

coreBTR⁺
Believe. Trust. Revise

In shadows of doubt
Find your own **Light**

Buri Tarah
Ratto!
BTR)

& Belief Toh Rakho!

L & M
goes together
PIGLET 5b 9c
HC of LA

Save VA
SAVE
VASE

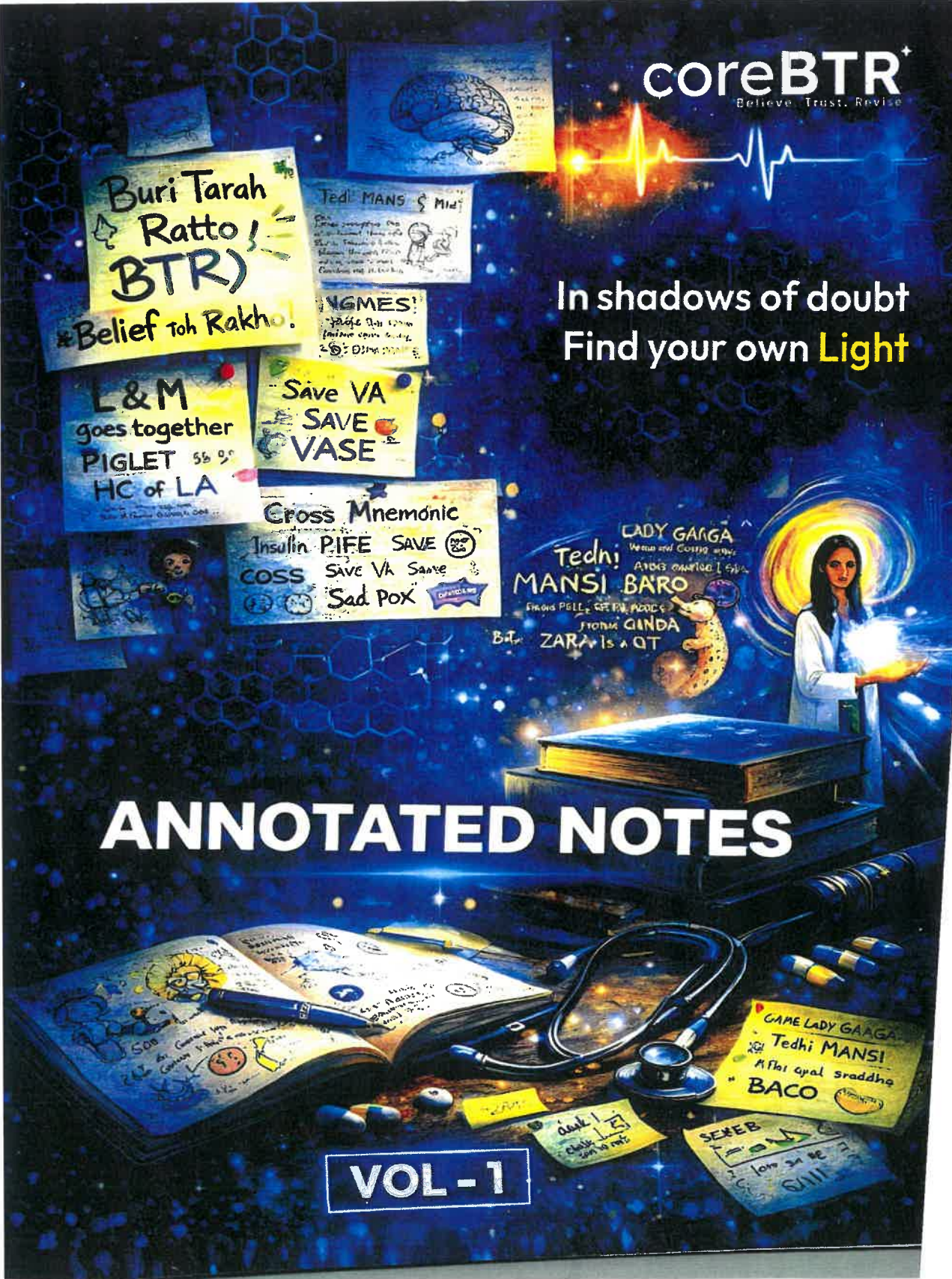
Cross Mnemonic

Insulin PIFE SAVE
COSS SAVE VA Saave
Sad POX

LADY GAAGA
Tedhi
MANSI BARO
ZARA is a QT

ANNOTATED NOTES

VOL-1



coreBTR⁺

Believe. Trust. Revise

The Ultimate Revision App by

Dr. Zainab Vora

for NEET PG, INI-CET & FMGE

**REVISE SMARTER.
RETAIN LONGER.
PERFORM BETTER.**



What You Get with CORE BTR

- ❖ **High-Yield Revision Videos**
Concise, concept-driven lectures across all 19 subjects, including integrated system-based learning for deeper understanding
- ❖ **Structured Notes & Workbooks (Set of 5 Books)**
Designed for rapid revision and long-term retention, perfectly aligned with video content
- ❖ **PYQs (Previous Year Questions)**
NEET PG, INI-CET & FMGE PYQs organized topic-wise and exam-wise for focused practice.
- ❖ **Curated QBank**
Application-based MCQs to sharpen your problem-solving skills and exam temperament.
- ❖ **Video Solutions by Dr. Zainab Vora**
Understand the logic behind every answer with detailed explanations.
- ❖ **#ZVRecommended PYQs**
Handpicked, must-do questions for quick revision in limited time.
- ❖ **Grand Tests & Subject Tests**
Analyze performance, identify weak areas, and track your progress.
- ❖ **Topic-Wise Pearls**
Ultra high-yield points for last-minute revision and instant recall
- ❖ **Coming Soon: Flashcards**
Powerful active recall tools to boost memory and retention.

