RADIOLOGY DEPARTMENT

Faculty of Medicine

Sohag University

Radiology Cases Review

2021

For 5th Years Medical Students

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.

Contents :

Don't Forget

- **In your answer of any radiological case , Mention** :

  - ✓ **S**ide *(Rt or Lt) ….or bilateral*
  - ✓ **S**ite
  - ✓ **D**escription
  - ✓ **D**iagnosis *(Provisional or Final)*

PART I

CT BRAIN

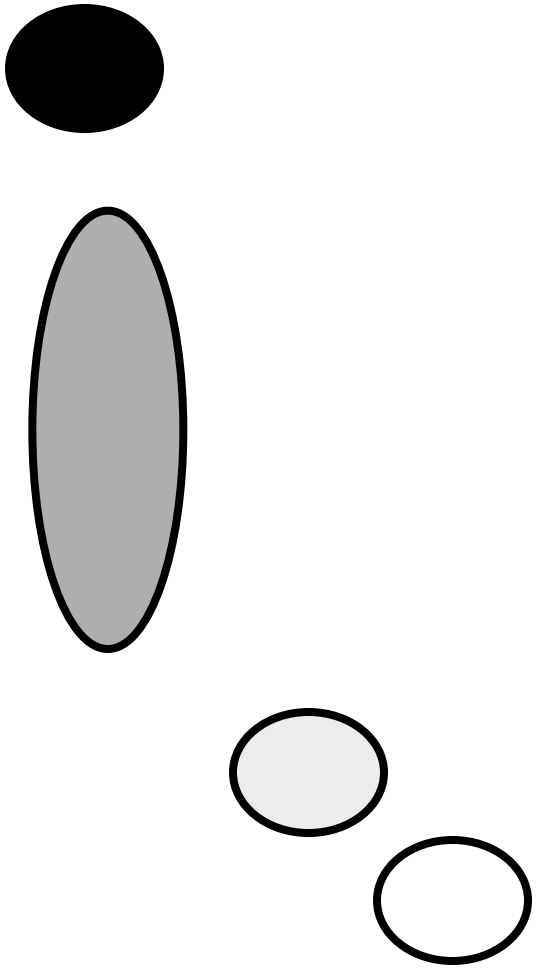
(CT Brain) Round Link :

- https://www.youtube.com/watch?v=2k8QCAuixjI&list=PLqU6GNJJ8xwkhCDPznBYkvG3_NXZt-B17&index=4

Don't Forget

Brain CT Densities:

- **Air** -1000 Hu
- Fat -10 : -300
- **CSF** 0 : 15
- Edema 20
- Infarct 25
- Parenchyma → 30 : 40
- Recent blood → 60 : 90
- **Calcification** > more 100

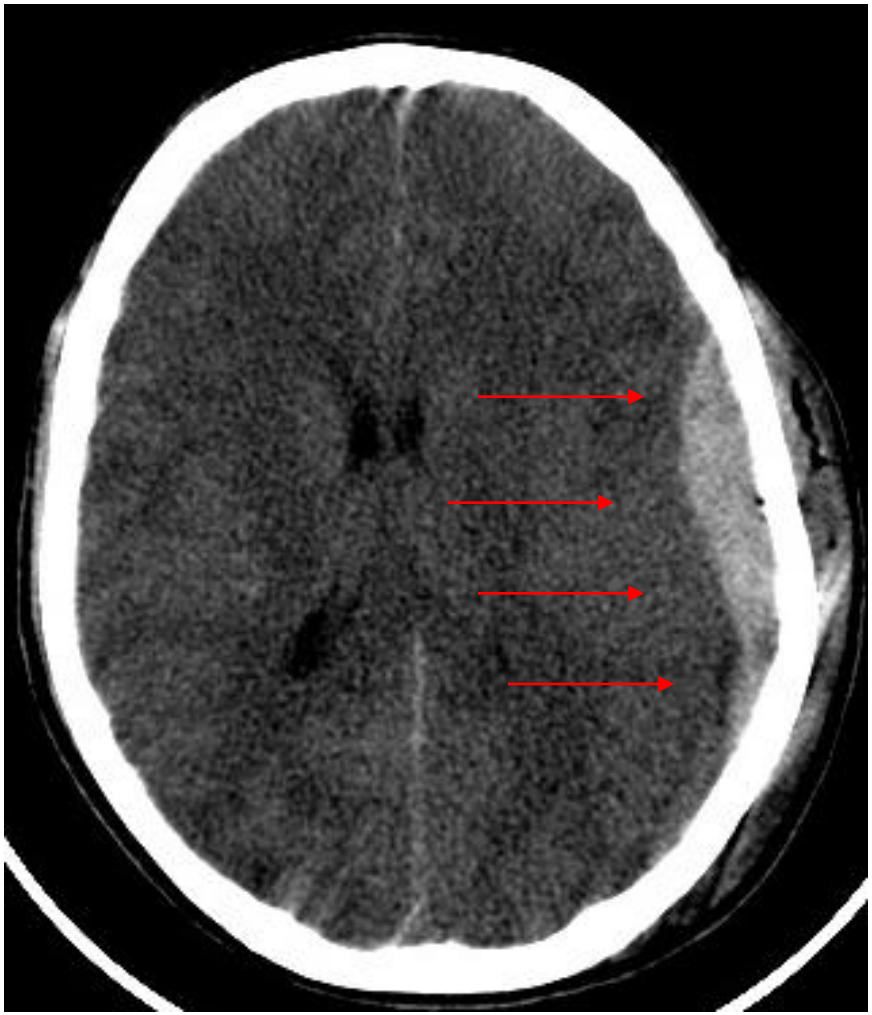


Hu = Hounsfield Unit of CT density.

CASE I

Lt parietal
Extra dural Hematoma

- **CT Brain**
- Head Trauma
- Lt parietal , extra axial , biconvex shape, hyperdense lesion of **fresh blood density**



NB. Extra axial = Outside brain tissue

CASE 2

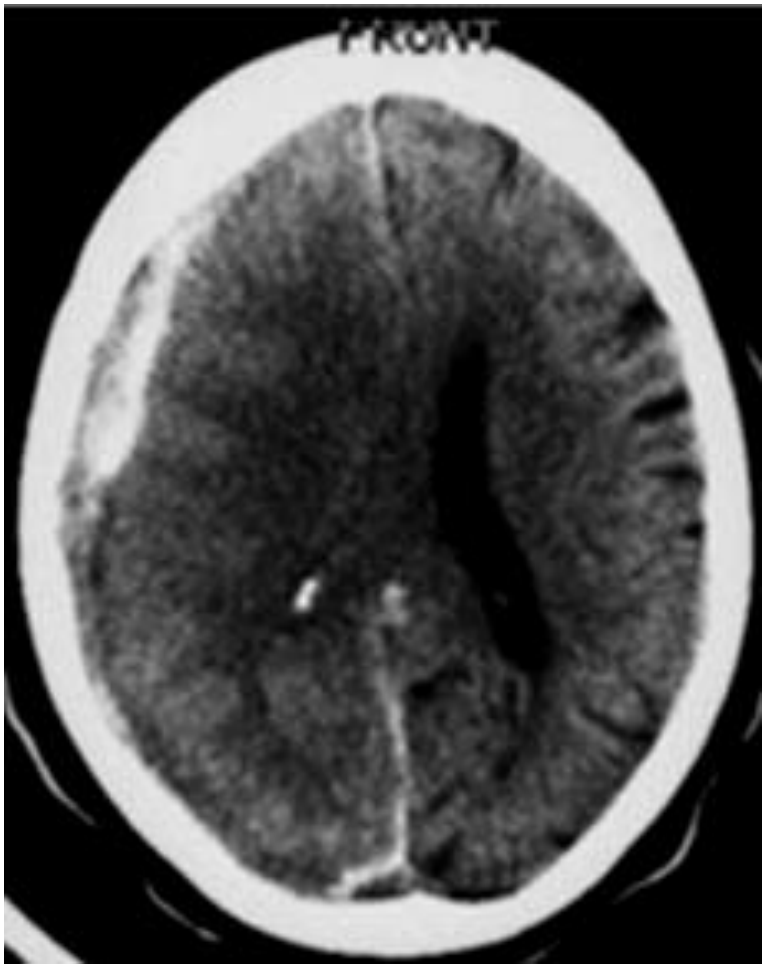
Rt parietal
(Acute) Sub dural Hematoma

- **CT Brain**
- Head Trauma
- Rt parietal , extra axial ,

  crescent shape

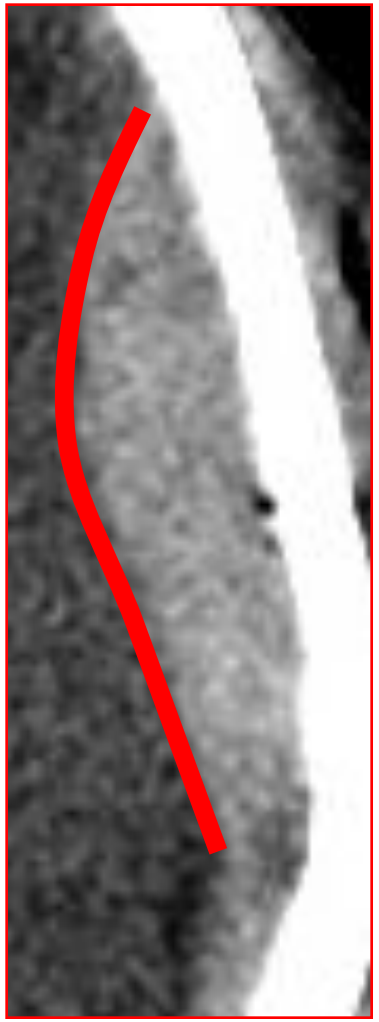
  hyperdense lesion

of fresh blood density



NB. **Subdural Hematoma types** : - Acute -Subacute & - Chronic

SUB Vs EXTRA



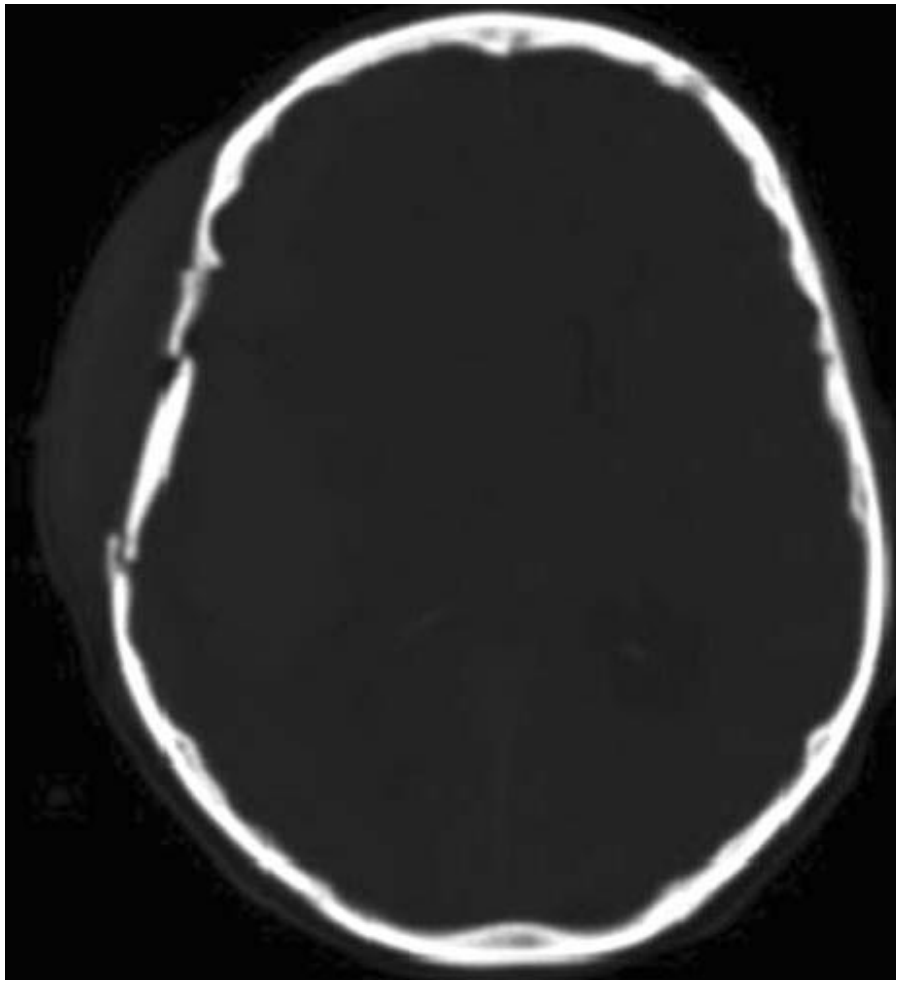
CASE 3

Rt parietal

Skull Depressed Fracture

- **CT Brain** (Bone window)
- Head Trauma
- **Rt** parietal bone fracture ,

with **outer table** of fractured bone **under** inner table of adjacent intact bone



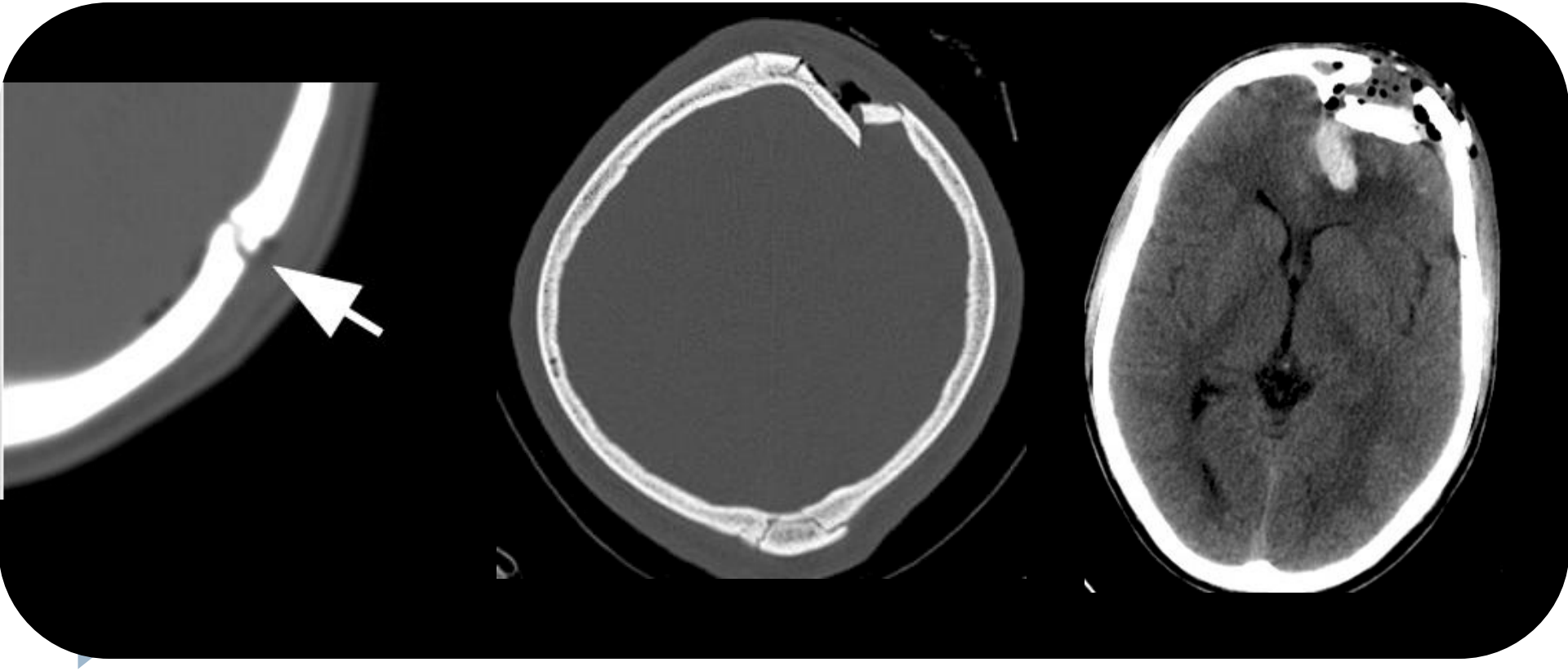
NB. Skull fractures : - Fissure - Depressed & - Comminuted

Skull Fractures

Fissure

Depressed

Comminuted



CASE 4

Subarachnoid Haemorrhage

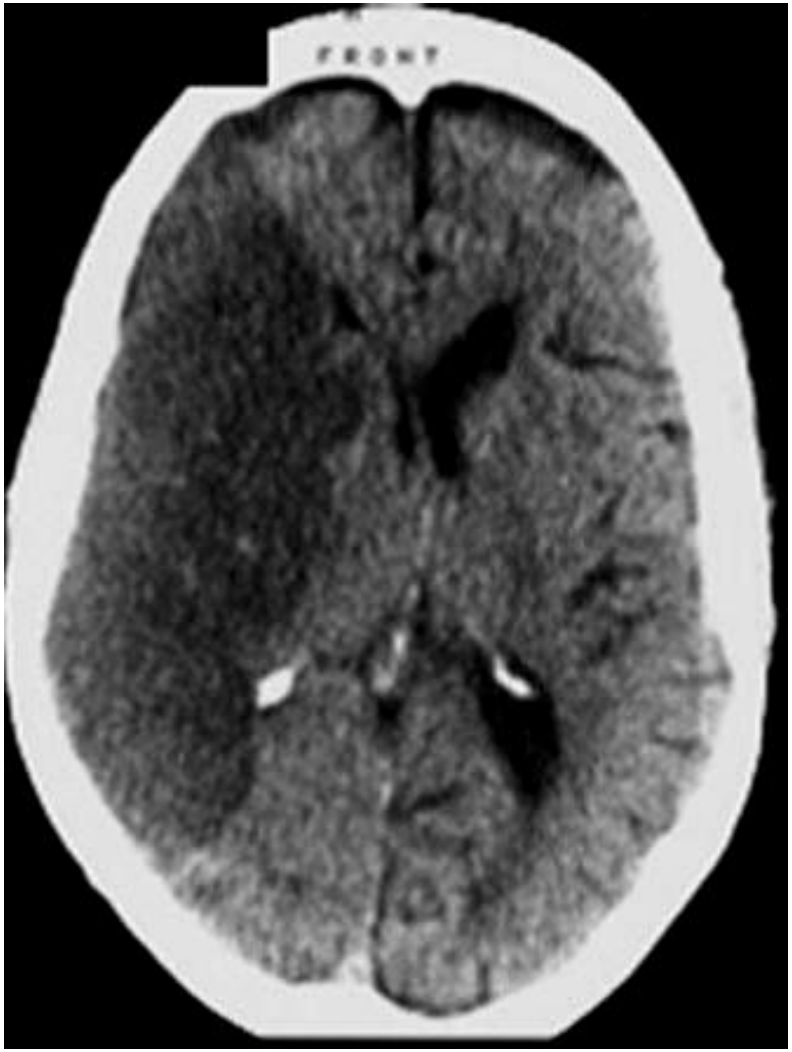
- **CT Brain**
-
- Rt Parietal , fresh blood density smearing cortical sulci

Don't Forget Fresh Blood density : 60 : 90 Hu .

