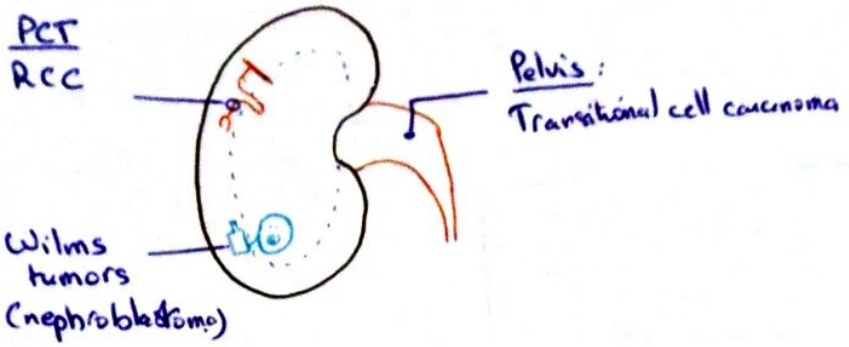
Further Readings: Renal pathology, renal tumors

* Pathology secrets

3 most common renal tumors:

1. RCC: Renal Cell Carcinoma
2. Wilms tumors or nephroblastoma in children
3. Pelvis: Transitional cell carcinoma



Renal cell carcinoma: the most common

RCC 3% adult ~~tumors~~ cancers

3rd urologic cancer (Prostate, bladder then RCC) + ~~Gene~~ chromosom 3

3:1 ♂ to ♀ ratio

onset > 50 y

RCC: How common it is? ↑

Familial and genes

Gross features

Microscopic

Clinical signs and sm

Paraneoplastic Sd ⟶ add amyloidosis

5 y survival

* Genes

RCC

Sporadic (95%)

chr 03 3p25

Loss of ① allele of

VHL: tumor suppressor gen

found in 98% cases

VHL gene is deleted in

Von Hippel Lindau patients

⟶ predisposit° to RCC.