Who Is CORE BTR For?

NEET PG aspirants. INI-CET aspirants. FMGE aspirants. Students aiming for last-mile high-yield revision

Hurry !!! Start Your Smart Revision Today **Revise Smart. Revise CoreBTR**

CoreBTR Helpline No: +919266682739 | Visit: www.corebtr.com

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CHAPTER

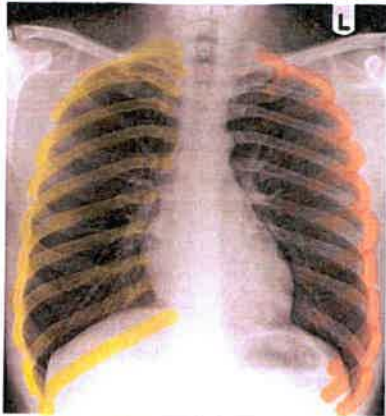
RADIOLOGY

BASIC INVESTIGATIONS

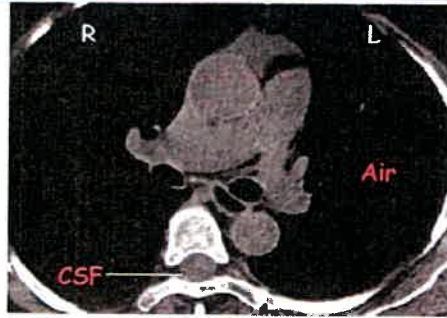
	Concept	Ionizing Radiation	Black	White
X-ray	Attenuation (2D)	+	Lucent	Opaque
CT Computed Tomography	Attenuation (3D)	+	Hypodense	Hyperdense
MRI Magnetic Resonance Imaging	* NMR :Nuclear Magnetic Resonance * Best Contrast resolution	-	Hypointense	Hyperintense
USG -Real time -2 to 20 MHz	* Piezoelectric crystals : Pb Zirconate Titanate * Transducer: sends sound waves	-	Hypoechoic	Hyperechoic
NUCLEAR MEDICINE	Gamma Rays * Scintigraphy * SPECT Single Photon * PET	++ Max: PET-CT	-	Hot-spot/ Avid

Modality	Dose
CXR	0.02 mSv
Skull X-ray	0.07 mSv
Abdomen X-ray	1 mSv
Mammography	0.5-0.7mSv
CT Head	2 mSv
CT Chest	5 mSv
CT Abdomen	10 mSv
PET	10-12 mSv
Barium meal follow through/ enema	7-8mSv
IVP	2-3mSv

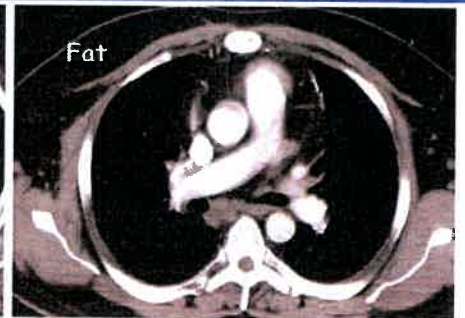
X-RAY , CT



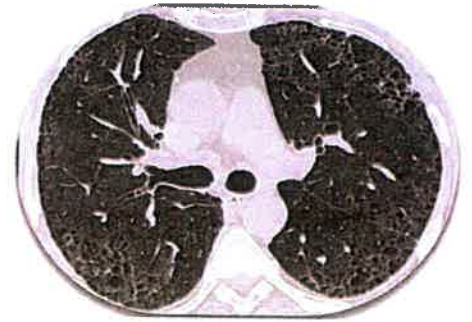
RIB COUNTING



NCCT

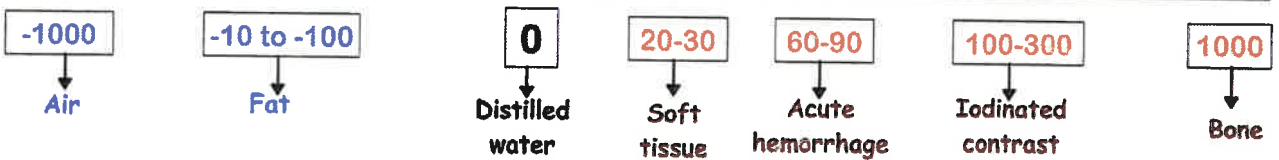


CECT (IV Contrast)