CASE 5

Acute Cerebral Infarction

- **CT Brain**
  - **Recent Lt Hemiplegia**
- Rt cerebral *(Fronto – Parieto – occipetal)* well defined cortical & subcortical hypodense area.
- with Associated **mass effect** on adjacent ventricle



NB. **Mass effect of acute infarction is caused by associated edema**

Mass effect

- Effacement of cortical sulci
- Shift of Medline
- Compression of Ipsilateral ventricle

- **Causes :**
  - **SOL** (**S**pace **o**ccupying **l**esion) , as tumor , Abscess……..
  - Large Acute cerebral infarction

CASE 6

Chronic Cerebral Infarction

- **CT Brain**

- Bilateral cortical areas of CSF density (Porencephalic areas)

NB. **Cerebral Infarction** may be : Acute Subacute or Chronic

CASE 7

Sub acute Cerebral Infarction

- **CT Brain**
  - **Lt Hemiplegia**
- Lt cerebral *(Fronto – Parietal)* well defined cortical & subcortical hypodense area.
- **No** associated **mass effect** on adjacent ventricle

NB. In Sub acute Infaarction, edema resolved ……so No mass effect .

CASE 8

Intra Cerebral Hemorrhage

- **CT brain**
  - **Headache / Rt Hemi paresis**
- Lt parieto-temporal,

Intra-axial irregular area of

fresh blood density

.

CASE 9

Intra Cerebral Hemorrhage

- **CT brain**
  - **Headache / Lt Hemi paresis**
- **Rt** parietal,

Intra-axial area of **fresh blood density,** with associated mass effect (Medline shift , compressing ipsilateral ventricle)

.

CASE 10

Intra Ventricular Hemorrhage

- **CT Brain**

- **Fresh blood density** is seen in both lateral ventricles .

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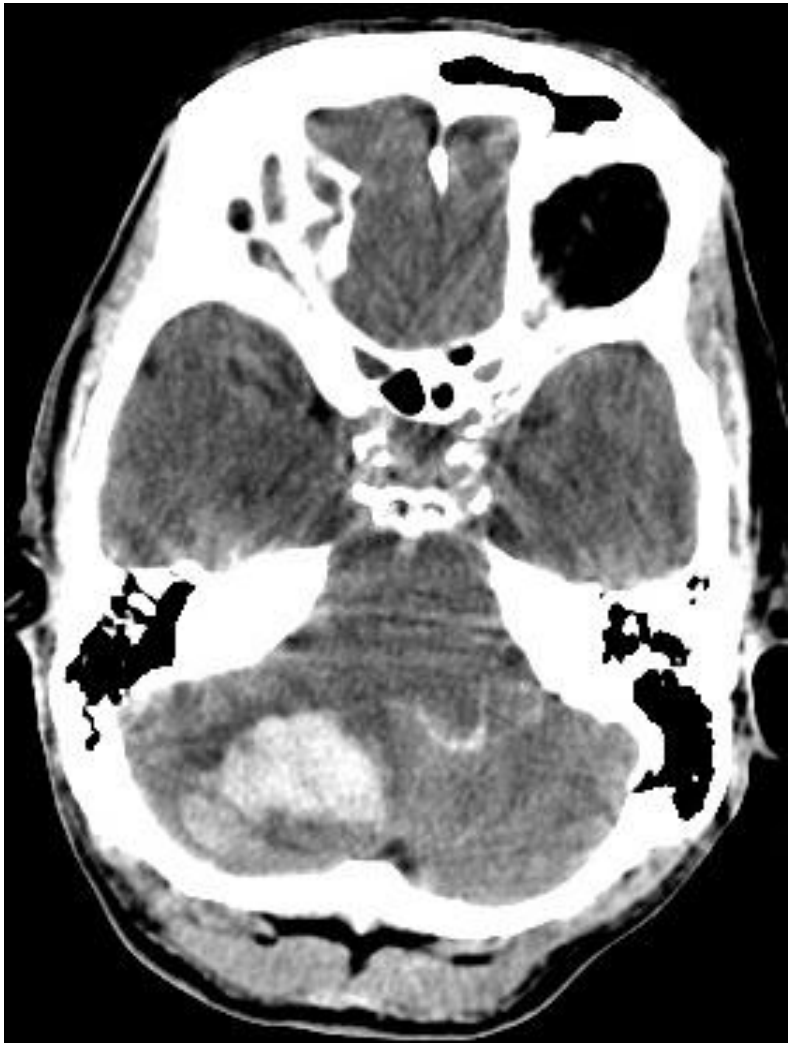
CASE 11

Cerebellar Hemorrhage

- **CT Brain**
  - Headache & Attaxia

- Intra axial, Rt cerebellar area of fresh blood density.



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CASE 12

Brain Abscess

- **CT Brain** (Contrast Enhanced)
  - Fever, Hedache

- Rt parietal , Cystic lesion , with hypodense content , & regular marginal enhancing wall
- The lesion & surrounding edema causing mass effect

Remember ……. **What is mass effect ?**

CASE 13

Lt thalamic Lacunar Infarction

- **CT Brain ,**

- Small well defined hypodense lesion at Lt thalamus

Lacunar Infarction = Small Infarction

CASE 14

Hydrocephalus

- **CT Brain**

- Diffuse dilatation of both lateral ventricles

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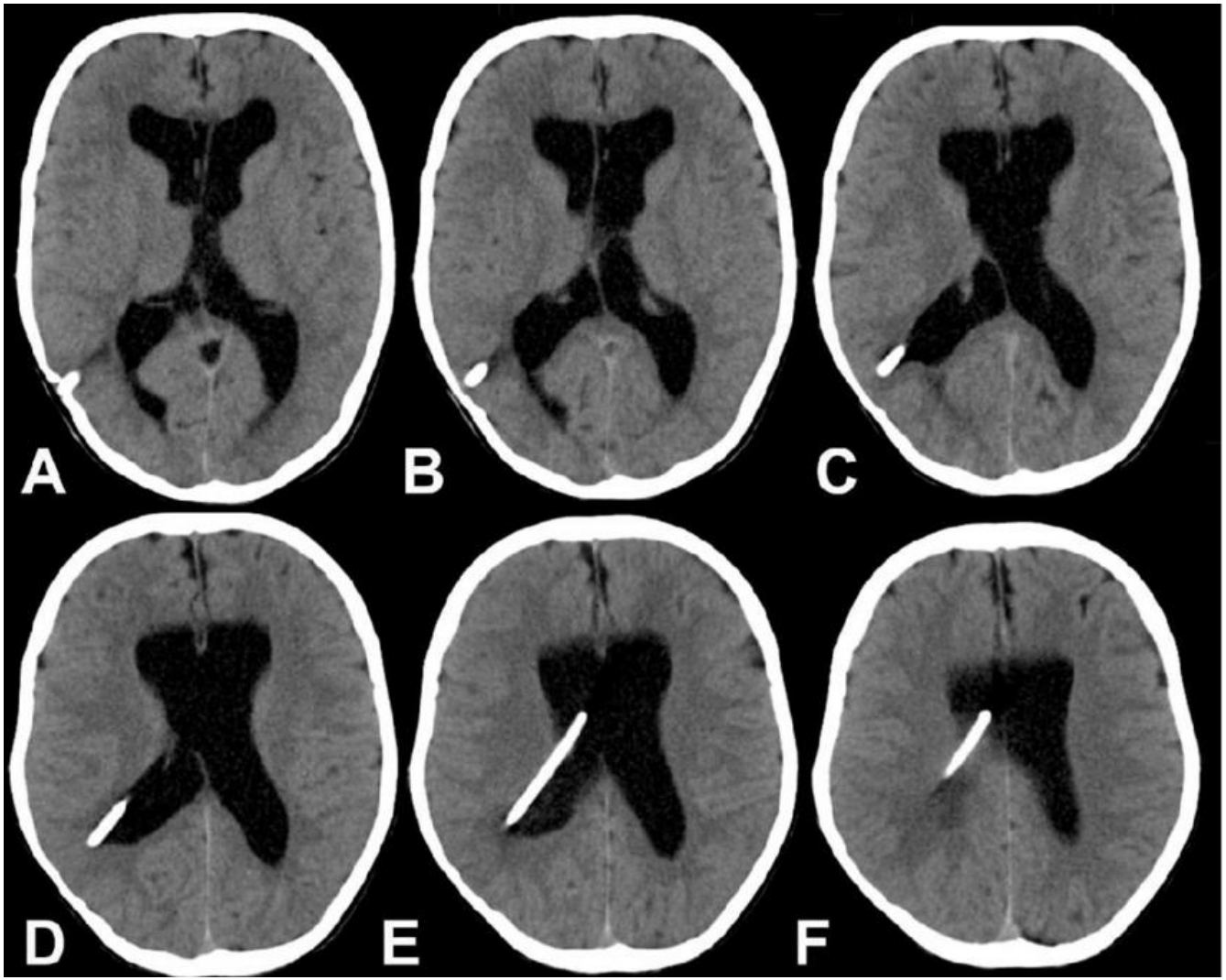
CASE 15

Shunted Hydrocephalus

- **CT Brain**
- VP shunted Hydrocephalus

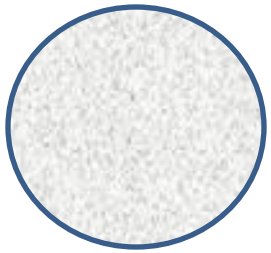


- **VP** = Ventriculo – Peritoneal .

Patterns of contrast enhancing

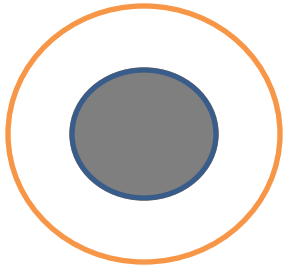
Non enhancing

ENHANCING



HOMO

HETERO



Uniform

Non Uniform

MARGINAL

Don't Forget

N.B. IV contrast is mandatory for diagnosis & follow up of any suspected Brain Tumor

Glioma

Heterogeneous Enhancement

Gliblastoma

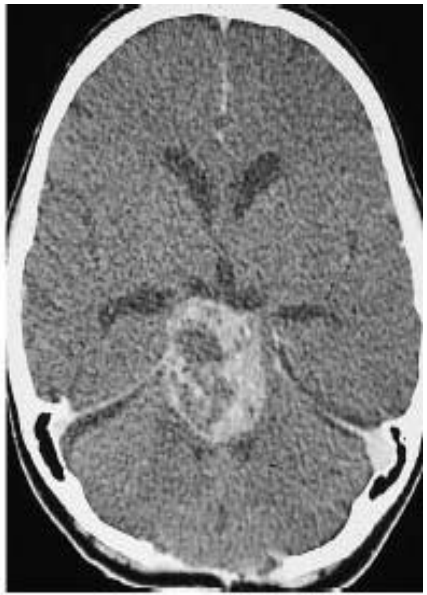
Non Uniform Ring Enhancement

Abscess

Uniform Ring Enhancement

Meningioma

Homogeneous Enhancement



للاطلاع فقط

PART 2

CHEST

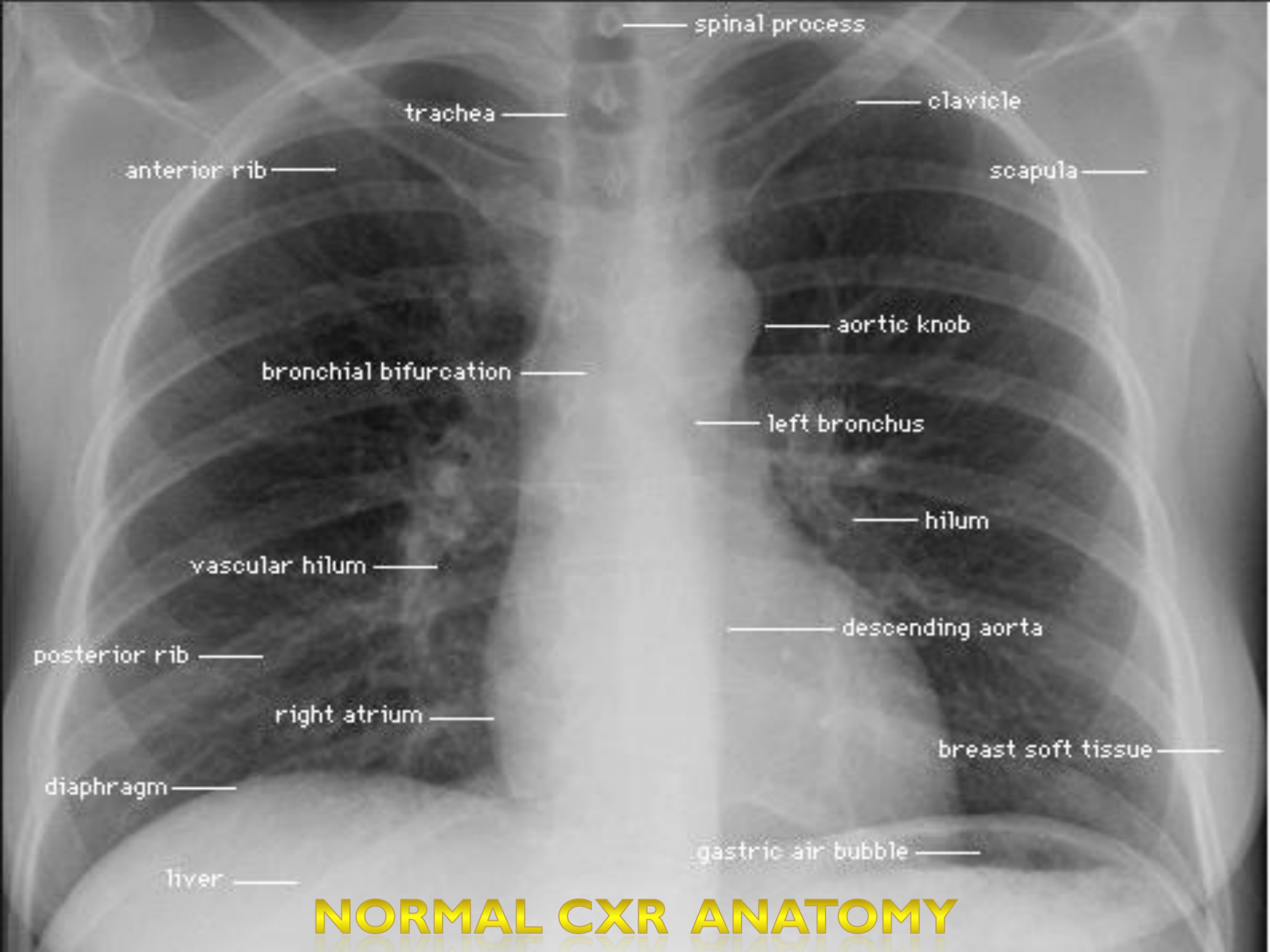
(Chest X Ray) Round Link :

- https://www.youtube.com/watch?v=6qz4zW73vLs&list=PLqU6GNJJ8xwkhCDPznBYkvG3_NXZt-B17&index=5

