Nephrolithiasis

- Also called as Renal Calculi as Urolithiasis
- More common in male 3 times more than female
- In Care form any where Kidney. Bladder. Urethra. Ureter.

Ethiopathogenesis ~ Type of stone

Water - Solvent
Particles - Solute

Decreased
Increased
→ In Urine

Too concentrated
↓
Supersaturated
↓
Solutes precipitates → Crystals

1) Calcium stones

a) Calcium Oxalate
- Black or Dark Brown
- Radio opaque on x ray
- Formed in acid Urine
- Envelope shaped

b) Calcium Phosphate
- Dirty White
- Radio opaque on xray
- Formed in Alkaline Urine
- Amorphous

Risk Factors

1) For Calcium stones → Hypercalcemia
- Increased GIT absorption
- ↑ Primary Hyperparathyroidism

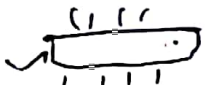
Hypercalciuria
↓
Impaired Renal tubular reabsorption

2) For oxalate stone
→ Defect in liver metabolism
→ Diet heavy in Rhubarb, spinach, chocolate, Nuts, Beer

2) Uric Acid stones
→ Red Brown
→ Translucent
→ Diamond shape or Rhomboid shape

Risk Factors → Diet Rich in Purine. Shellfish, Anchovy, Read meat, Organ Meat.
→ Causes Crouty arthritis.

3) Struvite stones
- Infection stones, Triple phorphate stones.
→ Made up of Magnesium, Ammonium, Phorphate.



Urease
Bacteria Proteus. Urea + Ammonia → Alkaline (Precipitation).

→ Staghorn stones,
→ Dirty white, Radio opaque. , Coffee lid appearance.
Risk factors → UTI, Vesicoureteral reflux.

4) Cystine stones → Amino acid.
- Yellow or light Pink
- Radio opaque.
- Hexagonal.

5) Xanthine → By product of Purine Breakdown.
- Red Brown, Translucent

C/F : Dull Hards Pain, Renal Colic, Sharp pain. conbtal.
Investigation → May KUB, CT, USG, Urinalysis & Haematuria
Intravenous Urogram, Intravenous Pyelogram.
Complication → CKD, Obstructive Nephropathy.
Treatment → Extra Corporeal Shock wave Lithotripsy (ESWL)