HRCT Lung

HOUNSEFIELD UNIT



NCCT - IOC

CALCIFICATION

- IntraCranial Calcification
- Calcified masses

CALCULI

- except:
- Gall stones- **USG**
 - CBD stones- **MRCP**

BONE - CORTEX

- # (Fracture)
- Initial- **X-Ray**
- IOC- **NCCT**
- except Stress # : **MRI**

ACUTE HEMORRHAGE

- Head Trauma
- except:
- DAI- **MRI**

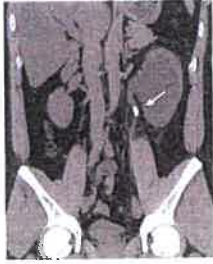
METALLIC FB

- **MRI is C/I**

• Osteoid Osteoma



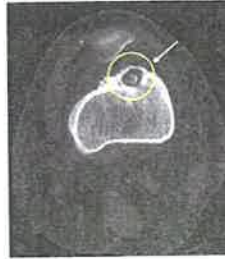
Periventricular: **CMV**
 Parenchymal: **Toxoplasma**
 GM-WM: **Zika virus**



Lt. Ureteric stone
 (Lt kidney shows HDN)



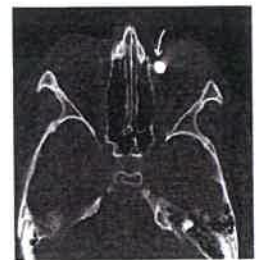
Chance #



Osteoid Osteoma

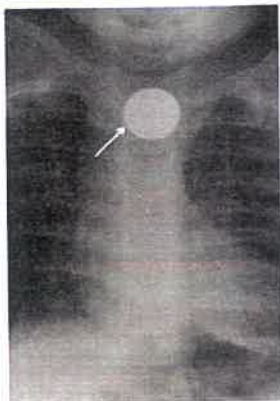


Rt. Acute EDH
Lt. Acute SDH

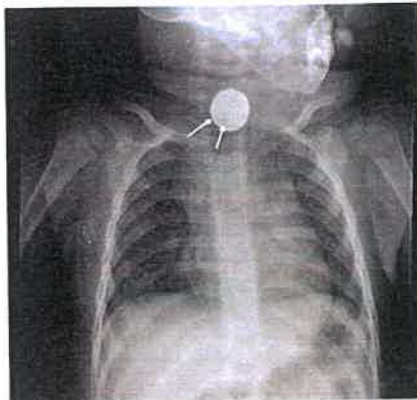


Metallic FB @ Lt Orbit

Approach to FOREIGN BODY



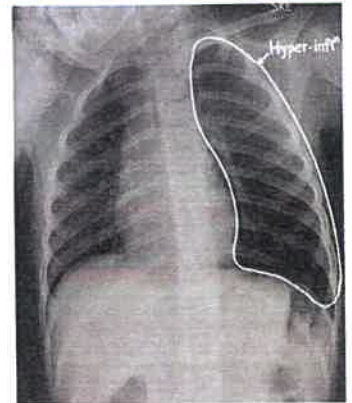
Coin in Esophagus
 if @ **Stomach**-
 Wait & Watch
 if **prox to stomach**-
UGIE



Button Battery in Esophagus
 Contain Alkali
 (Liquefactive necrosis)
 ↓
Remove ASAP

