

# Lectures Pictures

For The Mini OSCE



**FIGURE 4-5**

**Facial appearance in hypothyroidism.** Note puffy eyes and thickened, pale skin.





**A**



**B**



**C**

**FIGURE 4-7**

**Features of Graves' disease. A.** Ophthalmopathy in Graves' disease; lid retraction, periorbital edema, conjunctival injection, and proptosis are marked. **B.** Thyroid dermopathy over the lateral aspects of the shins. **C.** Thyroid acropachy.



**GRAVE'S  
OPHTHALMOP  
ATHY**



# Acromegaly



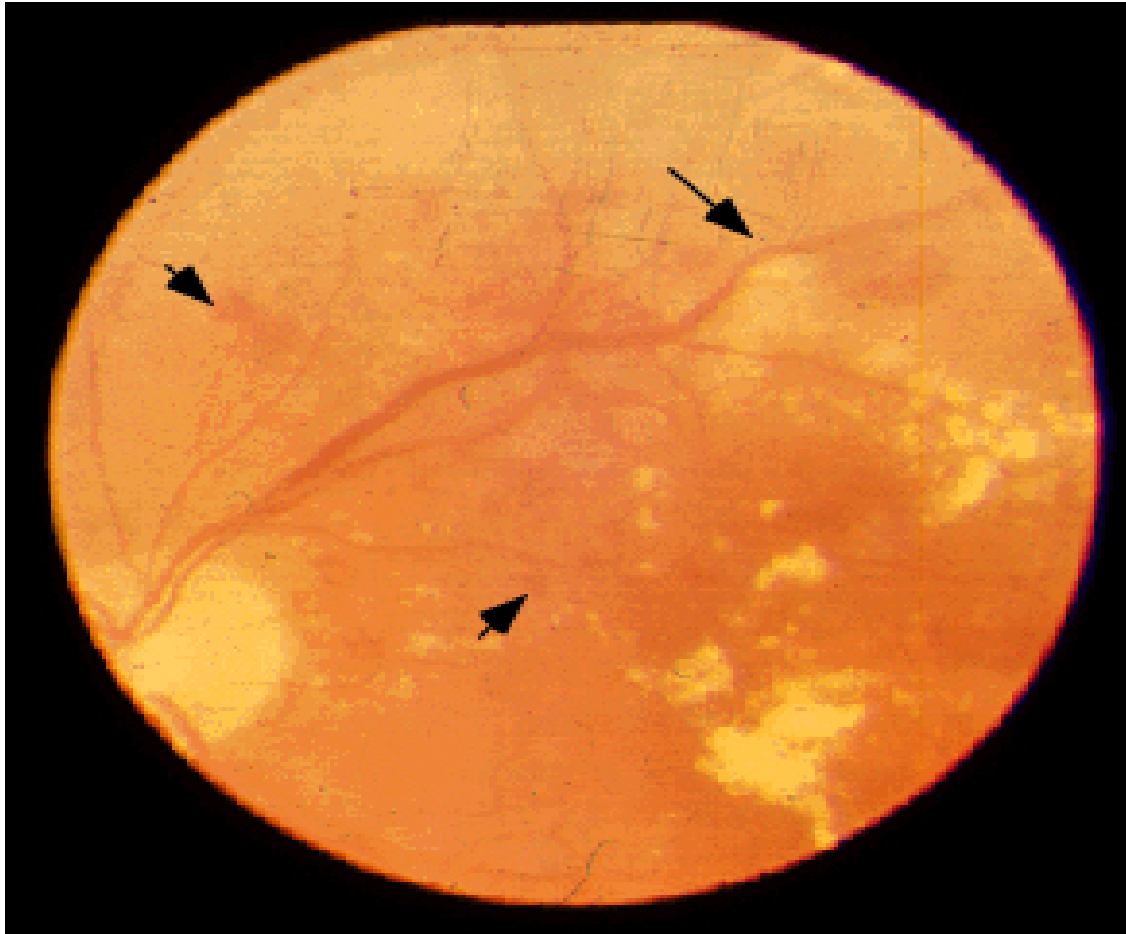
# A-sagittal T1 weighted Normal pituitary MRI