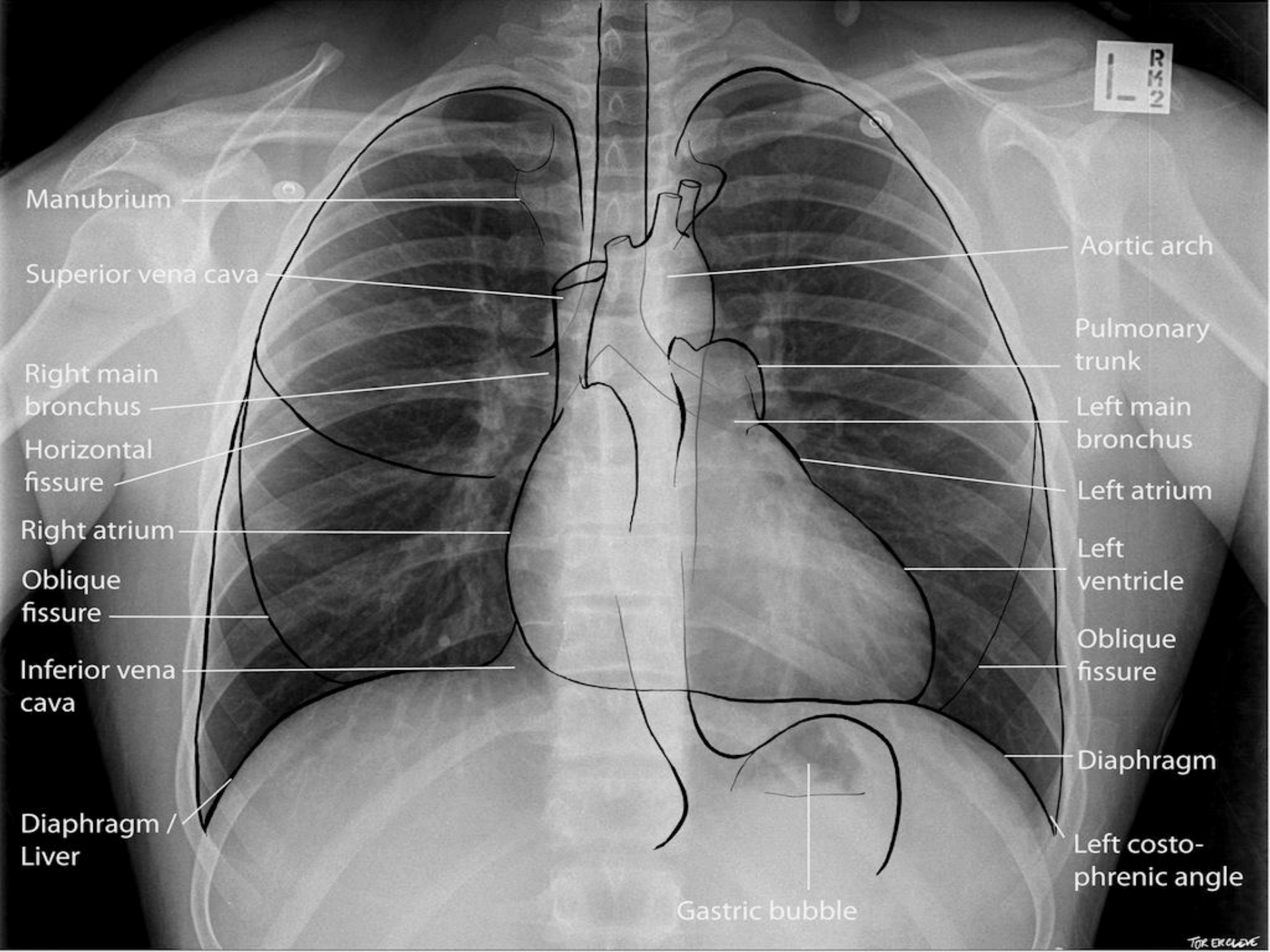
Don't Forget

P-A (Postero-Anterior) View

Is the standard CXR Position



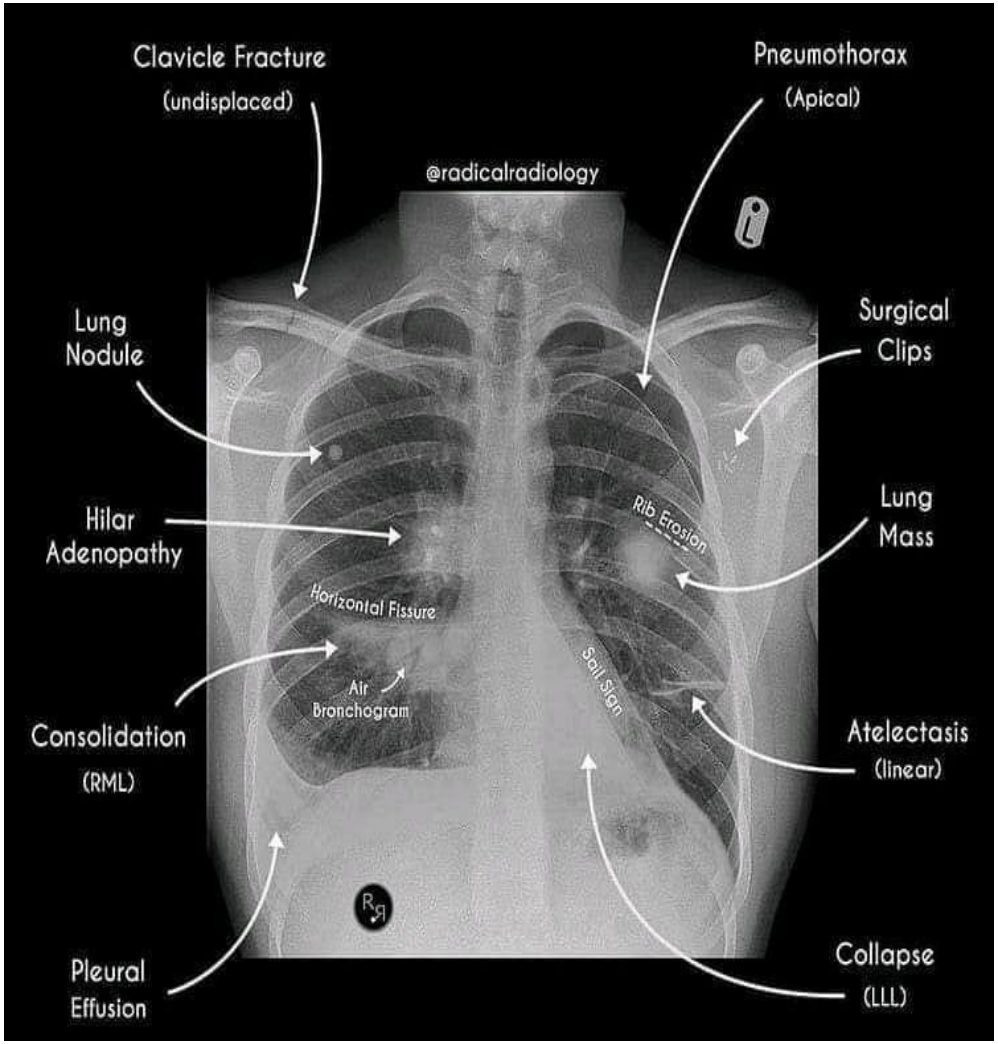
NORMAL CXR ANATOMY


Manubrium
Superior vena cava
Right main bronchus
Horizontal fissure
Right atrium
Oblique fissure
Inferior vena cava
Diaphragm / Liver
Aortic arch
Pulmonary trunk
Left main bronchus
Left atrium
Left ventricle
Oblique fissure
Diaphragm
Left costo-phrenic angle
Gastric bubble

TERMS

Don't Forget

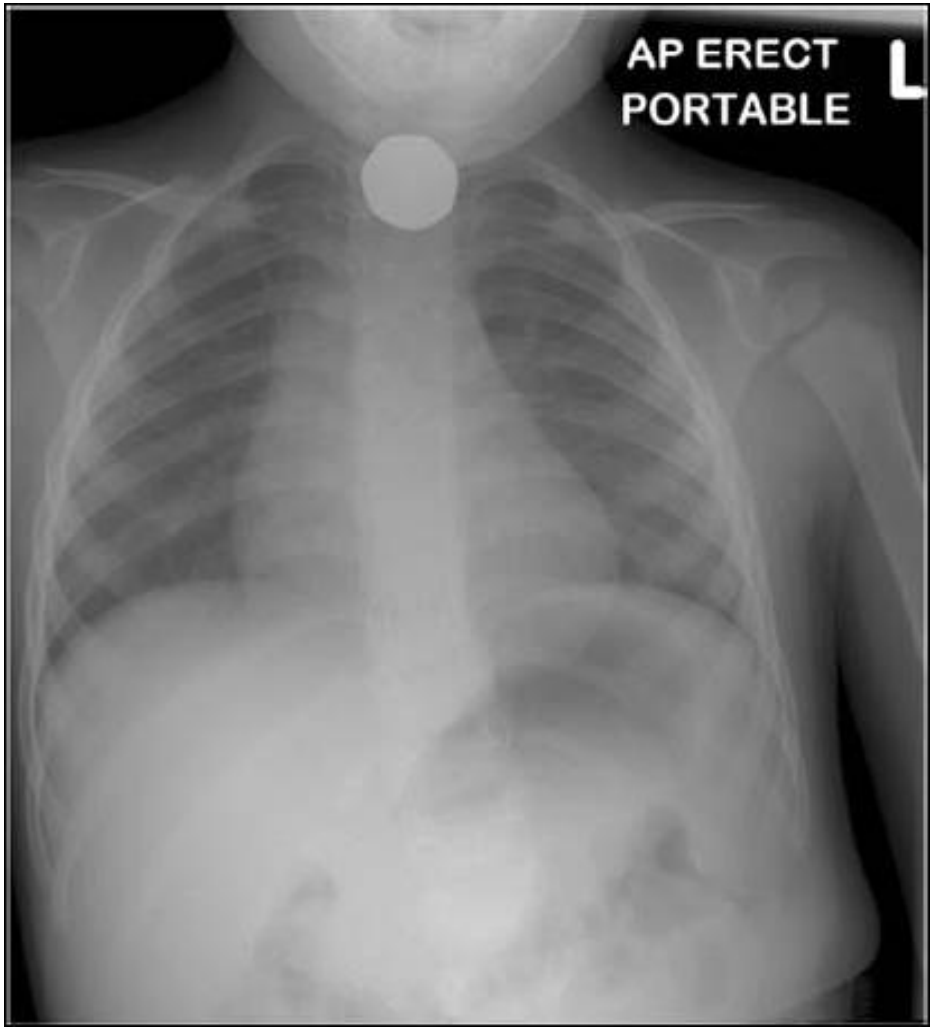
- **Nodule** : well defined lung lesion **< 3 cm**
- **Mass :** Well defined lung lesion **> 3 cm**.
- **Patch :** ill defined lung lesion



CASE 1

F.B. Inhalation

- **CXR**
- Radiopaque rounded foreign body is seen at Medline upper chest



CASE 2

Pneumo-pericardium

- **CXR**
- Radiolucent crescent of air is seen surrounding Lt side of heart shadow.

CASE 3

Pneumo-pericardium

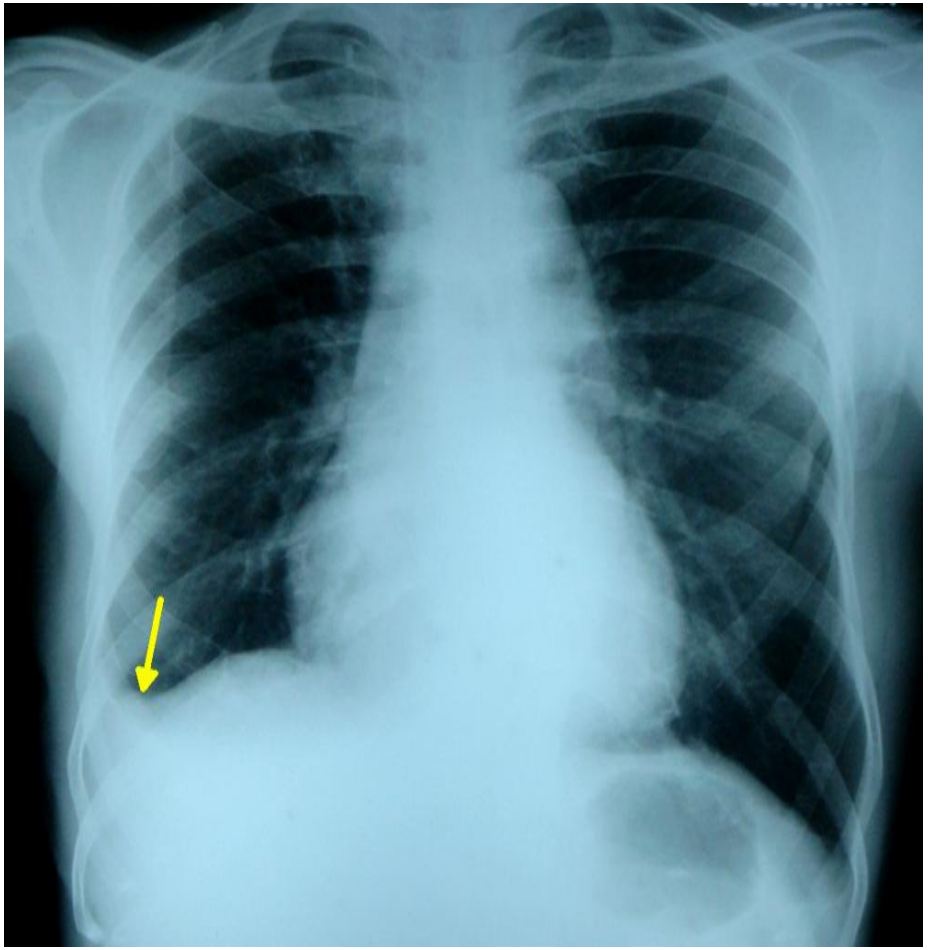
- **CXR**
- Radiolucent area of air is seen surrounding heart shadow.

CASE 4

Minimal
Rt pleural Effusion

- **CXR**
- Obliterated

Rt costo-phrenic angle.

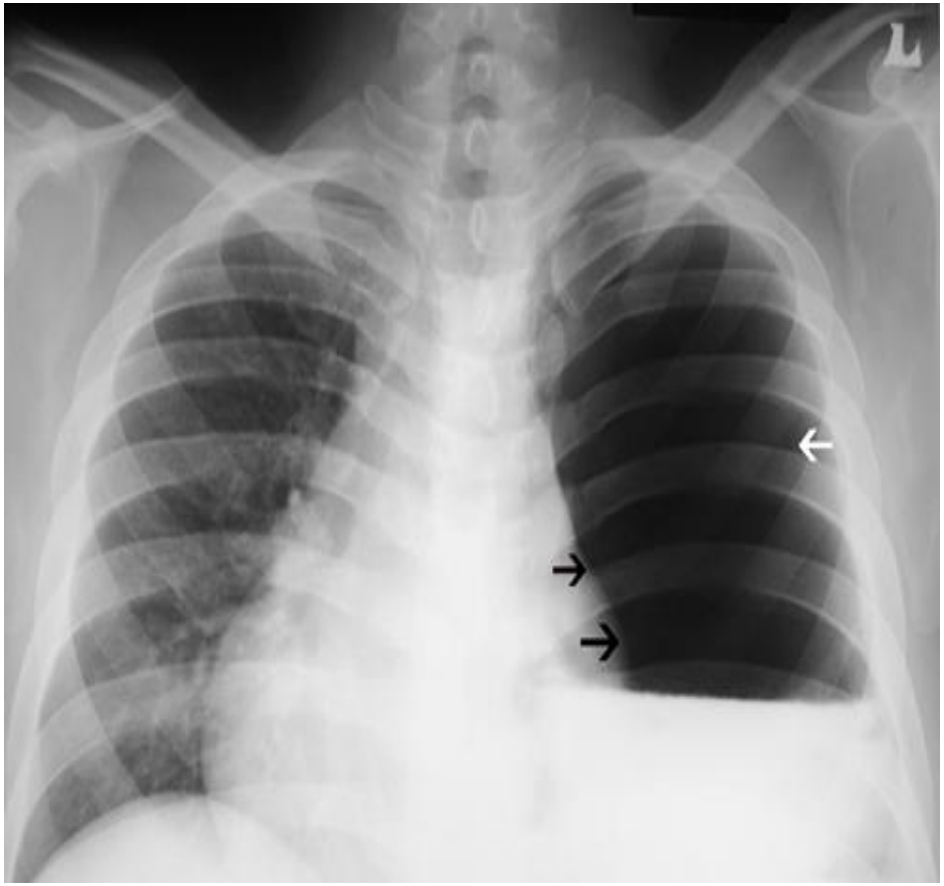


CASE 5

Lt Hydro-Pneumo Thorax

- **CXR**
- Lt hemi-thorax is occupied by

lower homogenous opacity with horizontal upper border of air-fluid level & upper jet black lucency.



CASE 6

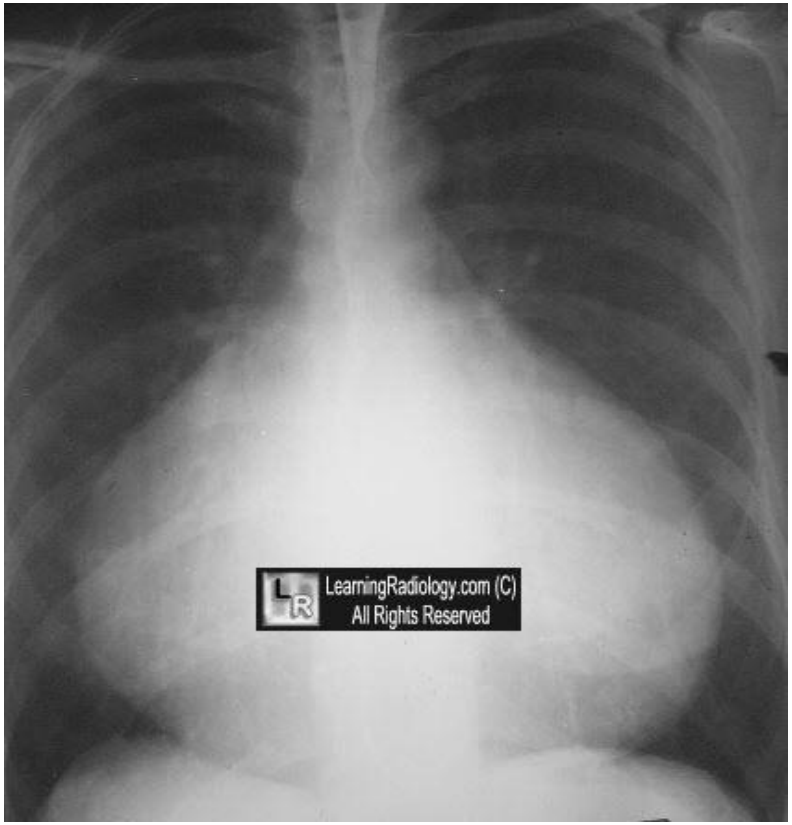
Rt Moderate Pleural Effusion

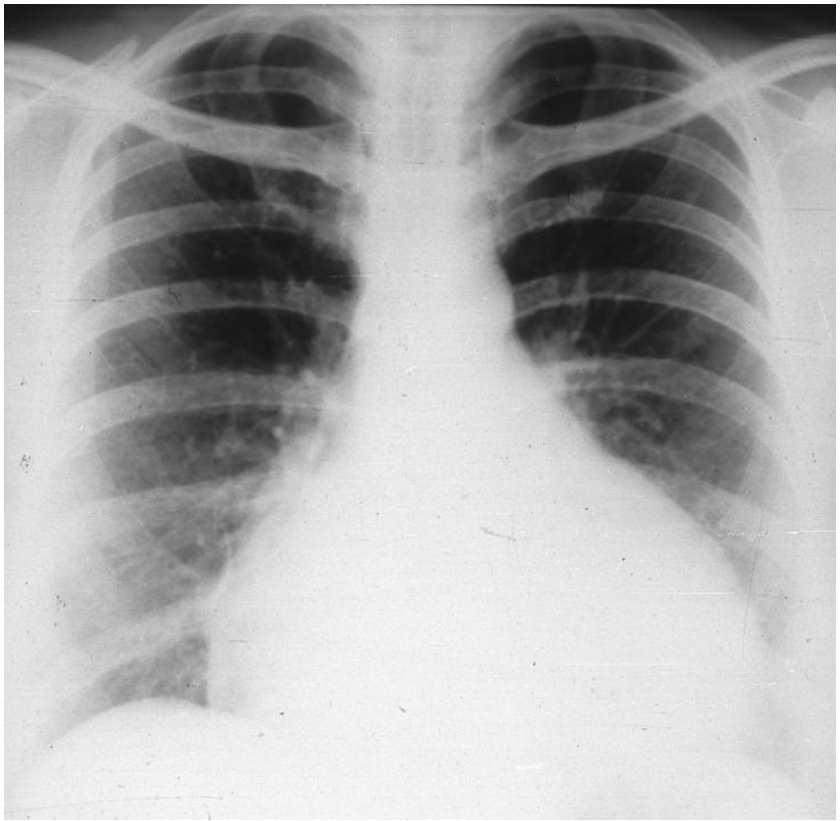
- **CXR**
- Rt lower lung zone, homogenous opacity with upper border rising to axilla.