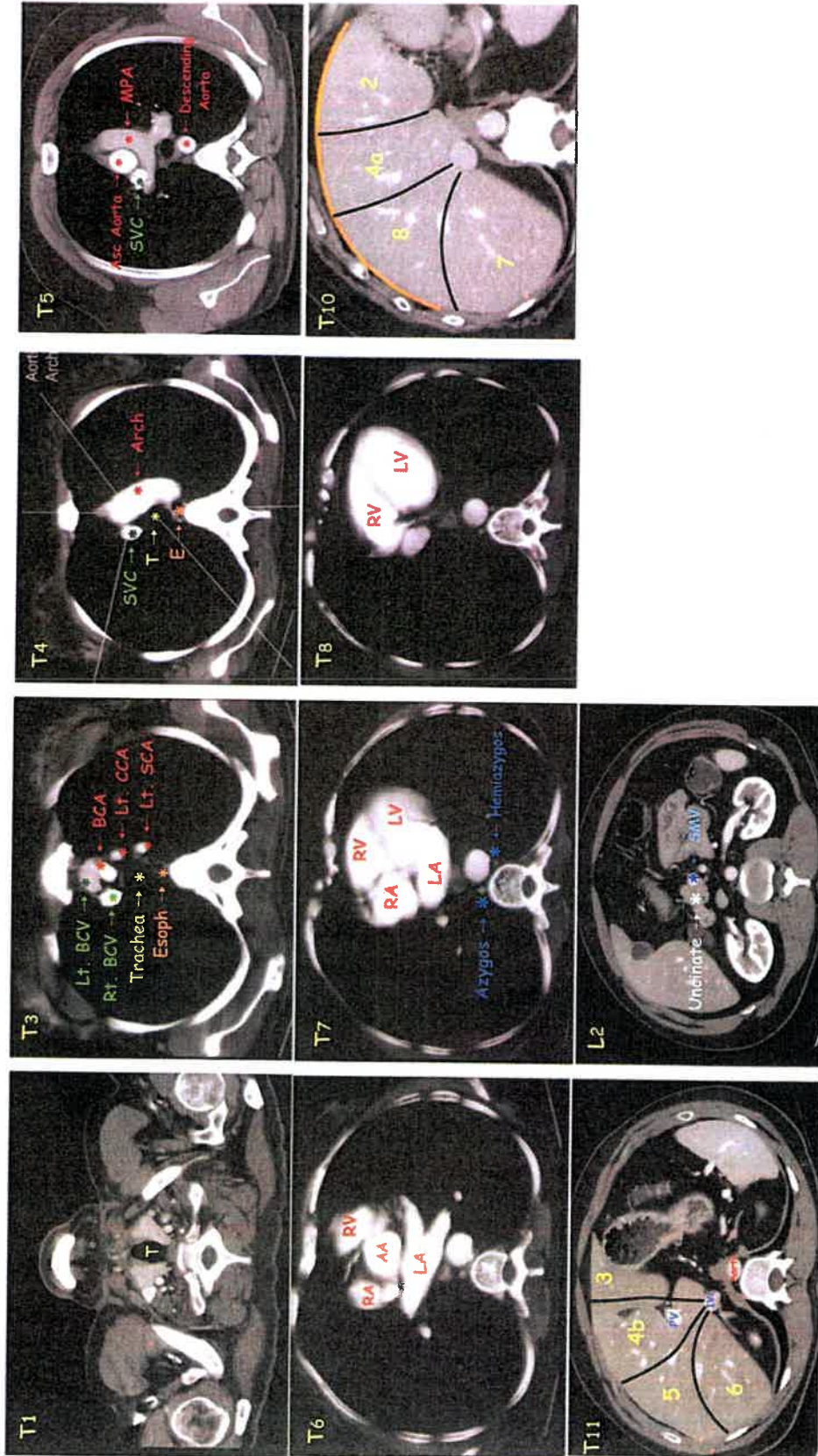


Coin in Trachea
 ↓
Do Bronchoscopy

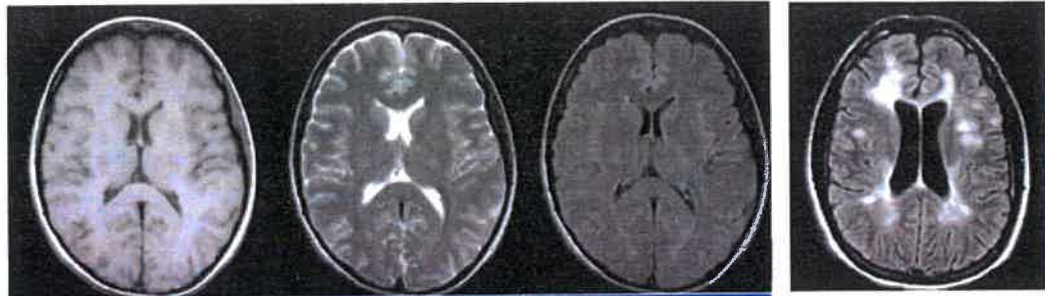


Child playing alone, now comes to emergency

- Air Trapping (Ball-Valve)
- Collapse (in complete obstruction of Airway)



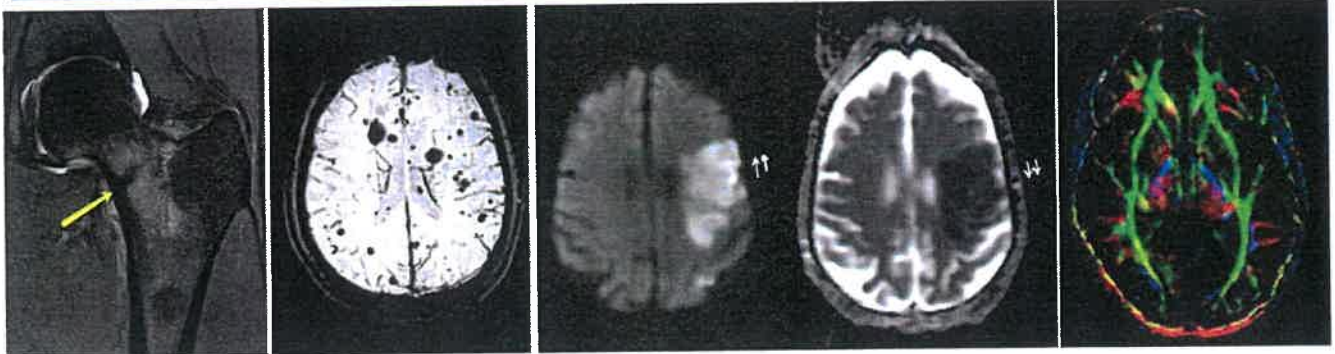
MRI



Dawson's Fingers

SEQUENCE	T1 w	T2 w	FLAIR (T2-CSF)
FLUID	↓	↑	CSF ↓ Edema ↑
GRAY MATTER	Grey	White	White
WHITE MATTER	White	Grey	Grey
FAT	↑	↑	↑