## B-pituitary macroadenoma

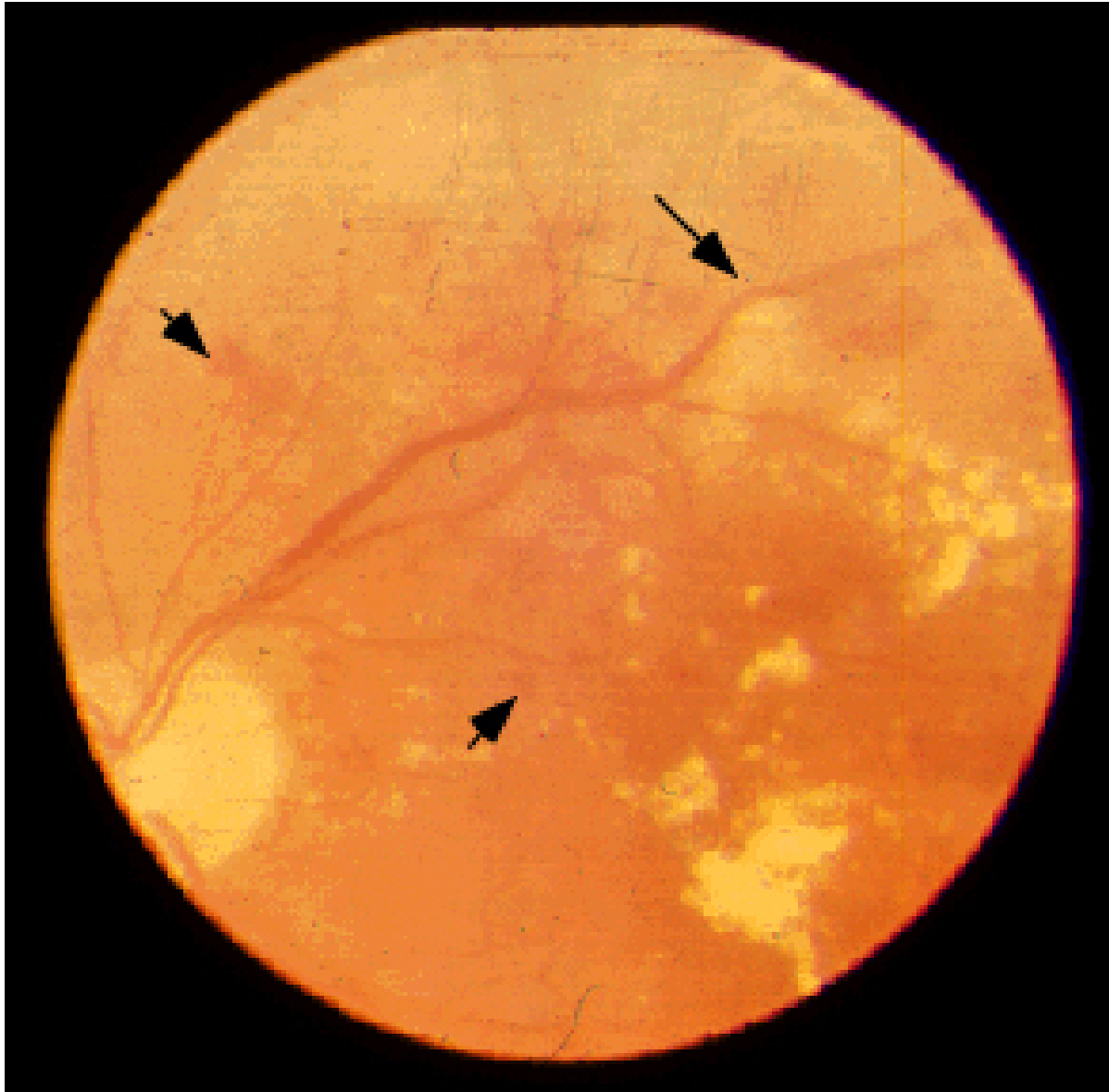




- **Background diabetic retinopathy showing microaneurysms (small arrows) and hard exudates. The blood vessels can be seen running over the hard exudates (large arrow), indicating that the exudates are due to leakage in the deeper retinal layers (in contrast to soft exudates, which are microinfarcts in the superficial retinal layers with obliterated blood vessels). Many of the hard exudates are clustered around the macula, which is at the periphery at about four o'clock.**