CASE 7

Pericardial effusion

- **CXR**
- Enlarged cardiac shadow size, giving Flask Shape heart

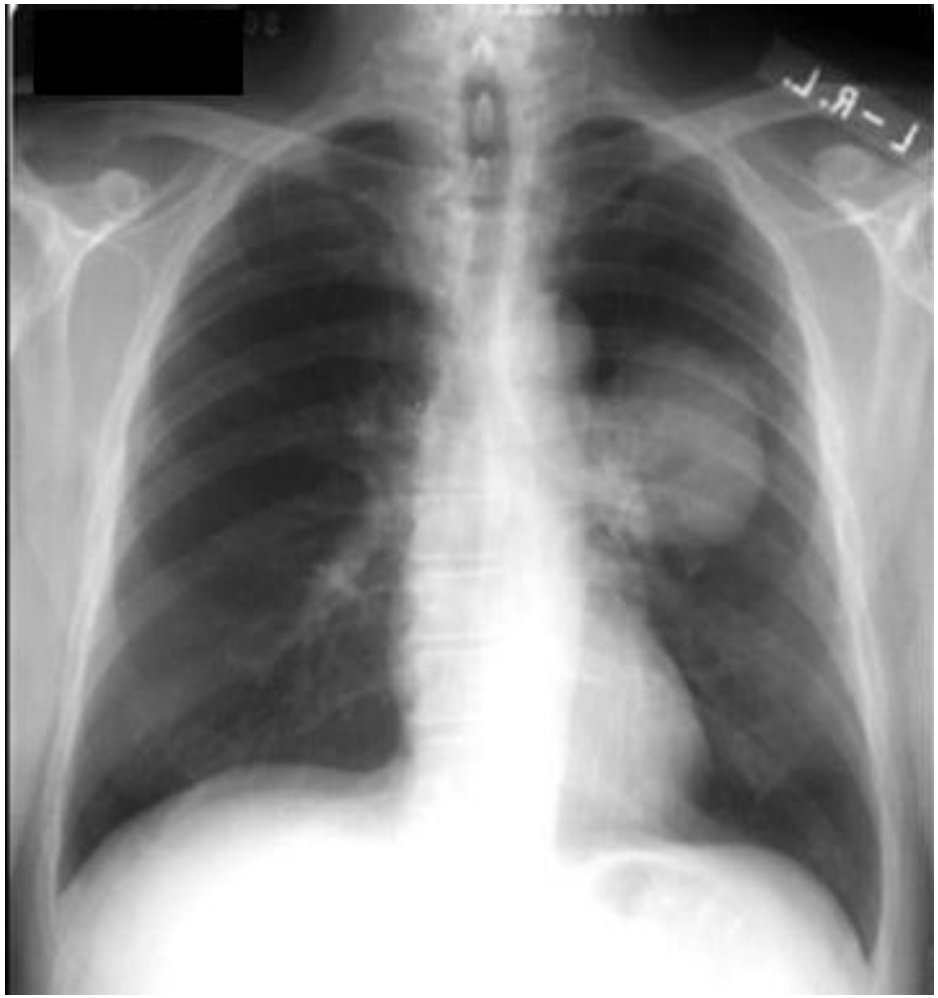




CASE 8

Lung Mass

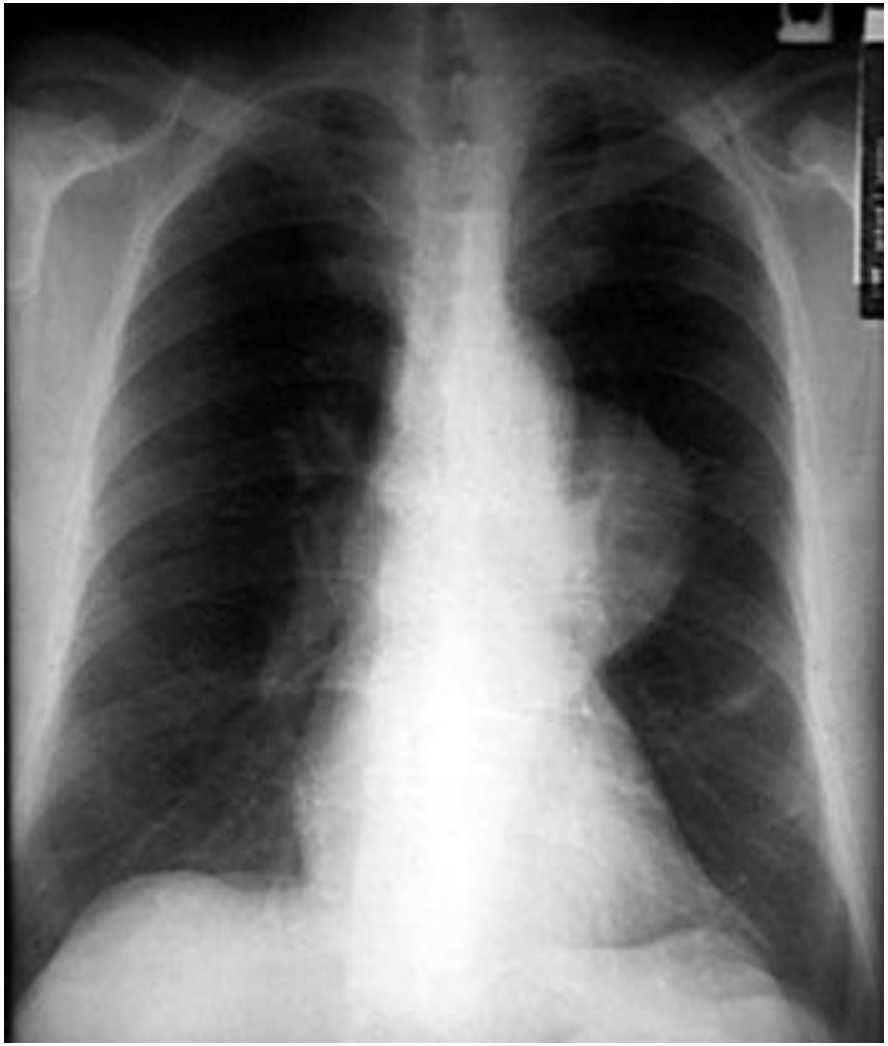
- **CXR**
- Lt middle lung zone , well defined homogenous mass



CASE 9

Mediastinal Mass

- **CXR**
- Lt middle lung zone , partially well defined mediastinal based homogenous mass



CASE 10

Lt
Lung Abscess

- **CXR**
- Lt middle lung zone thick walled cavitary lesion with air fluid level.

CASE I I

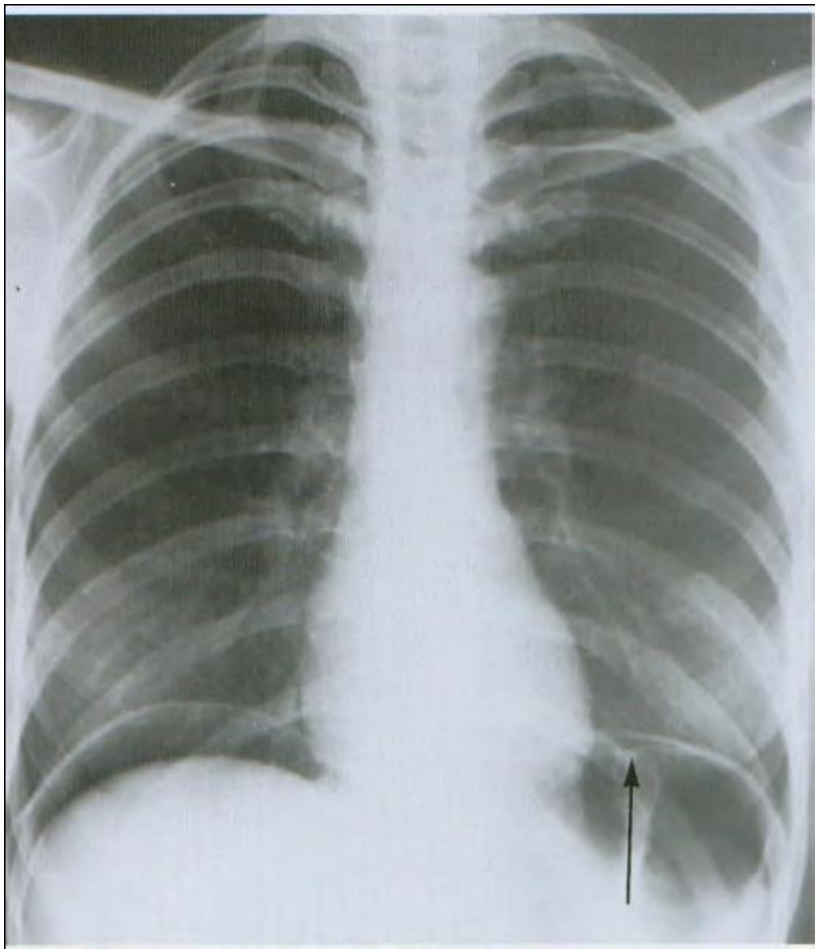
F.B Ingestion

- **CXR**
- Radiopaque rounded foreign body is seen at Lt upper abdomen

CASE 12

Pneumo peritoneum

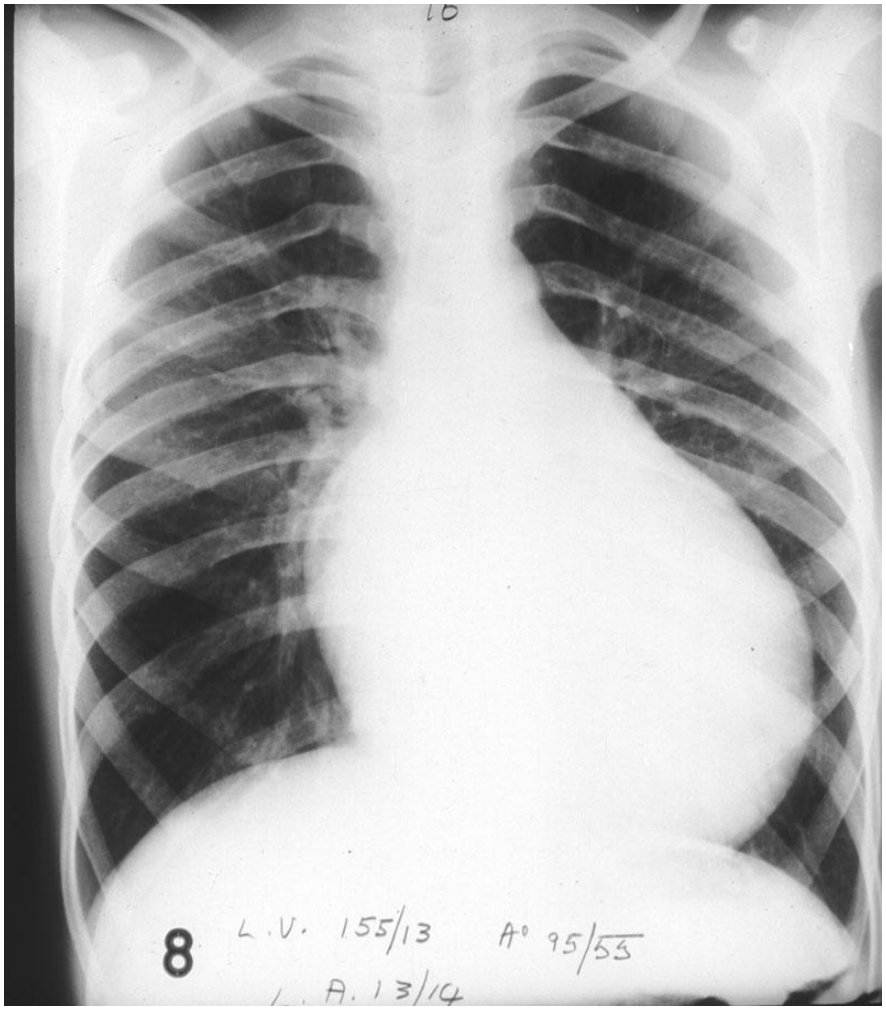
- **CXR**
- Rt sub diaphragmatic crescent shape of air .



CASE 13

Cardiomegally
Rt ventricular Hypertrophy

- **CXR**
- Enlarged cardiac shadow size , with acute Lt cardio-phrenic angle



CASE 14

Dextrocardia

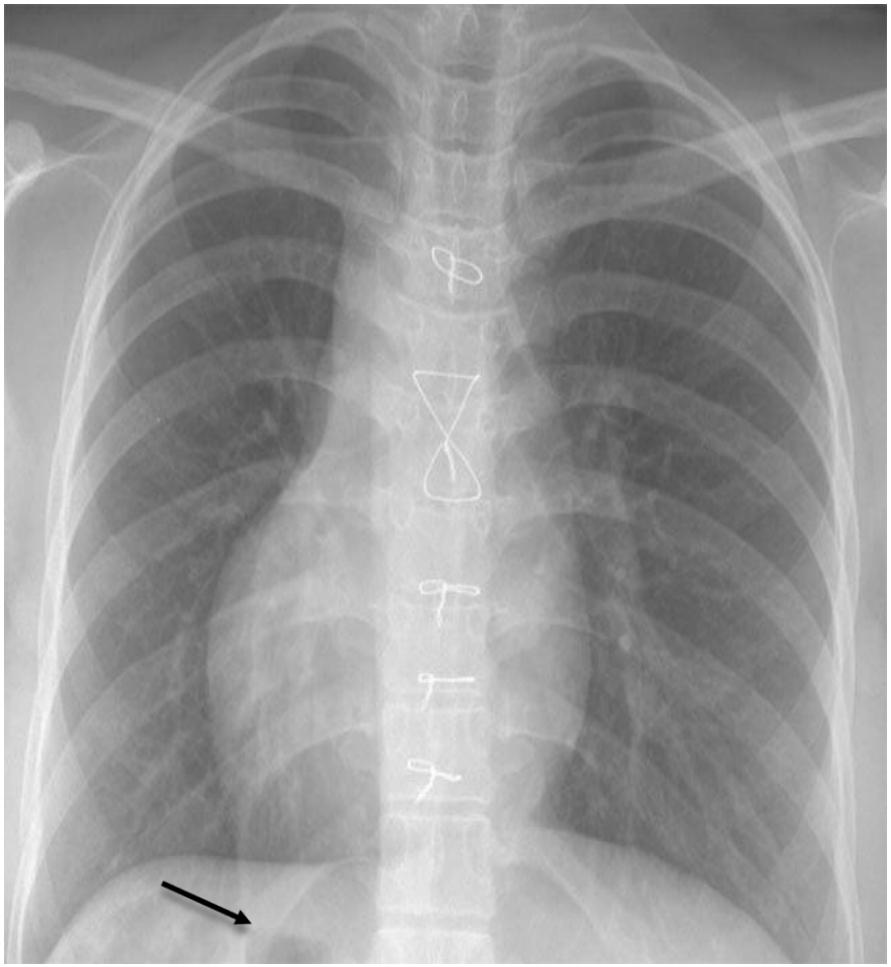
- **CXR**
- inverted shape cardiac shadow (Rt sided apex)

,with preserved Lt gastric bubble .