MRI SEQUENCES



STIR
IOC: BM edema

DAI
(Microbleeds)
↓
SWI

DWI **ADC**

Acute Stroke:
Initial IOC: NCCT
Best/ Most Sn: MRI-DWI

Diffusion restriction:

- 1) Acute stroke
- 2) Abscess
- 3) Epidermoid cyst
- 4) Brain tumors

DTI
White matter tracts

Thumb Rules - MRI



IOC for Tumor

Spinal Cord Trauma :

SCIWORA →

No Radiographic Abnormalities

BM EDEMA

IOC : STIR

IOC for:

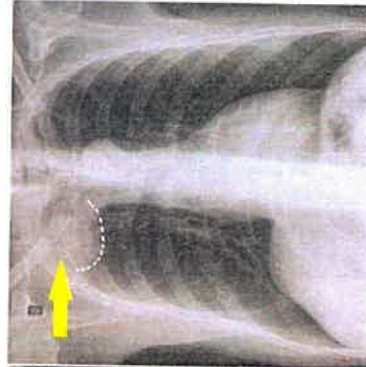
- Stress #
- Ac OM
- Sacroilitis
- Bone Tumors

LIGAMENTS
CARTILAGE
SOFT TISSUE



GBM

GlioBlastoma Multiforme
(POOR prognosis)

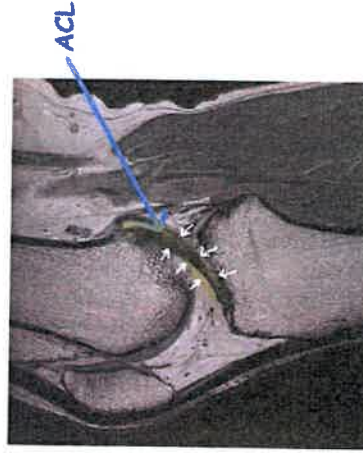


Pancoast Tumor



Sacral Insufficiency #

-Honda sign



Knee Ligaments

IOC: MRI

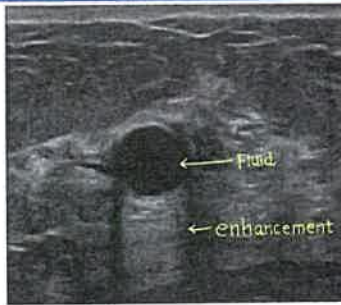
Gold Std: Arthroscopy

USG



Post Acoustic Shadowing

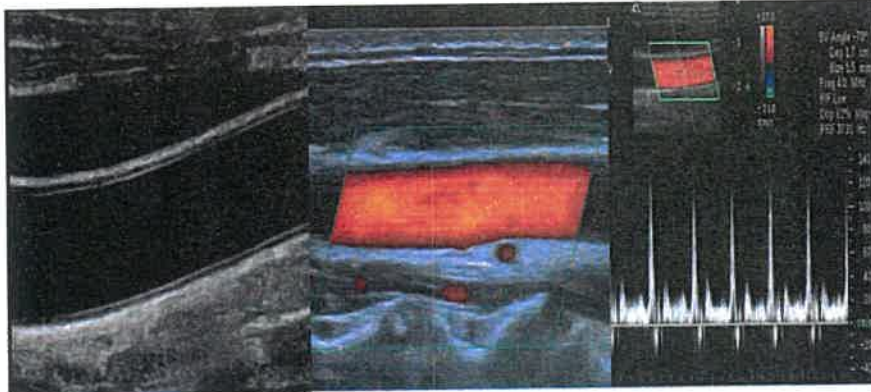
- Stone
- Bone
- Air (Dirty Shadow)