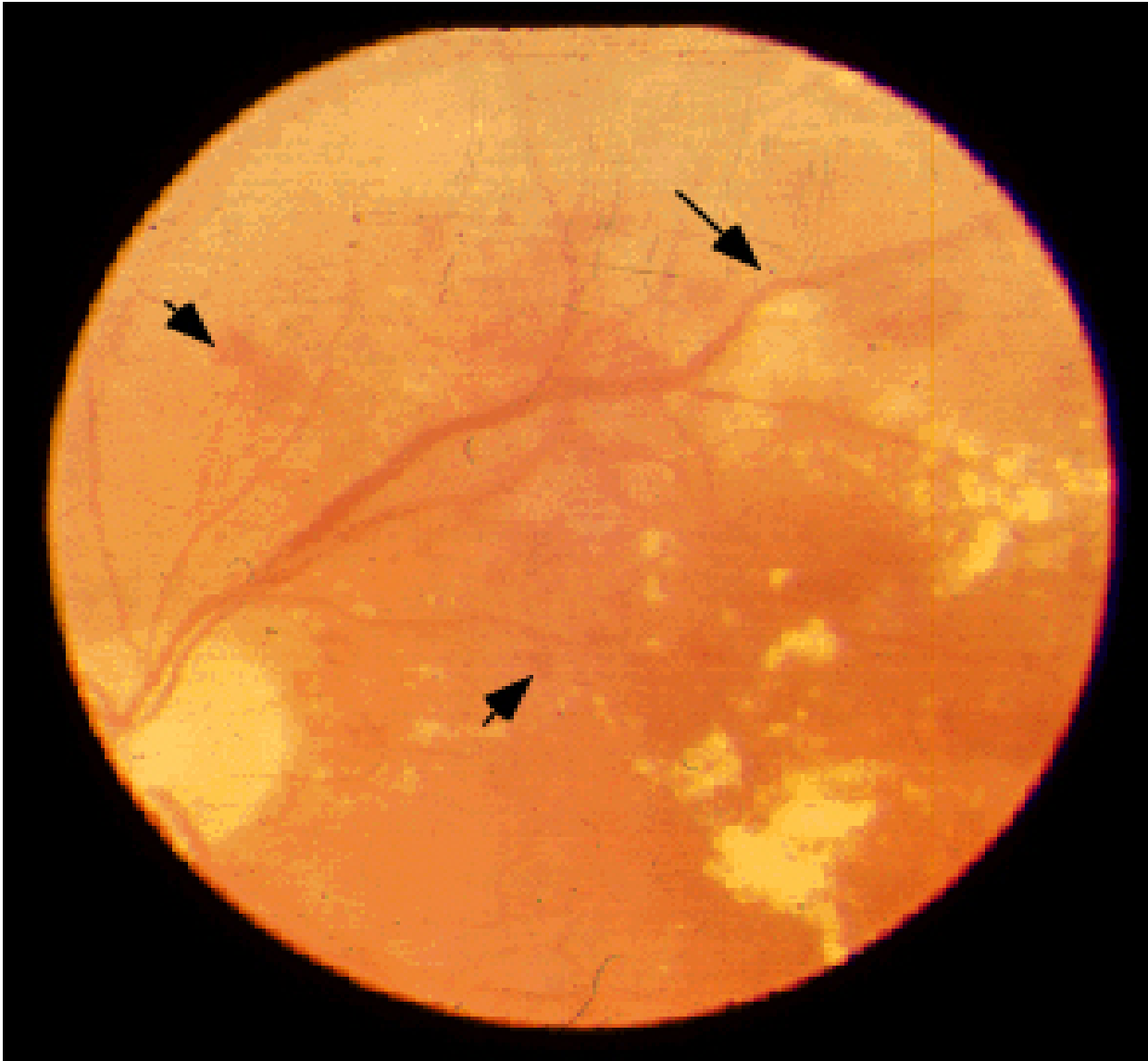


- **Diabetic retinopathy, showing several blot hemorrhages (arrows). These lesions are due to vascular occlusion and rupture.**