CASE 15

Situs Inversus Totalis

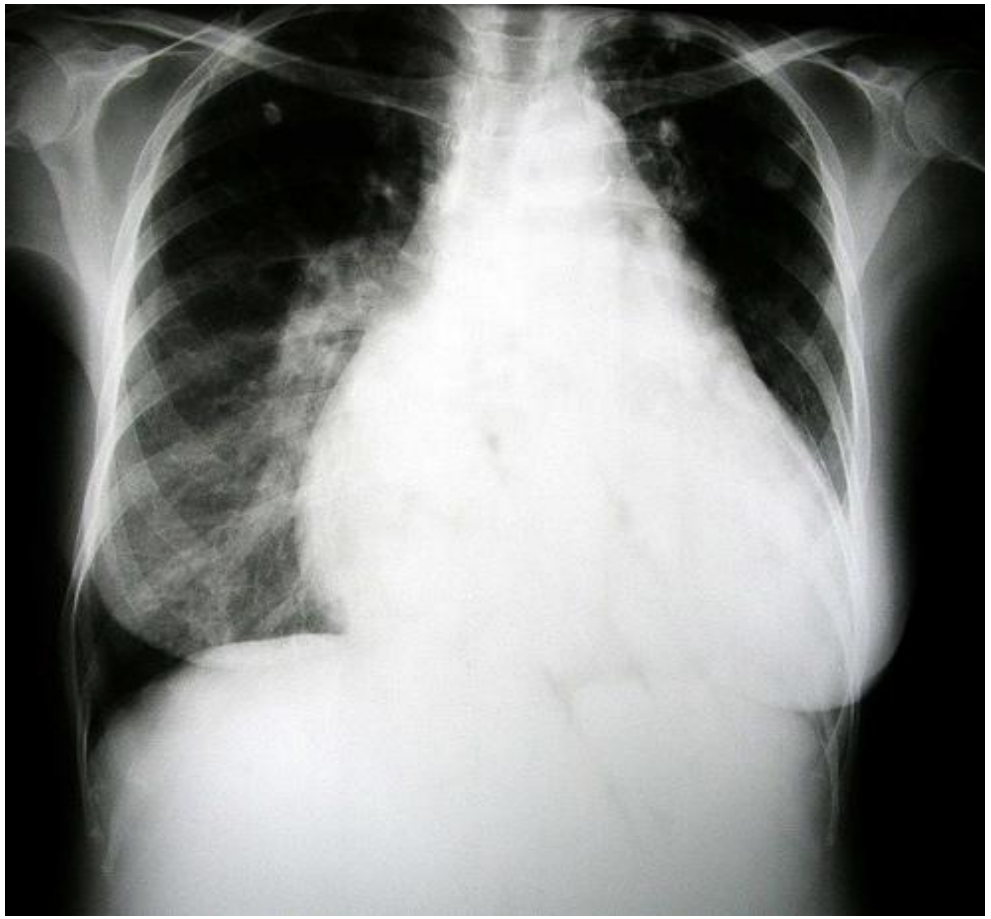
- **CXR**
- inverted shape cardiac shadow (Rt sided apex) ,with Rt sided gastric bubble .

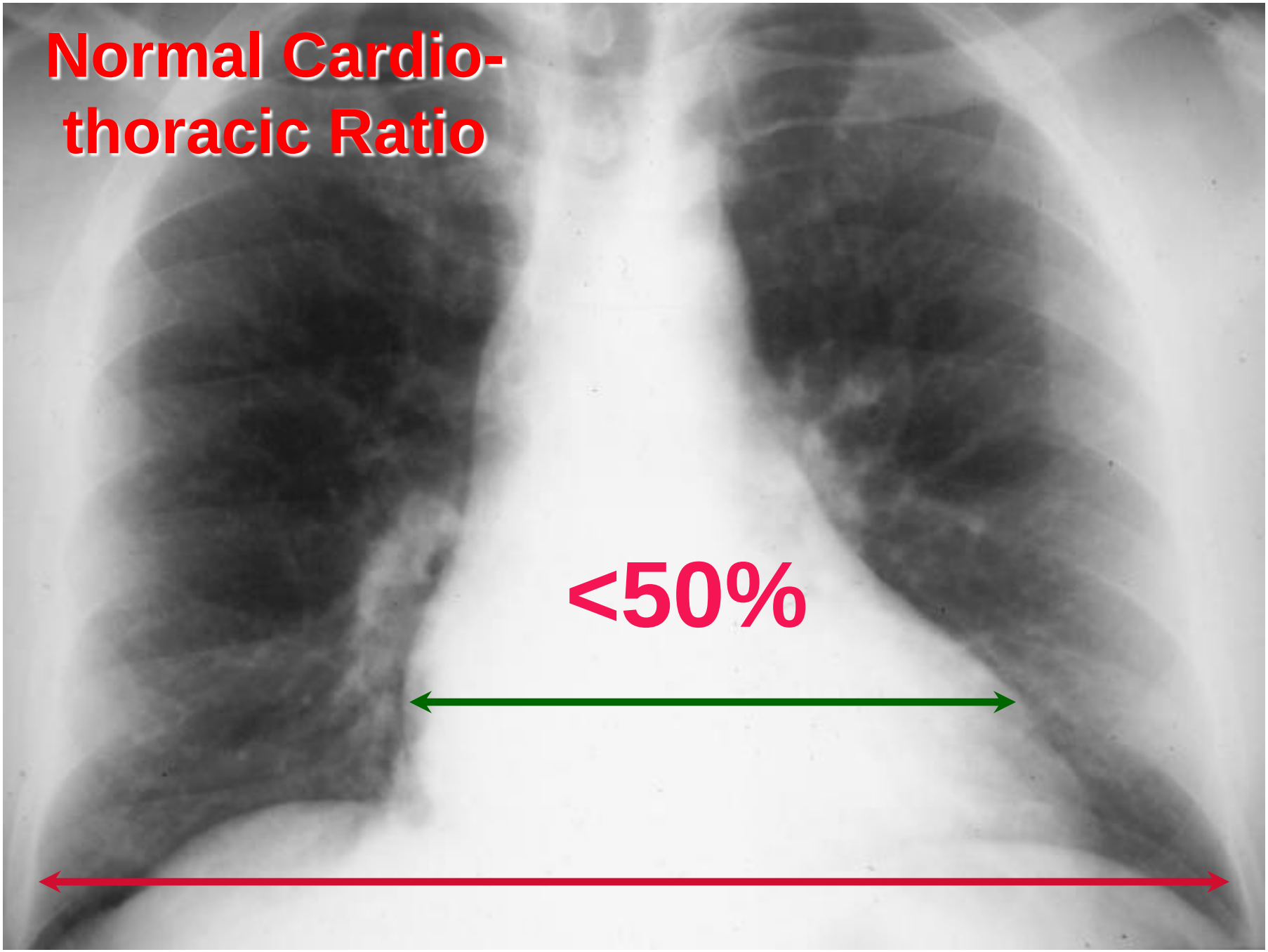


CASE 16

Cardiomegally

- **CXR**
- **Marked enlarged cardiac shadow size.**

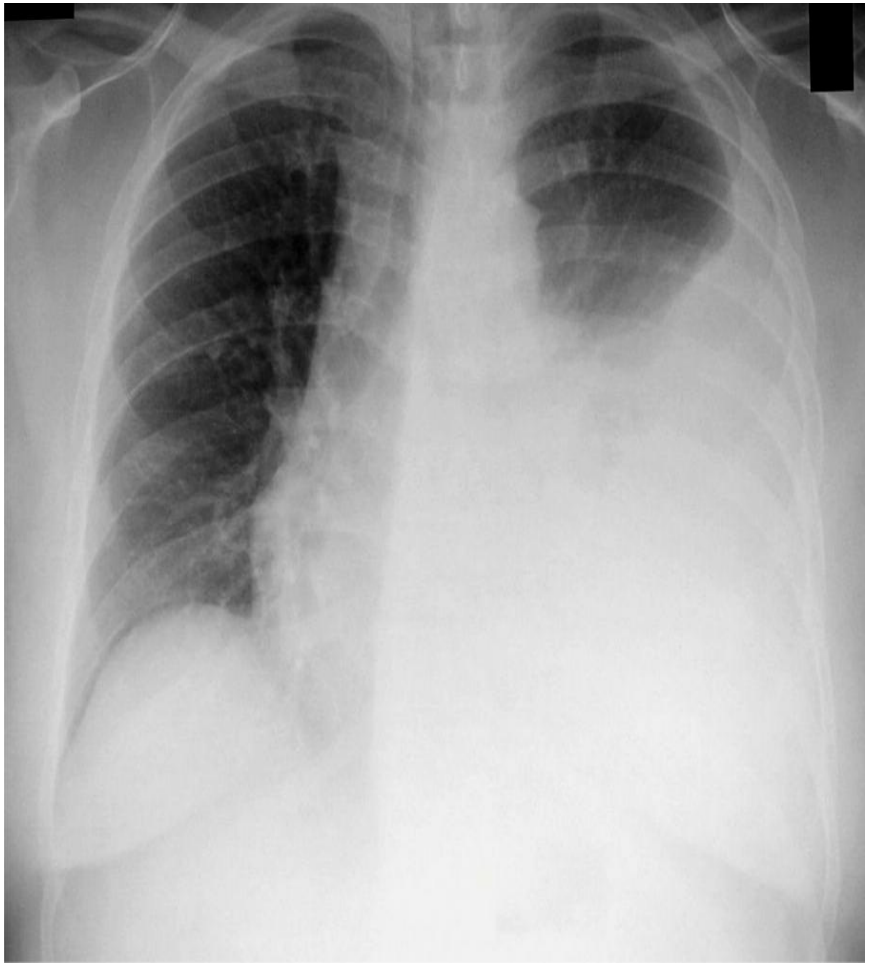



Normal Cardio-
thoracic Ratio
<50%

CASE 17

Lt Massive Pleural effusion

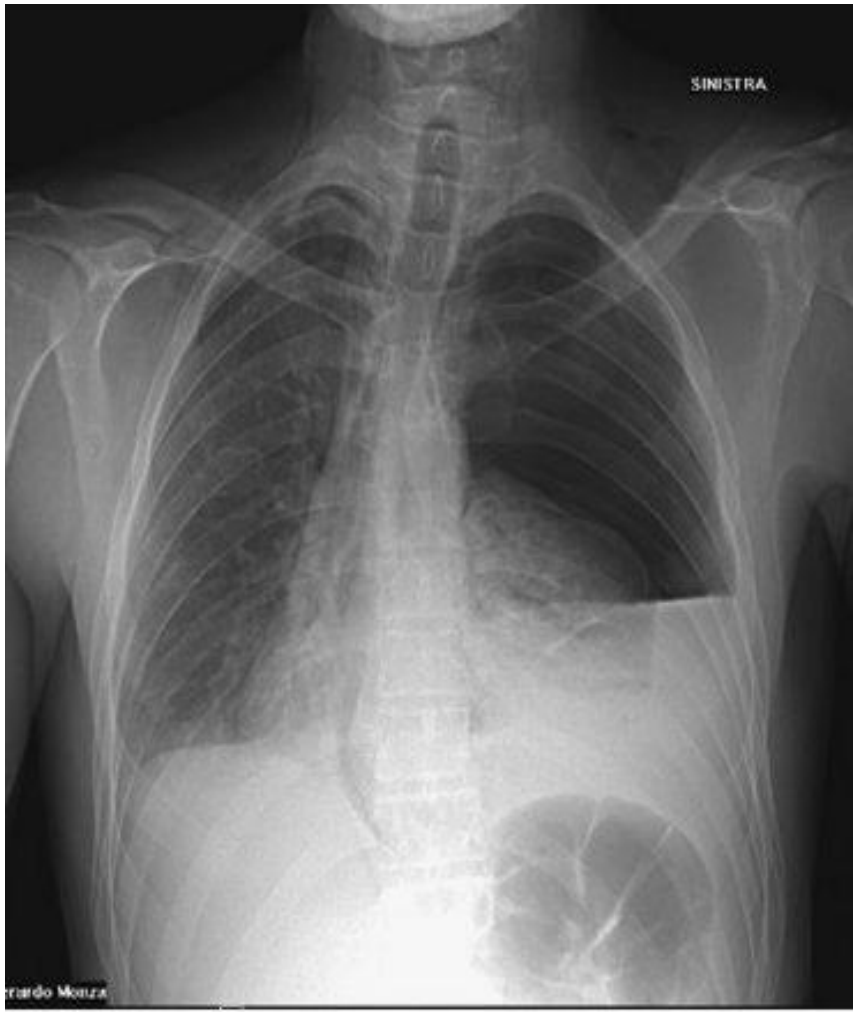
- **CXR**
- Large homogenous opacity involving most of Lt hemi-thorax with upper border rising to axilla.



CASE 18

Lt hydro-pneumo thorax

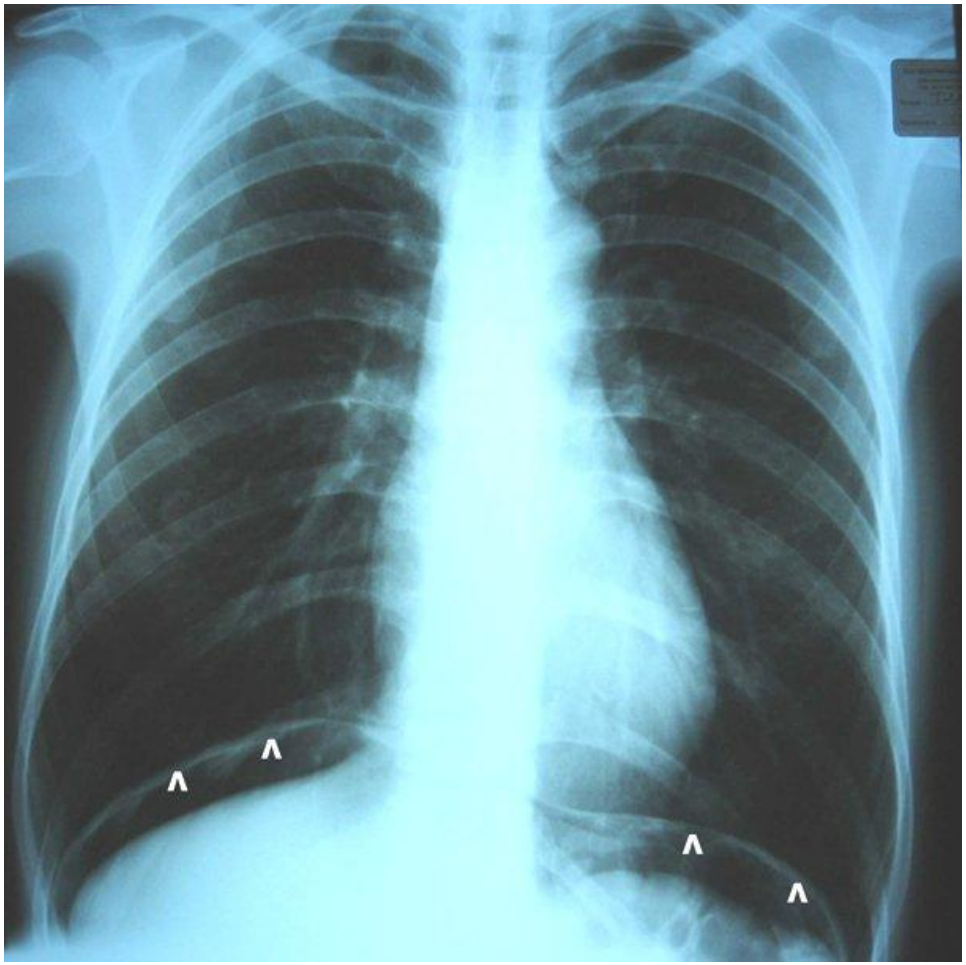
- **CXR**
- Lt lower homogenous opacity with straight upper air fluid level border , & large area of air jet black lucency
- Both compressing Lt lung & shift mediastinal to Rt side



CASE 19

Pneumo peritoneum

- **CXR**
- Bilateral sub diaphragmatic crescent shape of air .



CASE 20

Rt Pneumonia

- **CT Chest**
-
- Rt lung consolidation with air bronchogram

CASE 21

Lt
Tension Pneumothorax
& lung collapse

CXR

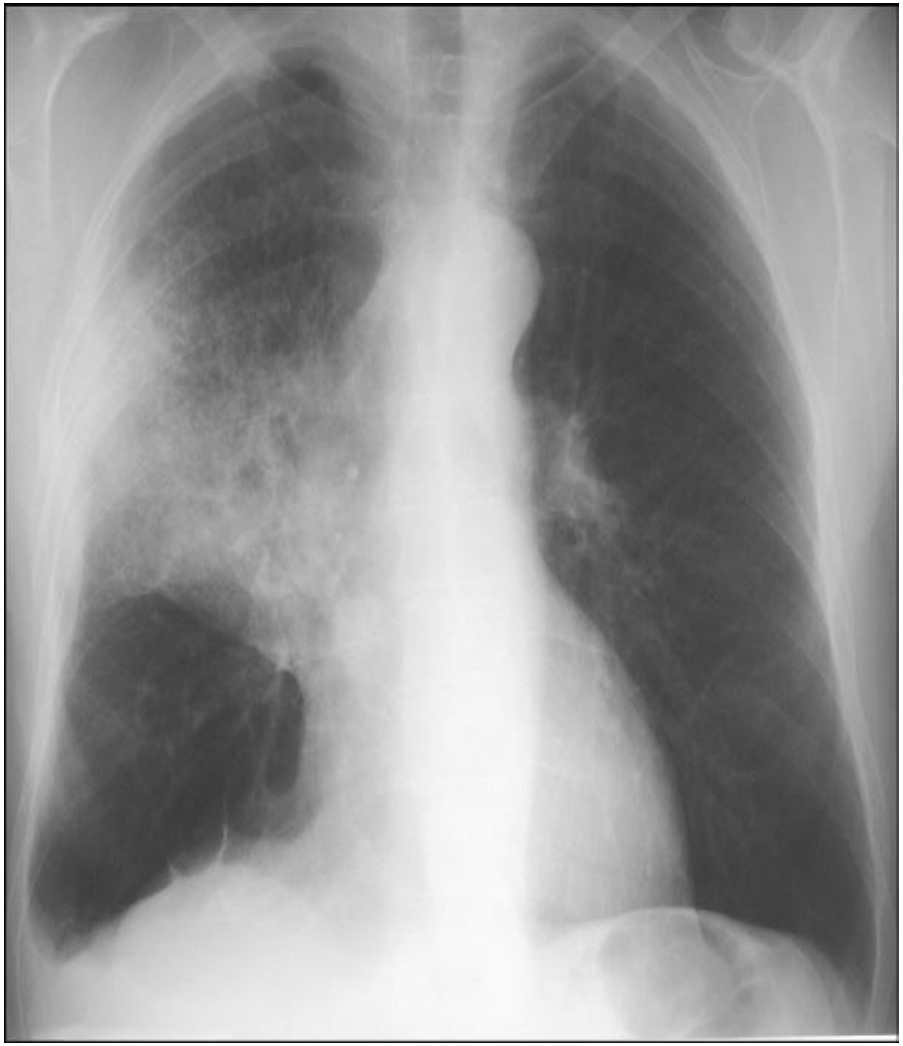
Lt side large area of jet black air is surrounding & compressing collapsed Lt lung & shifting mediastinum to Rt side.