Post Acoustic Enhancement : with Anechoic : FLUID/ Cyst



eFAST



B-Mode

Color Doppler =
DUPLEX
Direction of flow

Spectral Doppler =
TRIPLEX
Velocity of flow

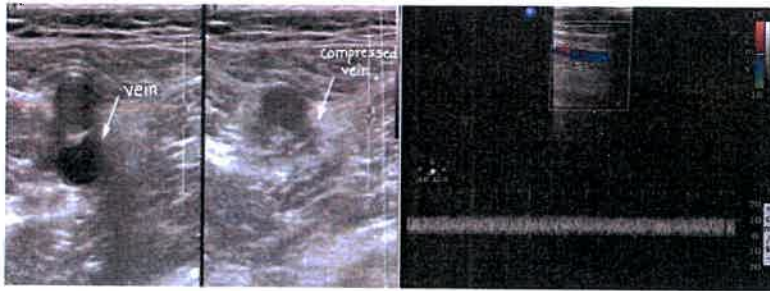
Triphasic → N Extremity



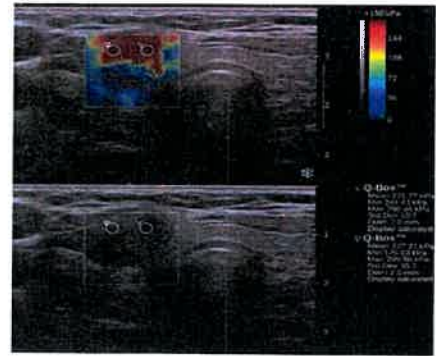
Biphasic → N Veins



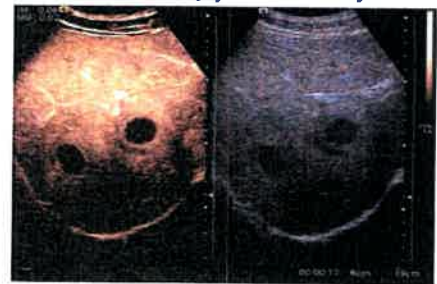
Doppler Shift Mickey Mouse sign



	NORMAL VEIN	DVT
COMPRESSIBILITY	++	Non Compressible
FLOW	Monophasic	-



USG Elastography → stiffness (by shear wave)



CEUS (Contrast Enhanced USG)

Thumb Rules - USG

GALL BLADDER

- FLUID
- CYST

PREGNANCY

1st line : USG

- DVT
- VARICOSE VEINS

IOC : Doppler

ARTERIAL DISEASES

1st : Doppler
IOC : CT angio
Gold std: DSA

CONTRAST MEDIA

Contrast Media	Modality	Route	Pre-requisite	Complications
IODINATED CONTRAST	X-Ray / CT	IV/ Any route	RFT (eGFR <30 → C/I)	Contrast Induced Nephropathy (CIN): AKI within 48 hrs of injection
GADOLINIUM	MRI	IV	RFT	Nephrogenic Systemic Fibrosis (NSF)
SONOVUE (SF ₆ bubbles)	USG	IV	Sulfa allergy to be ruled out	Safe in Renal Failure
BARIUM SULFATE	X-Ray	Oral/ Enema	Perforation, Obstruction, TEF, Post-op	<ul style="list-style-type: none"> • Barium C/I • Iodinated contrast preferred (Iohexol/ Gastrograffin)

GI & HBP RADIOLOGY - Barium Procedures



Ba Swallow

Esophagus



Ba Meal

Stomach/
Prox Duodenum



Ba Meal Follow Through
Small Bowel



Ba Enteroclysis
Small Bowel
(Better distension)



Ba Enema

Large Bowel



Small Bowel:

Jejunum- Valvulae conniventes

Ileum- Featureless loops

ESOPHAGEAL PATHOLOGIES



Achalasia

- VIP/ NO → x x
- Motility disorder
- IOC: Manometry

Dysphagia:
Liquid > Solid

Ba → Bird Beak >
Rat Tail



Ca-Esophagus



IOC: UGIE + Bx
Dysphagia: Solid > Liquid

Ba → Rat Tail



Feline Esophagus

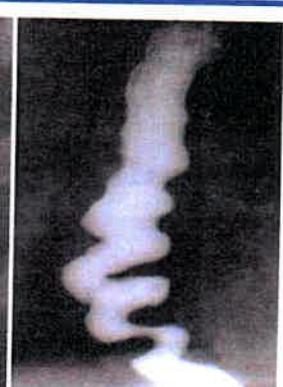
Eosinophilic
esophagitis



Candidiasis

h/o HIV
(AIDS Defining)

Rx: Fluconazole



Diffuse Esophagus

Spasm
Corkscrew

UGIE:
HSV: "Volcano-Punched out"
CMV → Serpiginous



Zenker's Diverticulum

- False, Pulsion

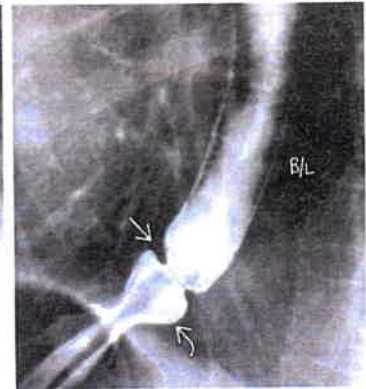
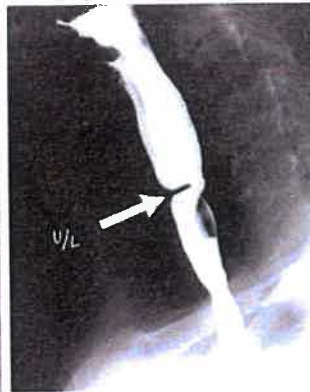
Rx: Dohlman procedure



Esophageal Web

- a/w : Plummer Winson syndrome (IDA, Glossitis)

-Premalignant → SqCC



Esophageal RING

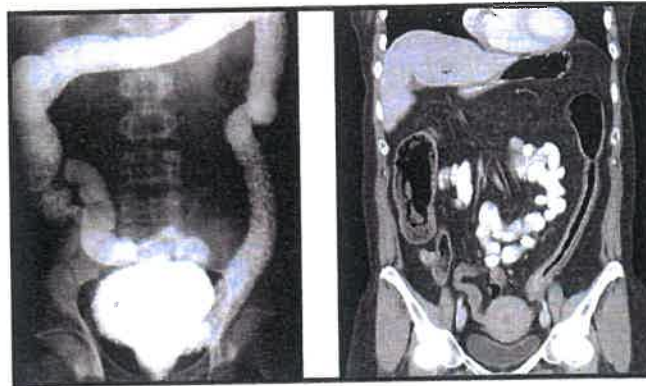
- a/w : Hiatal hernia

-Schatzki Ring (B > A)



