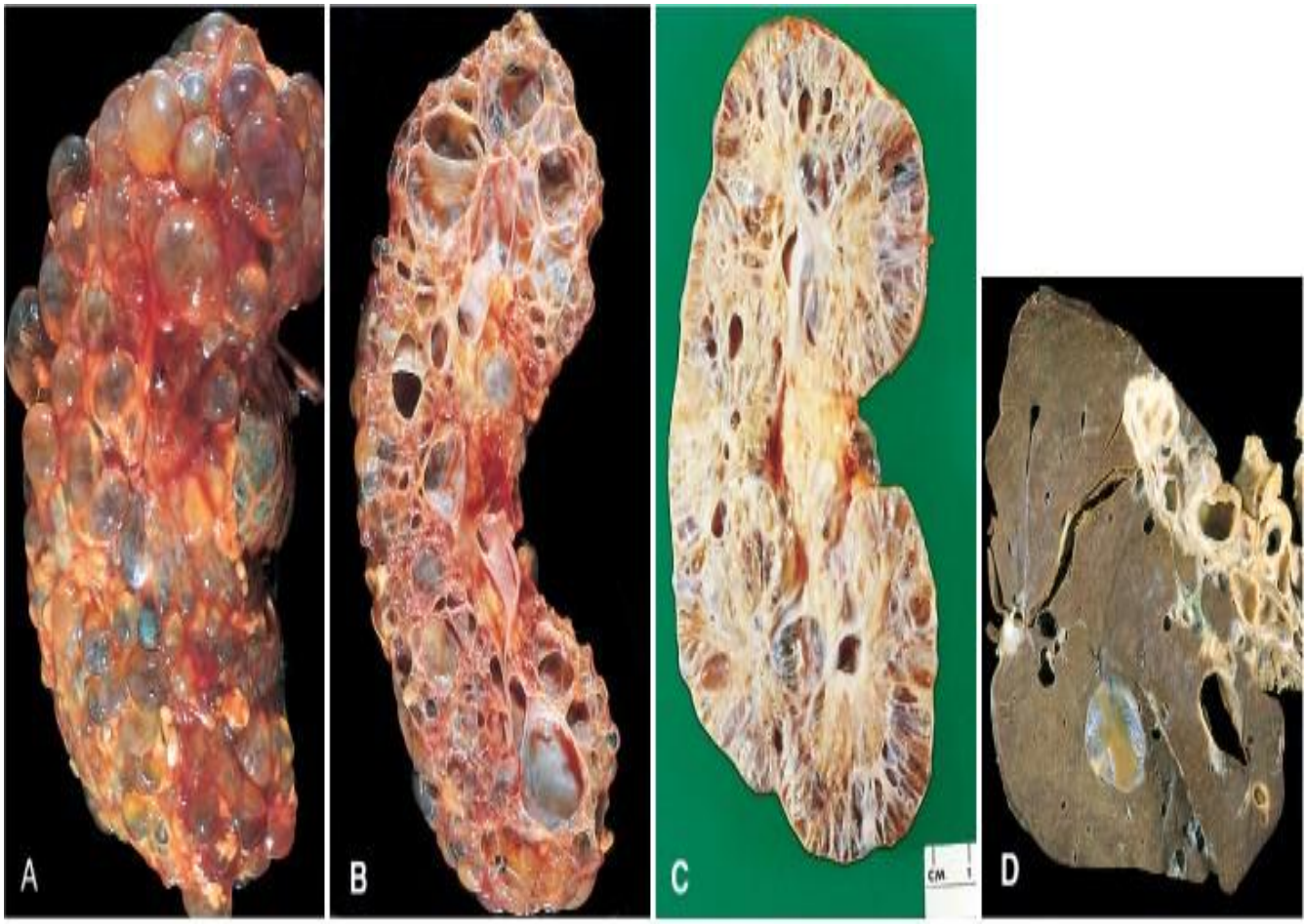




CHILDHOOD POLYCYSTIC KIDNEY DISEASE

- Autosomal recessive disease.
- Presented very early & eventually causes CRF.

- Smooth kidney surface with numerous small cysts as well as dilated channels perpendicular to cortical surface lined by cuboidal cells (of collecting tubules origin), while ADPKD: variable lining because it arises from tubules along the nephron (from tubules… to collecting ducts).
- Nearly all cases have liver cysts.
- Older children who have milder disease may develop congenital hepatic fibrosis.



Cystic renal dysplasia:

-It is a sporadic disorder due to metanephric differentiation.

-Histologically:

Characterized by persistence of abnormal structures in the kidney (loose mesenchymal tissue, cartilage and immature ductuli's).

-Unilateral or bilateral and it is almost always cystic.

-Unilateral: asymptomatic or mass…. good prognosis.

- If bilateral: CRF