- **Don't Forget** , *Pneumothorax is identified by absent vascular marking.*

CASE 22

Rt
Middle zone pneumonia
& Pleural effusion

- **CXR**
- Rt middle zone patch of consolidation



PART 3

(GIT & UT) Revision Link :

- https://www.youtube.com/watch?v=ElSdX6JjfiU&list=PLqU6GNJJ8xwkhCDPznBYkvG3_NXZt-B17&index=6

Methods of GIT Imaging :

1- Ultrasonography: Abdominal, transesophageal & transrectal

2- ***Plain X Ray***

3- ***X Ray with Contrast***

a- Barium ***swallow*** → *Esophagus*

b- " ***meal*** → *Stomach*

c- " ***follow through*** → *small intestine*

d- " ***enema*** → *Large intestine*

4- ***CT*** (with & with out contrast)

5- ***MRI*** 6- Radioisotope scanning

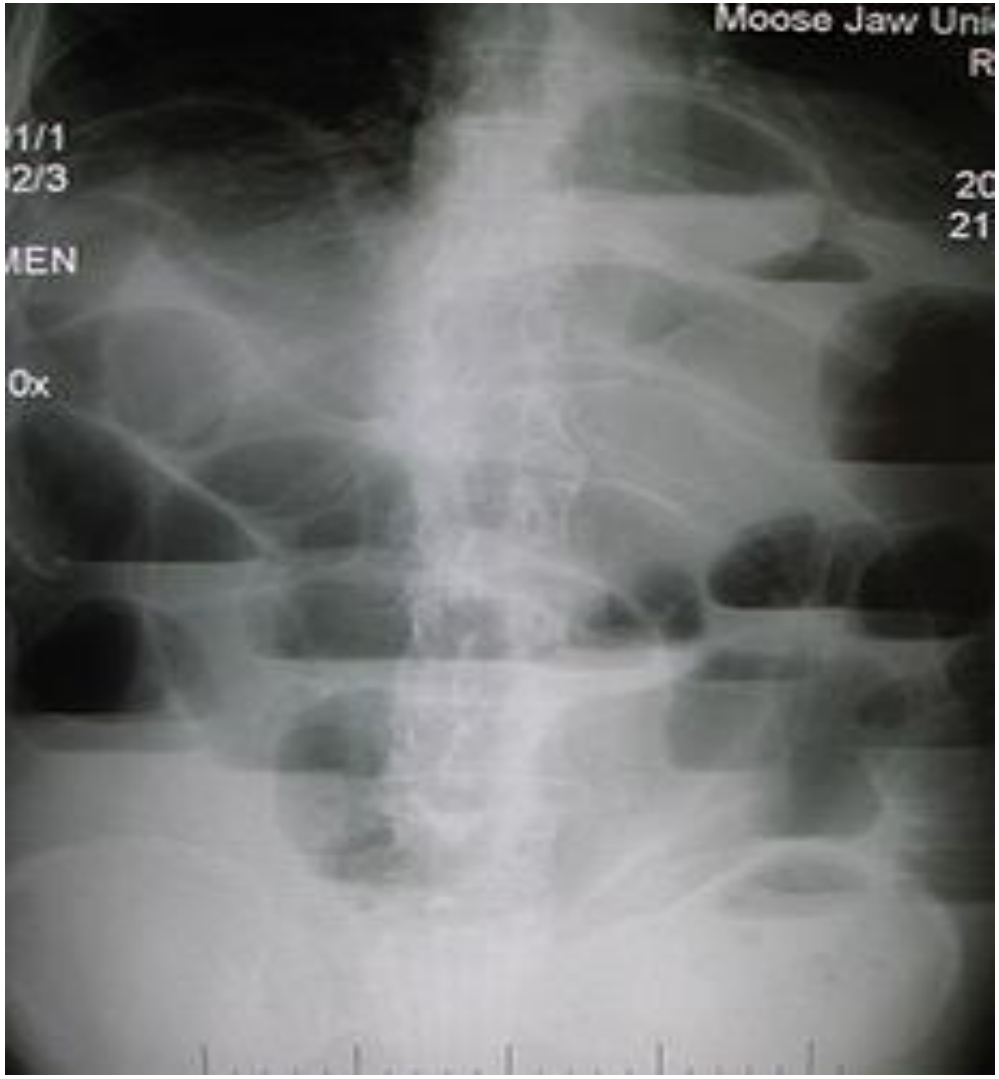
CASE I

Intestinal Obstruction

- **X ray Abdomen**

(Erect Position)

- Multiple air fluid levels.



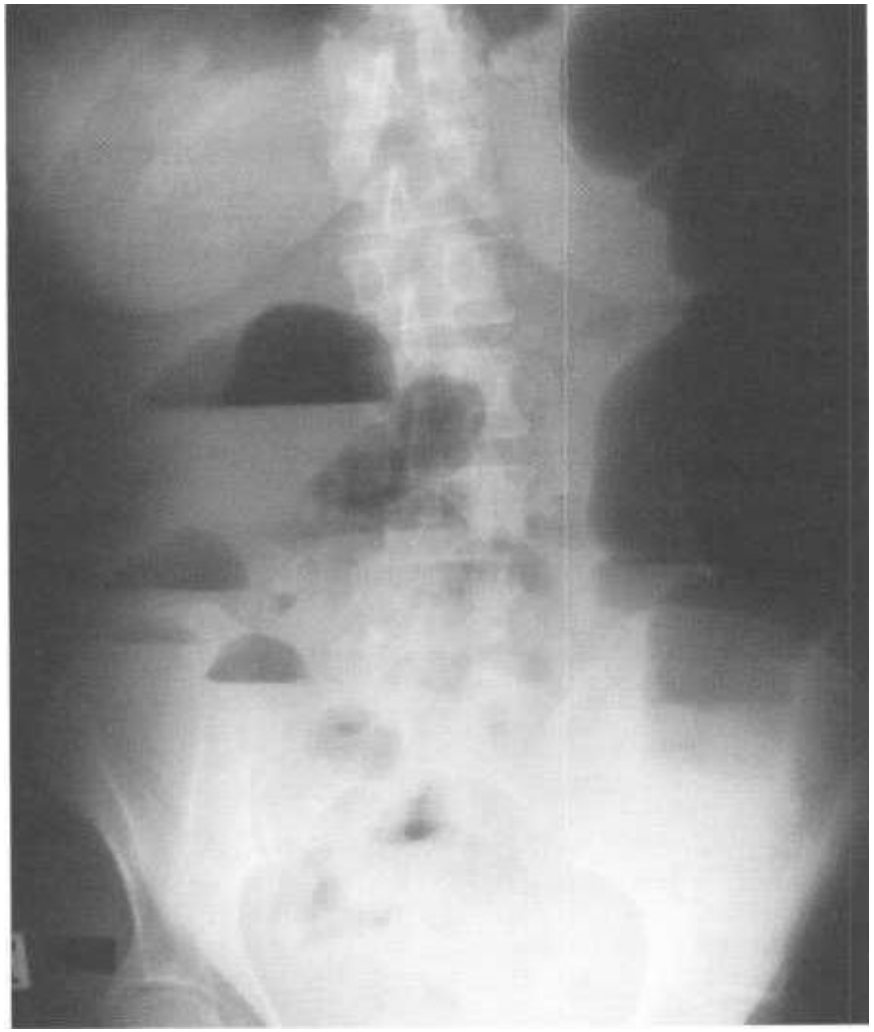
CASE 2

Intestinal Obstruction

- **X ray Abdomen**

(Erect Position)

- Multiple air fluid levels.



CASE 3

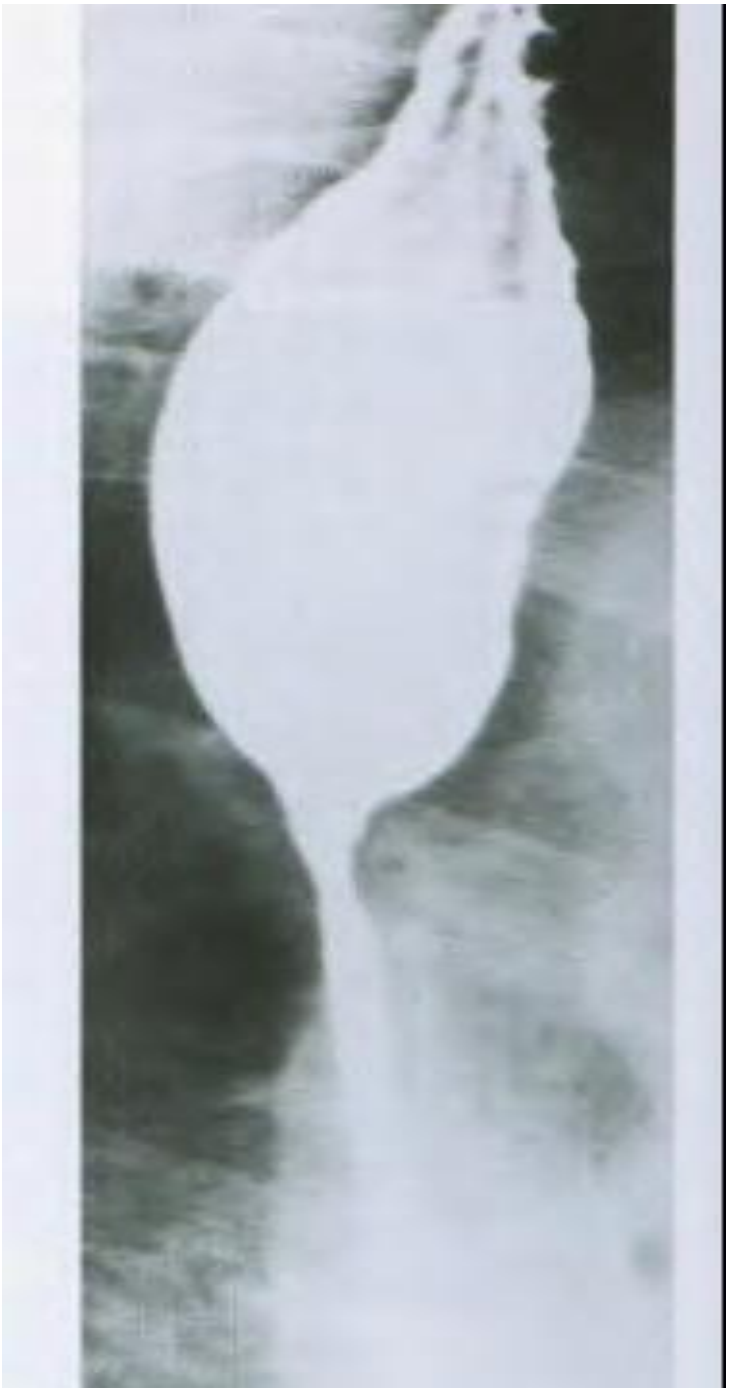
Diverticular disease

Saccular out pouchings mainly seen in the thoracic portion of the oesophagus.

CASE 4

Barium Swallow

Corrosive stricture



CASE 5

Barium Swallow

Diverticulum

CASE 6

Barium Swallow

Achalasia

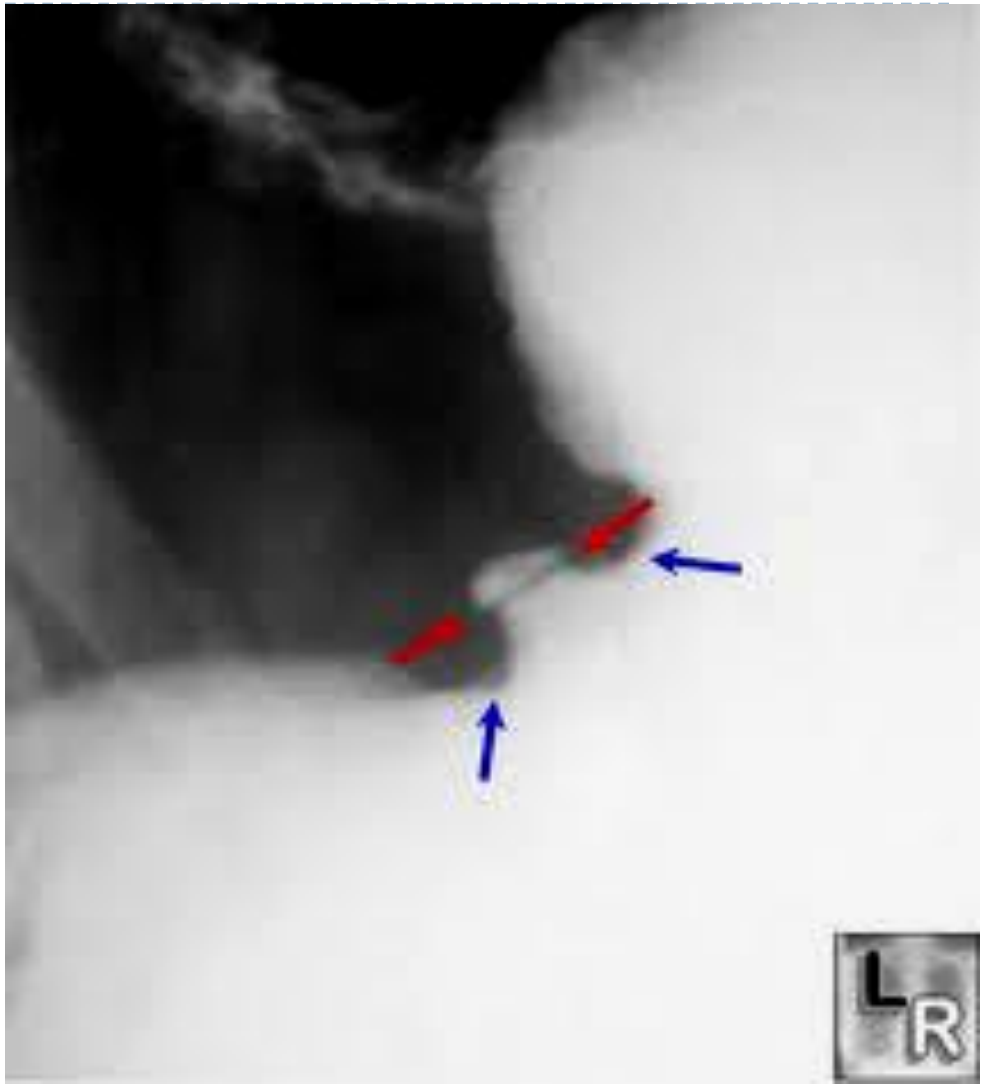
(Parrot Beak Sign)

CASE 7

Hampton line sign
Benign Peptic Ulcer

- **Barium Meal**
- Hampton line sign

, sure sign of **benign** peptic ulcer



CASE 8

Normal

Barium Enema

CASE 9

Ulcerative Colitis

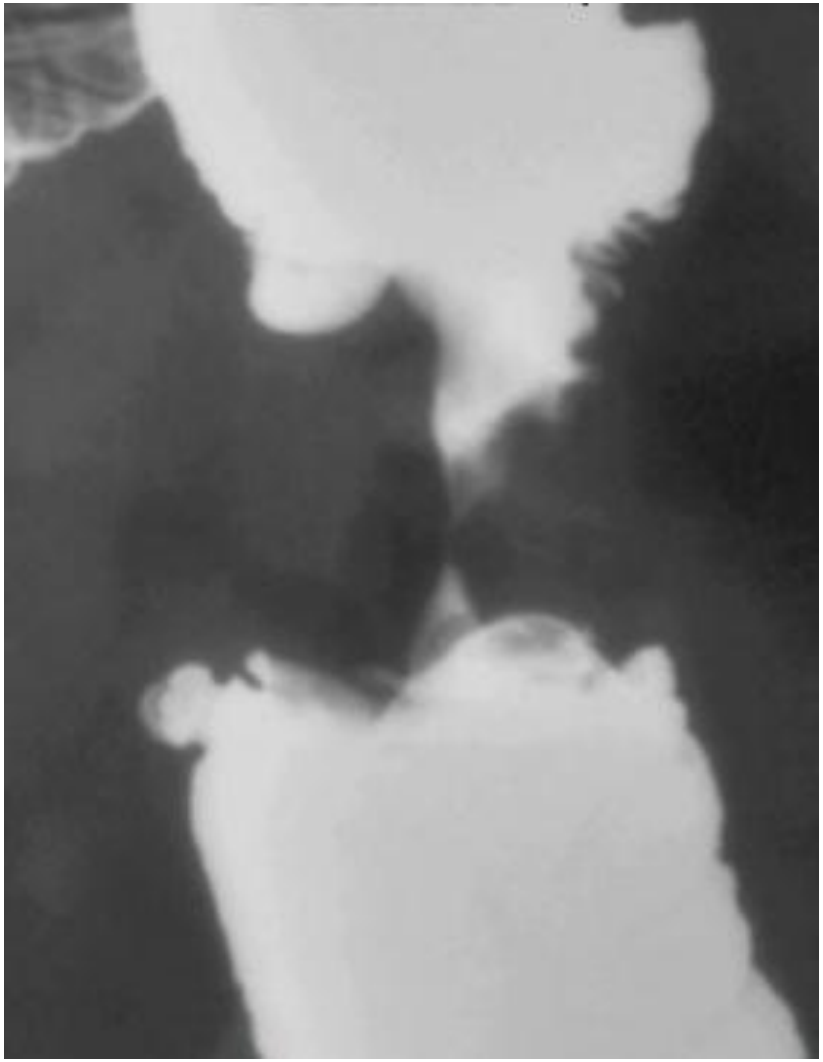
- **Barium Enema**
- Featureless colon

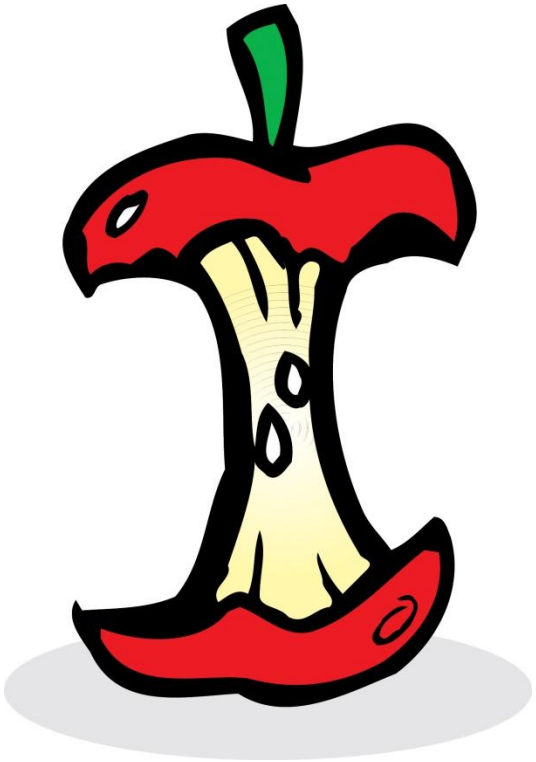
(*Diffuse loss of haustrations*)