String sign

- Crohn's Disease: Terminal ileum
- TB: Pulled up Caecum, Ileo-caecal jn



Lead Pipe Colon sign

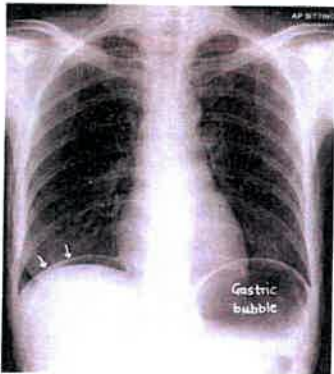
↓
Ulcerative Colitis



Apple Core sign

↓
Ca Colon

PNEUMOPERITONEUM



Pneumoperitoneum

Rt. Air under Diaphragm

1st Ix: CXR-PA erect

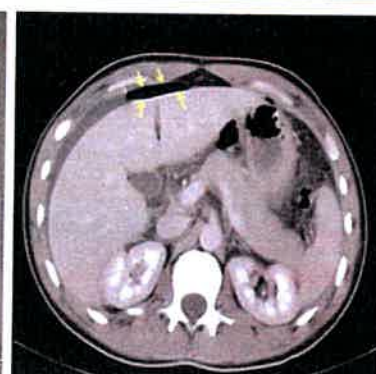
Next: IV fluid

Best/ definitive: Exp Lap



Chiladiti syndrome

Pseudo-Pneumoperitoneum



Pneumoperitoneum

IOC: CECT + Oral iodinated contrast

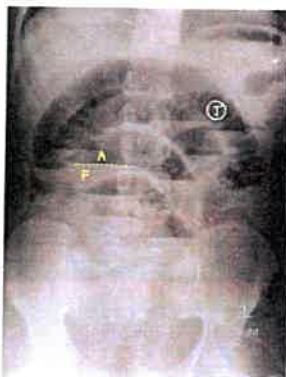


Football sign

NEC - Stage 3b

Approach to INTESTINAL OBSTRUCTION

Pain abdomen + Obstipation + Abdominal distension + Vomiting → IVF + NPO + NG



Proximal SBO

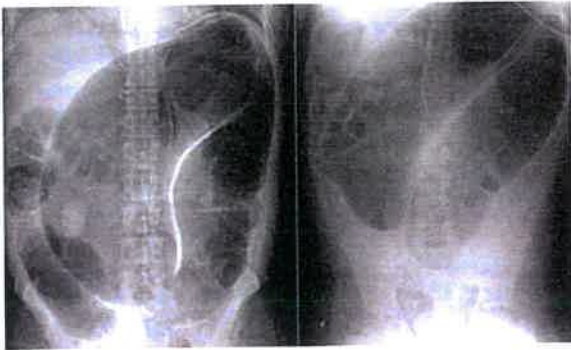
	<u>SBO</u>	<u>LBO</u>
MC Cause	Adhesions (Prior surgery)	Ca Rectum
Distribution	Central	Peripheral
Diameter	> 3cm	> 6cm
Valvulae Conniventes	++	-
Stepladder sign	++	-
Haustra	-	++
Mx	Conservative	Hartman's surgery



Paralytic ileus: ↓ Bowel sounds / post-op/ No transition zone

Mx: Rx underlying cause → Neostigmine (Cholinergics)

SIGMOID vs CECAL VOLVULUS

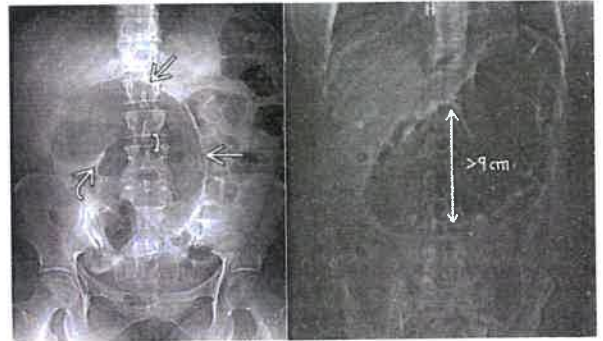


Sigmoid Volvulus

RF: Chronic constipation

Ix: Coffee Bean sign, Haustra absent

Rx: Flatus tube/ Endoscopy



Caecal Volvulus

RF: Pregnancy, Pelvic sxy

Ix: C -sign, Haustra + +

Rx: Surgery

GU RADIOLOGY - IVP



Ureterocele
Adder head/ Cobra head



Flower Vase/ Shaking Hand sign



Horseshoe Kidney
-Stasis, Obstruction, Calculus
-Turner syndrome



Weigert - Meyer law



Ectopic Ureter
Upper: Obstruction, Ectopic, Infero-medial
Lower: VUR, Drooping Lily sign