① allele inherited ⟶ the 2nd Somatic mutation

germinal mutation

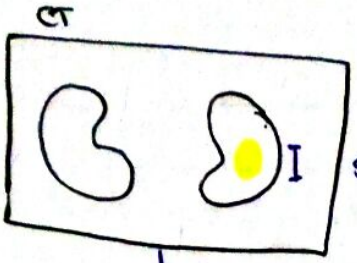
Familial 05%

RCC

Clear cell — A.D

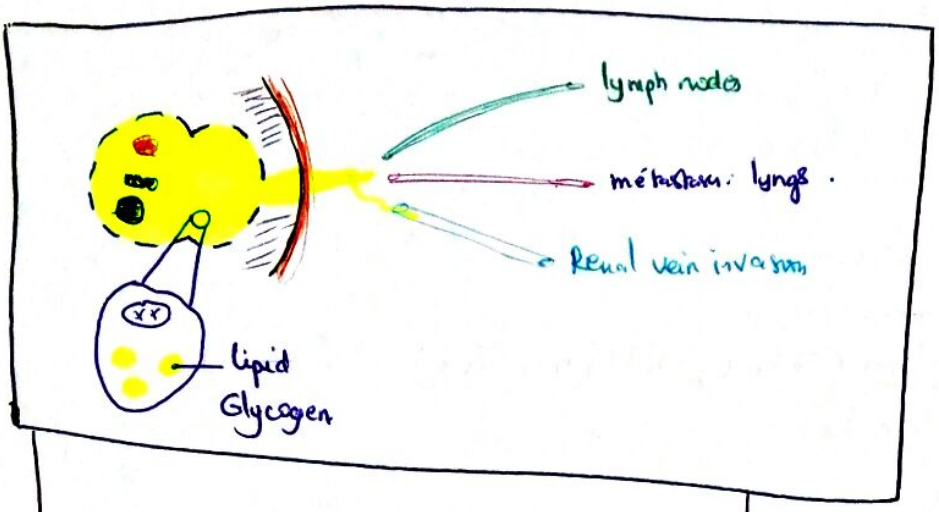
Papillary — hereditary multifocal

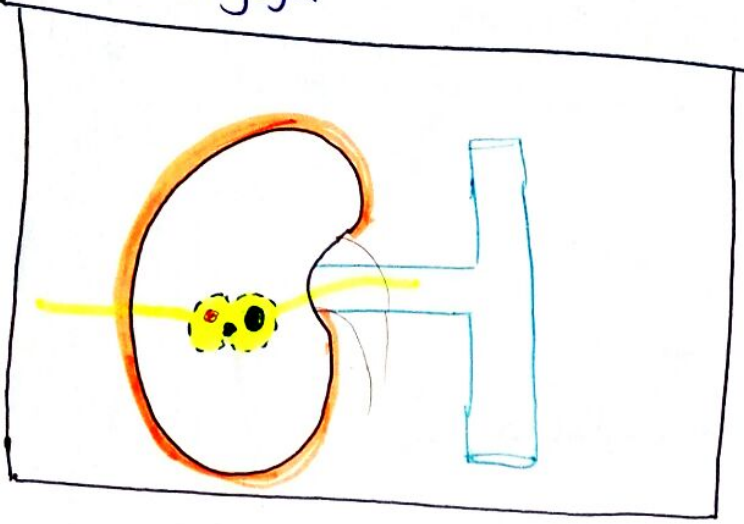
Gross features :



Size : 2 - 20 cm

↓ Surgery





Size : 2 - 20 cm

Partially encapulated

Lobulated

Hemorrhage, necrosis, cystic degeneration

Invasion : renal parenchyma
renal capsule
peri renal fat
surrounding tissues, adrenal
Renal veins

yellow on cross section :
- histo : clear cells containing lipids and glycogen

Microscopic types : Clear cell carcinoma 70%
papillary carcinoma 15%
chromophobe carcinoma 5%

Renal cell carcinoma

Kidney ♂, 60-70 y
Cortex
Tubular epithelium

Risk factors:

Hemodialyse : polykystic disease as a complicat° of chronic dialysis
HTA
Tabac
obesity
Solvants... profession

Renal Cell Carcinoma :

3 most common

Clear cell carcinoma 65%
Cells with clear cytoplasm
Sporadic : most
familial : VHL disease (AD)
ch 03 p 25
VHL Tumor supp inactivated.

Papillary renal cell Carcinoma 10-15%
Multifocal, bilateral
Sporadic vs Familial
MET proto-oncogen 7q31
MET gene → Tyrosine Kinase Receptor for hepatocyte GF
MET proto oncogen activated

Chromophobe renal cell Carcinoma. (5%)
Collecting ducts
Intercalated cells
Multiple losses in entire chromosomes (1, 2, 6, 10, 13, 17, 21)
chromophobe chromosomes :

- Clear cell carcinoma
Cells with clear cytoplasm

Sporadic ++ :
VHL gene involved

familial : VHL mutat°
VHL disease ch 03 p 25

VHL disease

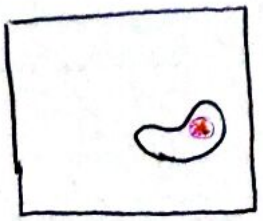
ch 03 p 25
AD ① germline mutation inherited
② : Somatic mutation
} → loss of both copies → CCC

- VHL → VHL protein ⊱ HIFs
XVHL → X VHL protein → ↑ HIFs, transcript° factors → ↑ VEGF : angiogenesis

Robbins basics pathology

OncoCytoma :

Cyt
- Ct Collecting tubule intercalate cells
- CT Center Stellate scar



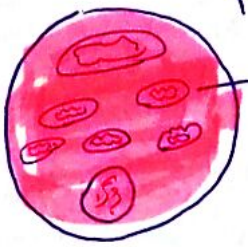
Collecting ducts → intracalate cells ——→ oncocytoma benign tumor.

genetic changes

chr 1
14
y

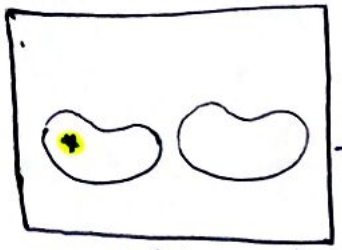
Histology :

Granular cytoplasm



Plethora of mitochondrie

eosinophilic granular cytoplasm



CT: Stellate central Scan

Clinical
↓
Risk of spontaneous hemorrhage ≈ RCC
→ histology
nephrectomy

Plethora of mitochondria

OncoCytoma

Cyt
- CT : Collecting tubules (intercalate cells)
- CT Center Stellar scar

Oncocyte : ¢ active avec pleins de mitochondries

Urothelial carcinomas of renal pelvis → Transitional cell