CASE 10

Colonic malignant Stricture (Apple Core sign)

- **Barium Enema**
- Ascending colon stricture of apple core Appearance



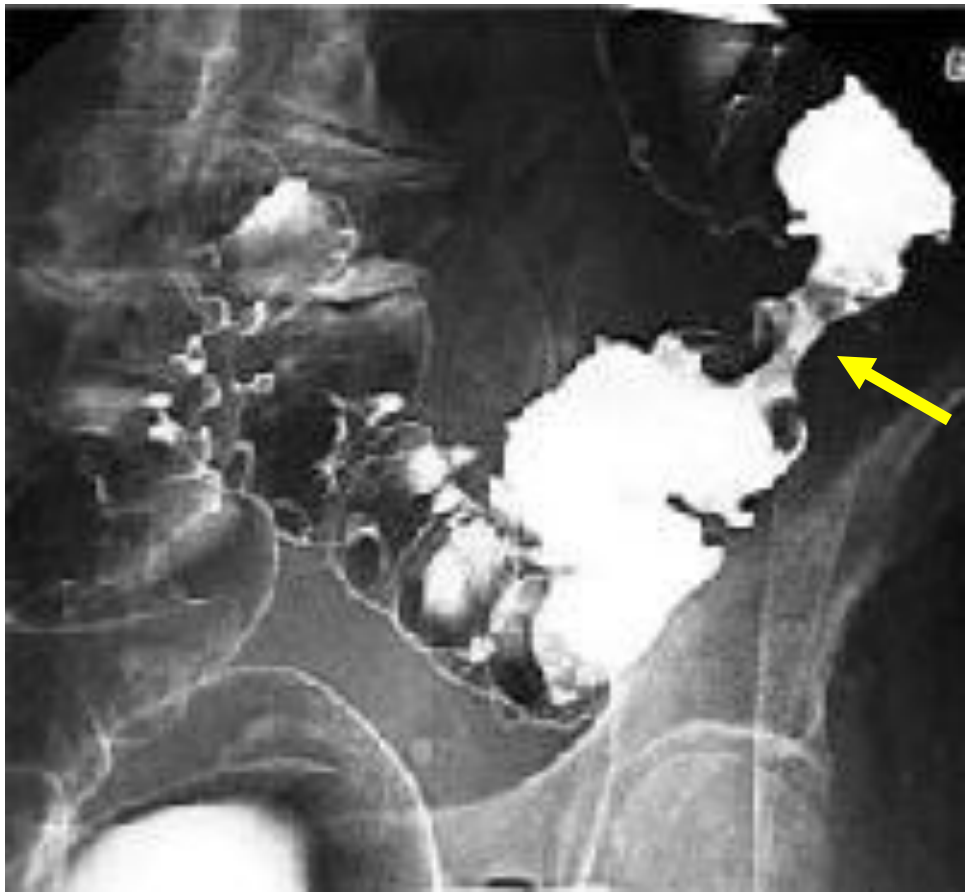


Apple Core sign

CASE 11

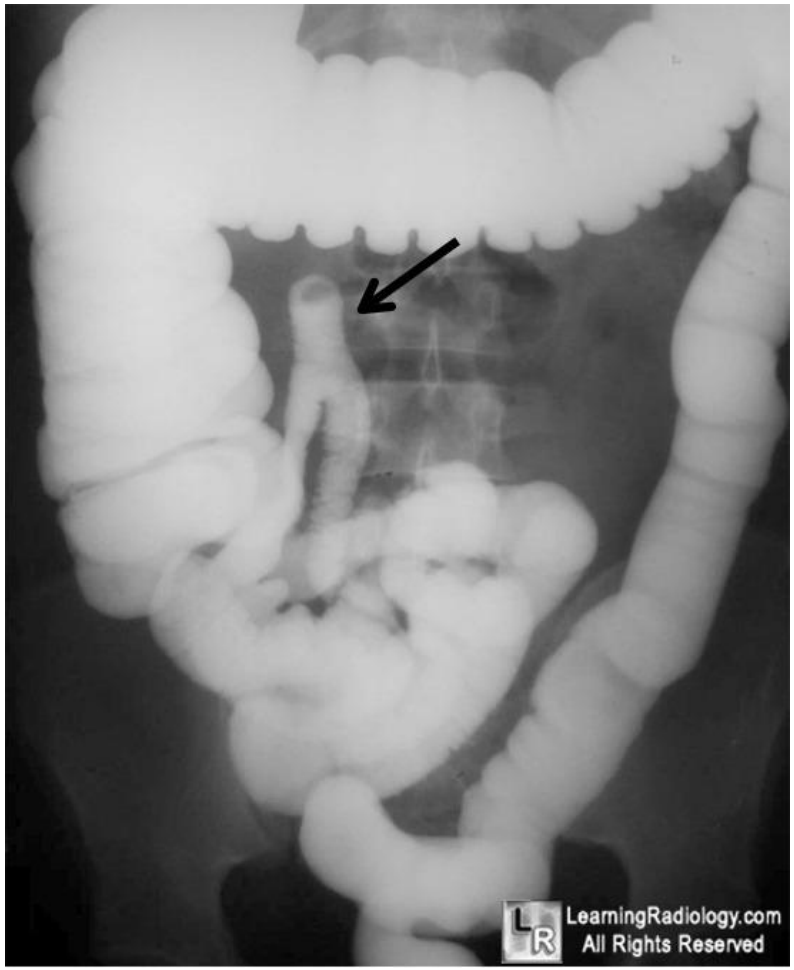
Malignant Stricture of the colon

- **Barium Enema**
- colonic stricture of apple core Appearance



CASE 12

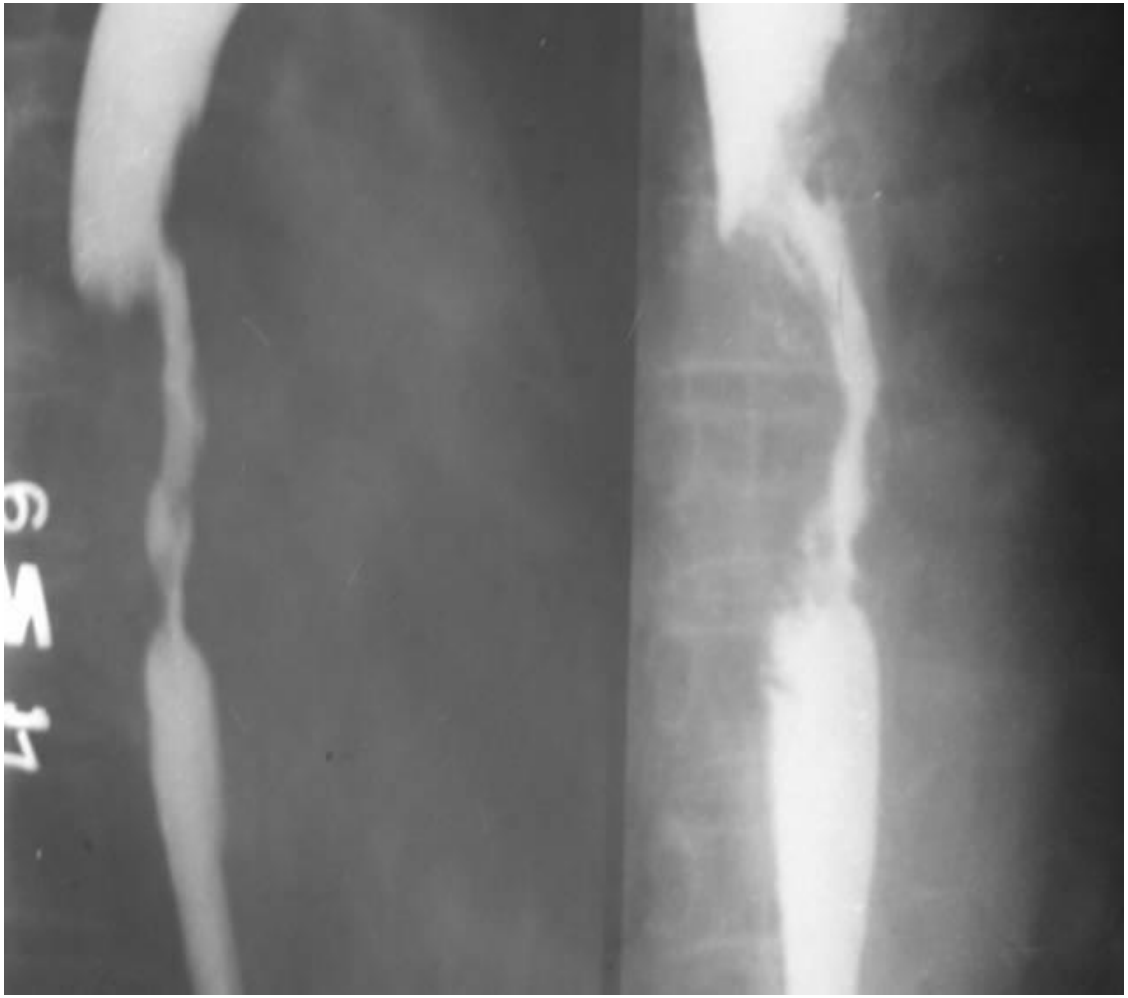
Mekels Diverticulum

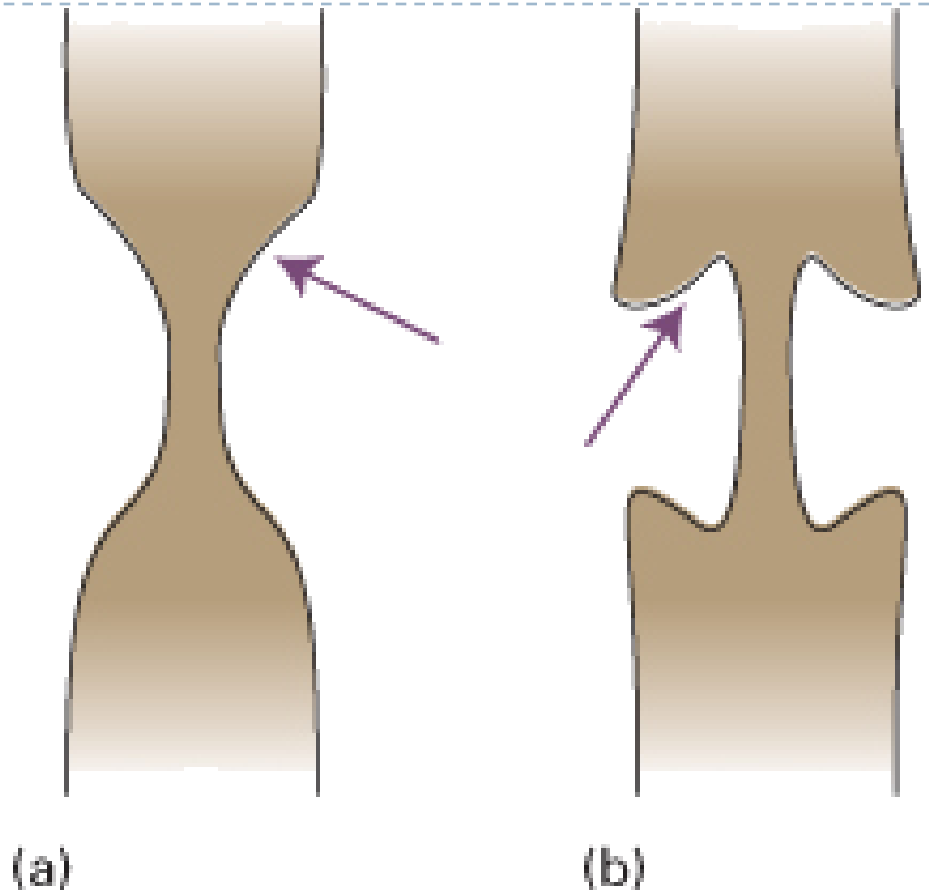


CASE 13

Esophageal Malignant Stricture

- **Barium Swallow**
- Middle esophageal stricture with shouldering sign



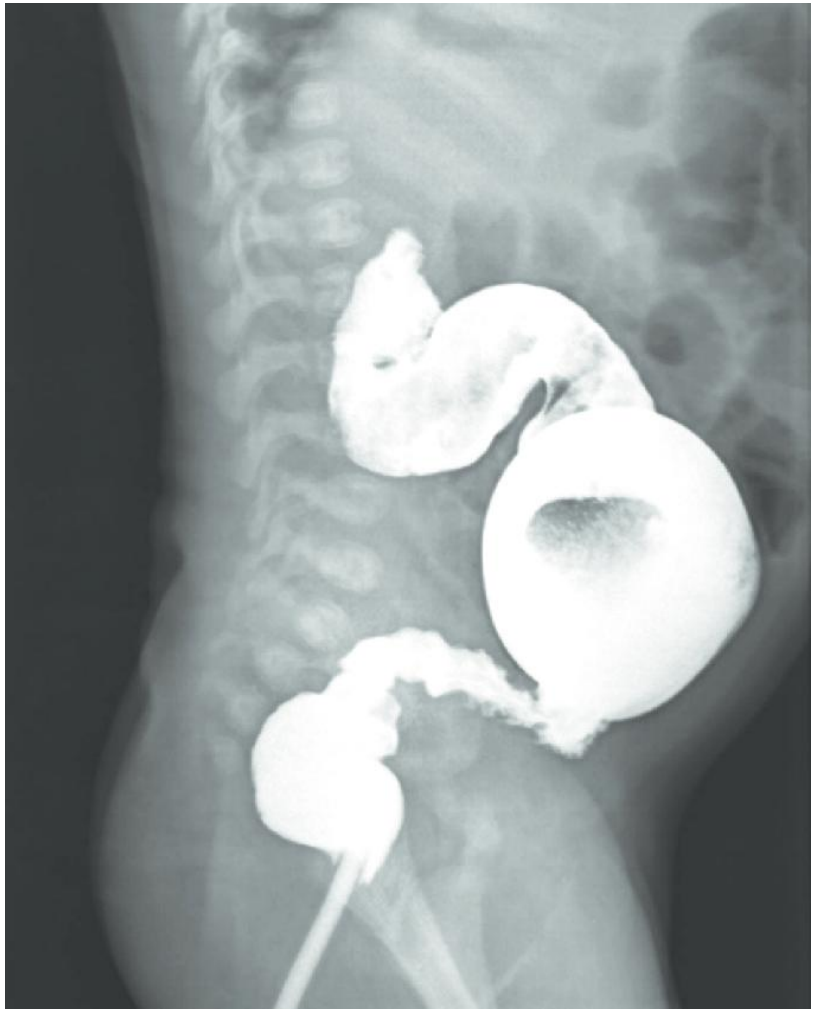


- (a) Benign (smooth) stricture Vs
- (b) Malignant stricture with shouldering sign

CASE 14

Hirschsprung disease

- **Barium Enema**
- Colonic dilatation with distal rectal stenotic segment



CASE 15

Imperforate Anus

- **Invertogram**
- Colonic gases not reaching site of anus (coin)

PART 4

URINARY TRACT

(UT Imaging) Revision Link :

- https://www.youtube.com/watch?v=7i9WdKvchII&list=PLqU6GNJJ8xwkhCDPznBYkvG3_NXZt-B17&index=7

Methods of UT Imaging :