'WHITE KIDNEY'- Pattern Approach

IVP:



Putty Kidney

- End stage GU-TB
- Spread: Hematogenous
- Earliest: Moth eaten calyx
- Later: Pipestem ureter, Golf-Hole ureter
- Ix: Sterile pyuria → Urine AFB



Staghorn Calculus
Struvite stone



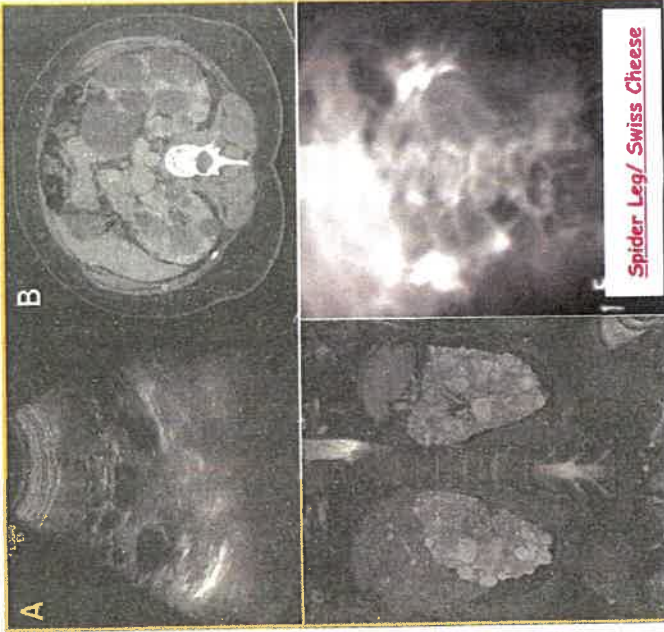
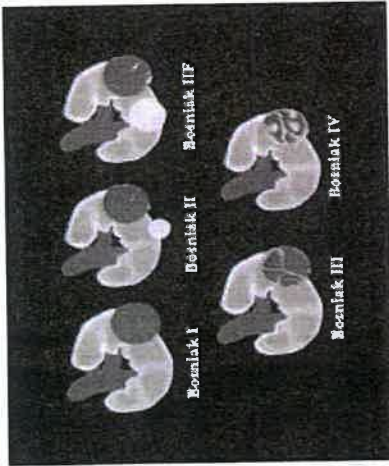
Medullary Nephrocalcinosis

- Hyper-PTH
- Medullary Sponge kidney



PUJ obstruction
Dietl' crisis
Rx: Anderson Hynes pyeloplasty

RENAL CYSTS



Bosniak Staging

Rx:

- F/up @ 6 months for Bosniak II.F
- Surgery for Bosniak III & IV

AR-PCKD

Age: Infants

Gene: Fibrocystin (6)

a/w: Congenital Hep Fibrosis

AD-PCKD

Age: Adults

Gene: PKD-1 (16)/ PKD-2 (4)

a/w: Berry's aneurysm
MVP, Diverticulosis

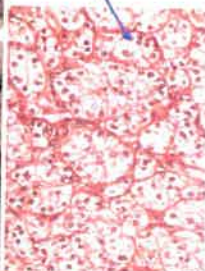
IOC: CECT

Best Prognosis: Chromophobe

Worst Prognosis: Duct of Bellini > Clear cell RCC

RENAL MASSES

Clear Cell RCC (MC)



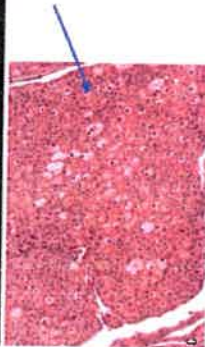
VHL (Chromosome : 3p)

- Cerebellar hemangioblastoma
- Pheochromocytoma

HPE: Glycogen/ Lipid (PAS +/- DR)

- Hematogenous mets

Oncocytoma/ Chromophobe RCC



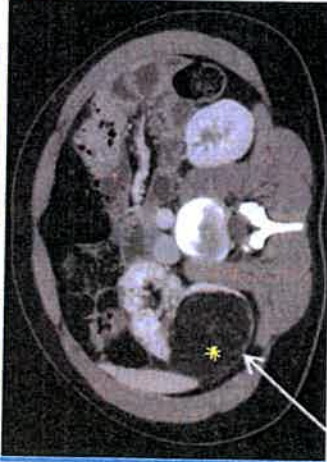
Birt-Hogg-Dube

- Lung cysts
- Fibrofolliculomas

HPE: "PLANT-like"
- Resinoid nuclei

O/E: Tan-colored
Stain: Hale's colloidal Fe

Angio-Myo-Lipoma → TSC



Medullary RCC

- Sickle Cell Trait

Papillary RCC

- Dialysis
- Fumarate DH
- Trisomy 7/17

Child RCC

- Xp11 translocation

Tuberous Sclerosis :

Seizures, Adenoma sebaceum

RP hemorrhage:

Wunderlich syndrome