*1- **Ultrasonography:*** Abdominal,

2- ***Plain X Ray***

3- ***X Ray with Contrast***

a- IVU → *Intra Venous Urography*

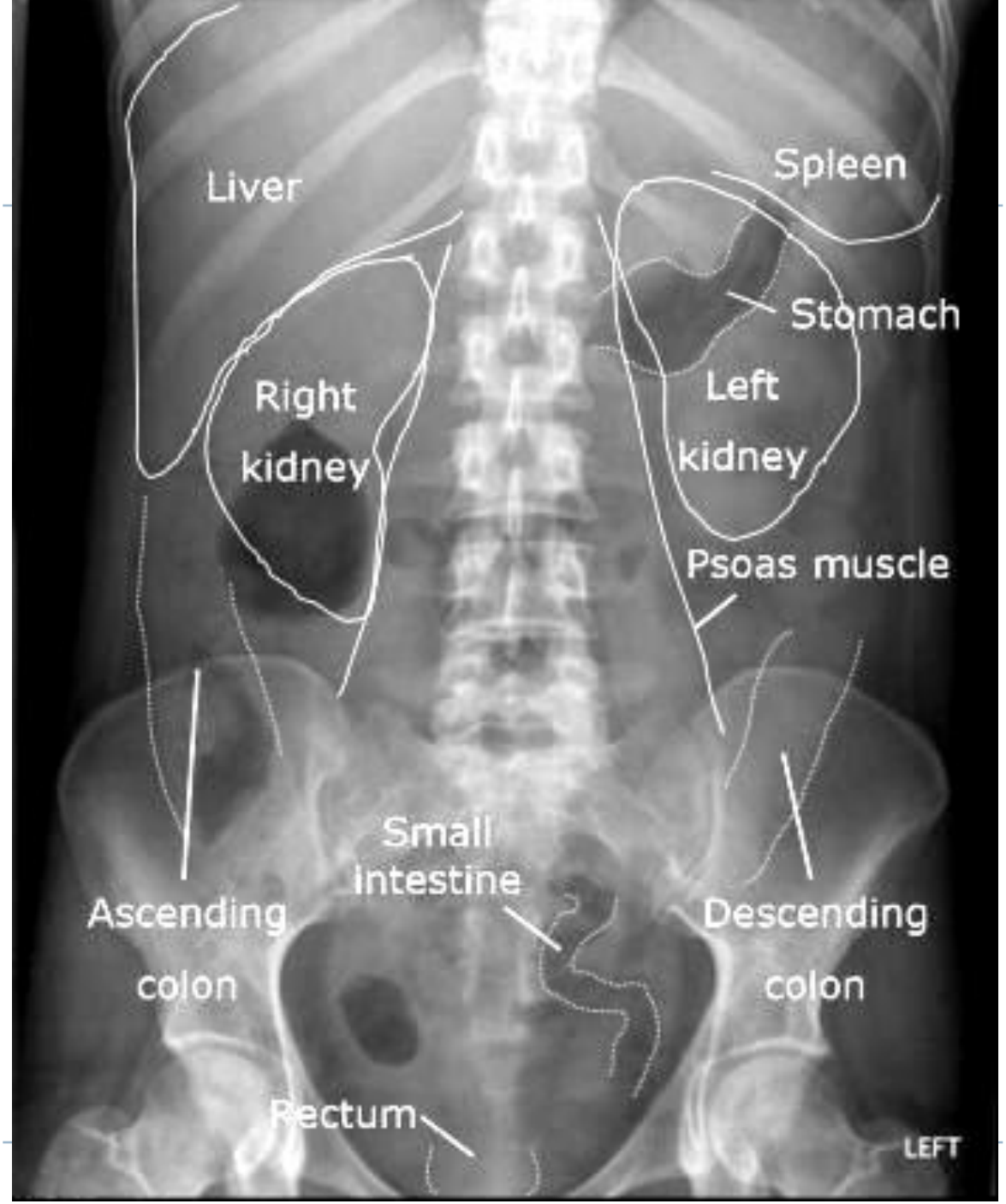
…… & Others

4- ***CT*** (with & with out contrast)

5- ***MRI*** 6- Radioisotope scanning

CASE I

- **Normal PUT**


Liver
Spleen
Stomach
Right
kidney
Left
kidney
Psoas muscle
Small
intestine
Ascending
colon
Descending
colon
Rectum
LEFT

CASE 2

Rt Ureteric Stone

- **PUT**
- Rt side radiopaque calecular shadow opposite to Lumber 3 transverse process.

CASE 3

Lt Ureteric Stone

- **PUT**
- Lt side radiopaque calecular shadow opposite to Lumber 4 transverse process.

CASE 4

Normal IVU

CASE 5

- **Normal IVU**

CASE 6

Lt

Hydronephrosis & Hydroureter

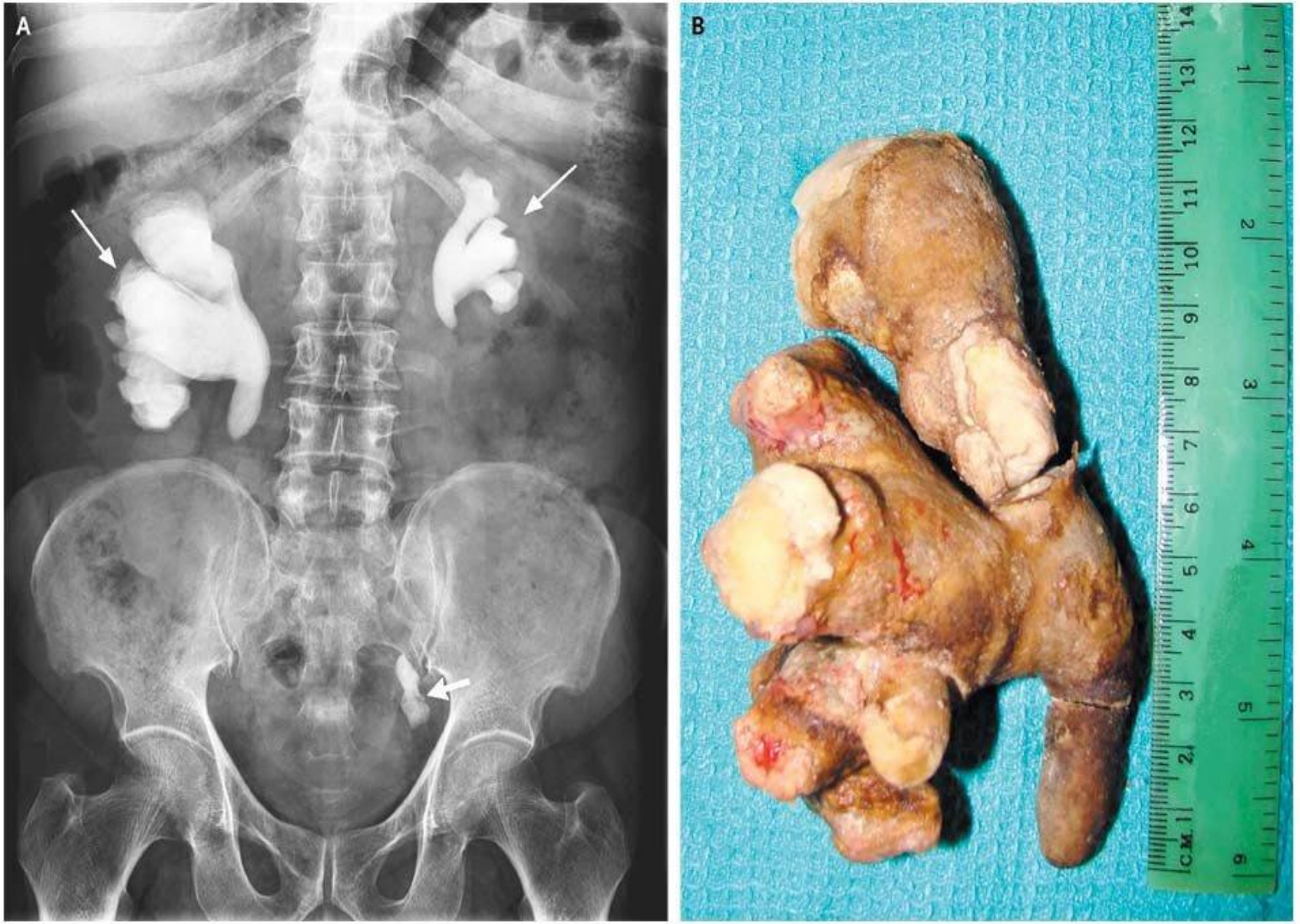
- **IVU**
- Lt

  Hydronephrosis & Hydroureter

CASE 7

Bilateral Stag horn stone

- **PUT**
- Bilateral radiopaque large branched stones.


A
B

CASE 8

Lt Double Ureter

- **IVU**
- Duplicated Lt ureter

CASE 9

U.B. Mass

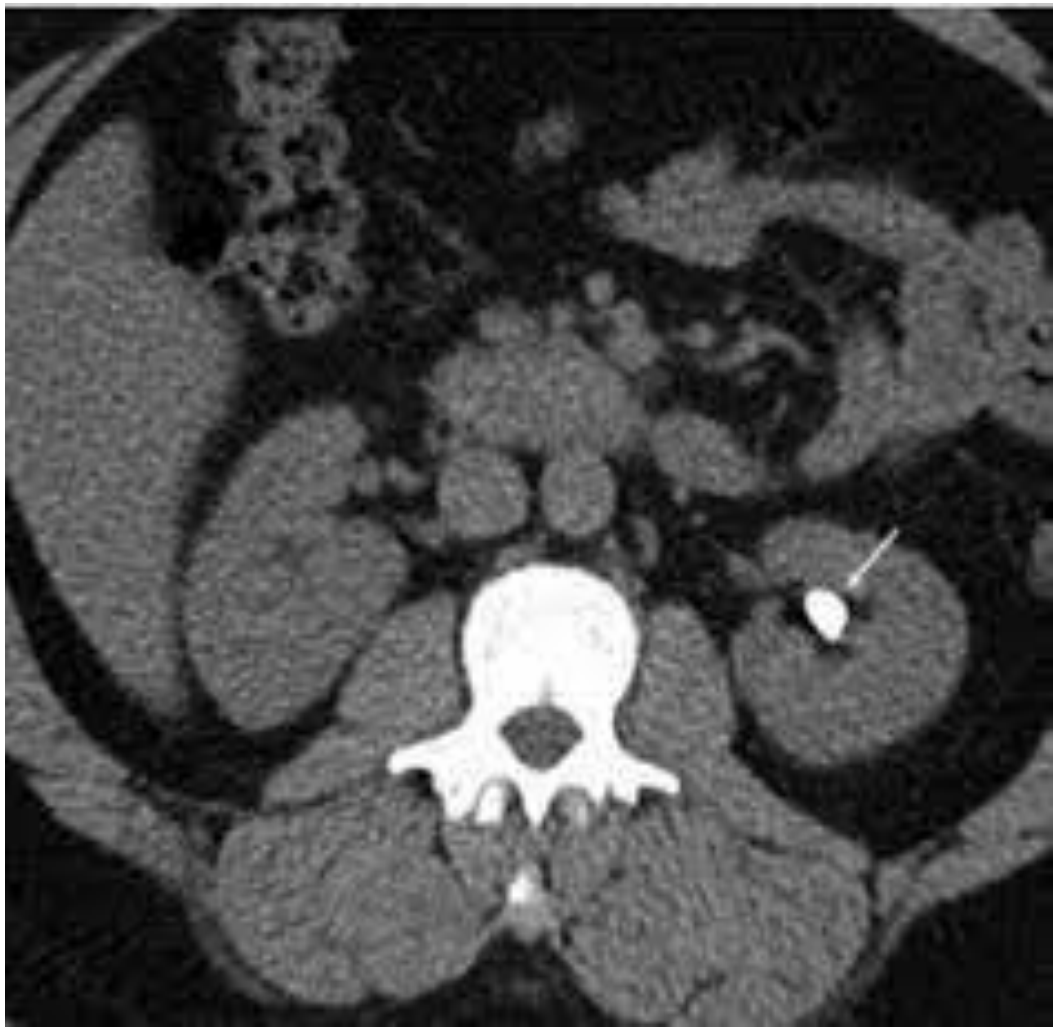
- IVU
- Urinary bladder filling defect

CASE 10

Lt renal stone

- **CTU**
- Lt renal radio dense

Stone



PART 5

MISCELLANEOUS

CASE 1

Rickets

- **X ray Hand**
- **Mention signs of Rickets ?**

CASE 2

Silver beaten sign

- **X ray Skull** (Lateral View)
- Silver beaten sign of increased intra cranial tension. associated with **craniosynostosis**

CASE 3

Green Stick Fracture

- **X ray** Forearm
- Radial and ulnar shafts show angulated greenstick fractures

CASE 4

Hair on end sign

- **Skull X ray** – Lateral View
- thickening of trabeculae & wide diploic space
- **Causes include:**
  - Thalassemia major
  - Sickle cell disease
  - hereditary spherocytosis
  - iron deficiency anemia

CASE 5

Rickets

- **X ray Both Knees**

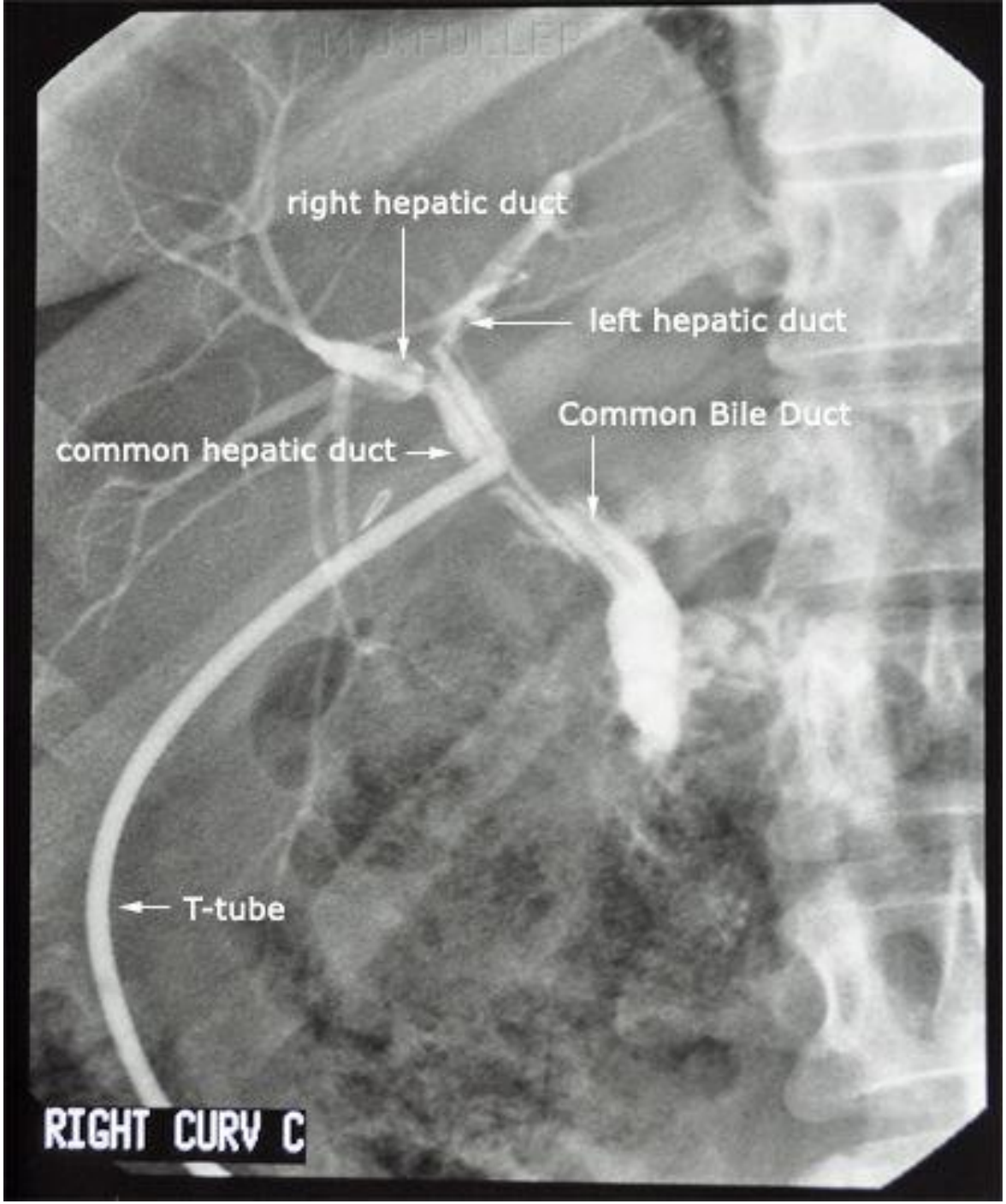
A-P View

- **you didn't search about signs of Rickets ☺ !?**

.

CASE 6

Normal T tube Cholangiogram


right hepatic duct
left hepatic duct
Common Bile Duct
common hepatic duct
T-tube
RIGHT CURV C

CASE 7

Swallowed F.B.

- **X ray neck** – Lateral View
- Radio-opaque FB seen

behind tracheal air column

At the site of upper esophagus

(Swallowed coin)

Don't Forget …Any case of FB swallow , X ray follow up From **mouth** to **Anus** .

Sources & Further details :

- **Introduction To imaging Modalities** (Video Lecture)

https://www.youtube.com/watch?v=RTaEDka95-E&list=PLqU6GNJJ8xwkhCDPznBYkvG3_NXZt-B17&index=1

- **Radiology Film Reading** (Video Lecture)

https://www.youtube.com/watch?v=ek7kqY3WXSc&list=PLqU6GNJJ8xwkhCDPznBYkvG3_NXZt-B17&index=2

- **5th year Medical Students Revision** (Video Lecture)

https://www.youtube.com/watch?v=ElSdX6JjfiU&list=PLqU6GNJJ8xwkhCDPznBYkvG3_NXZt-B17&index=6

- **Radiology Lectures For Medical Students** (Video)

https://www.youtube.com/watch?v=RTaEDka95-E&list=PLqU6GNJJ8xwkhCDPznBYkvG3_NXZt-B17

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Good Luck

Sep 2021

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