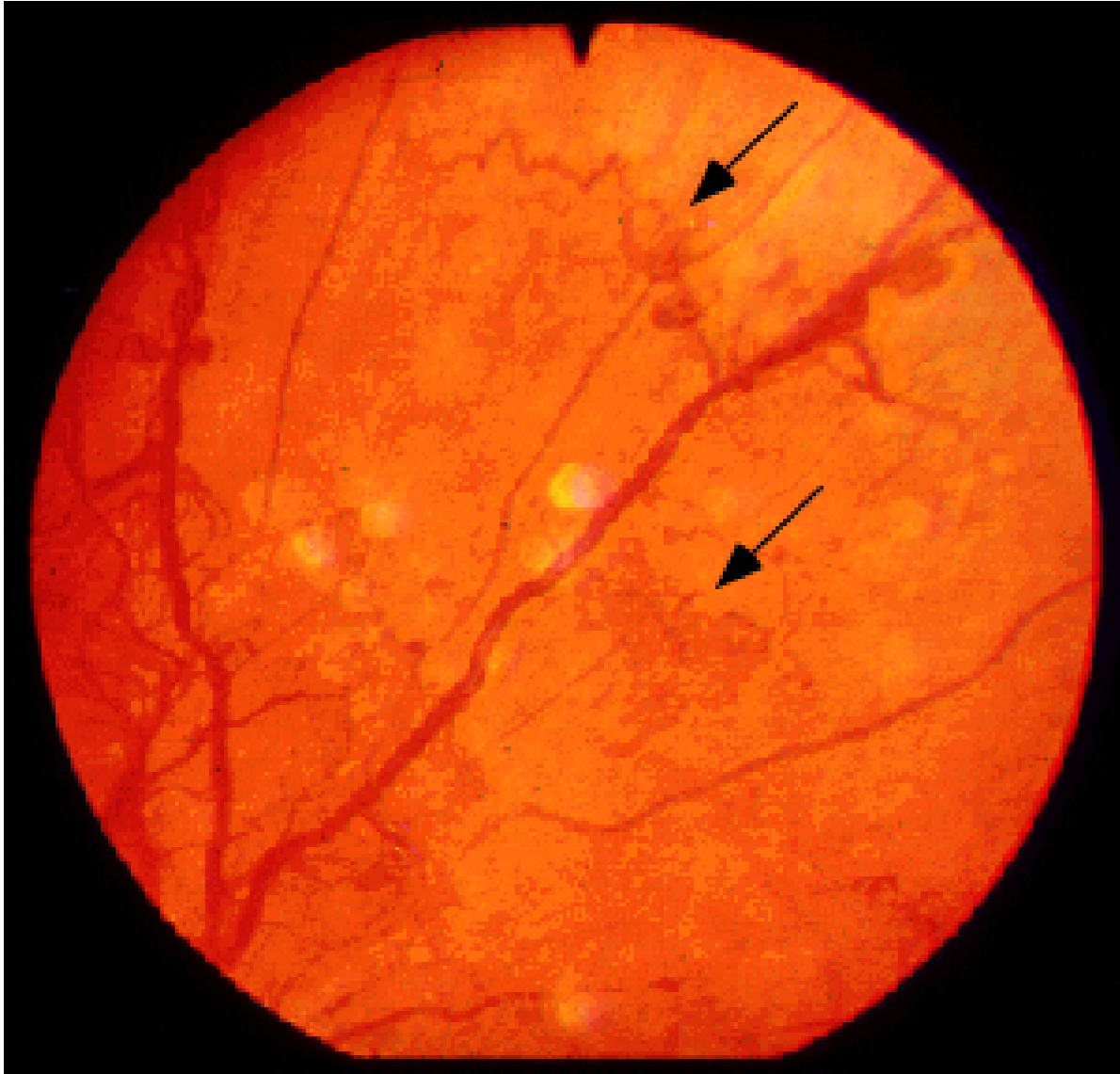




- **Cotton wool spots are indicative of retinal ischemia. The differential diagnosis includes diabetes, hypertension, AIDS, and the retinal vascular changes of systemic lupus erythematosus.**



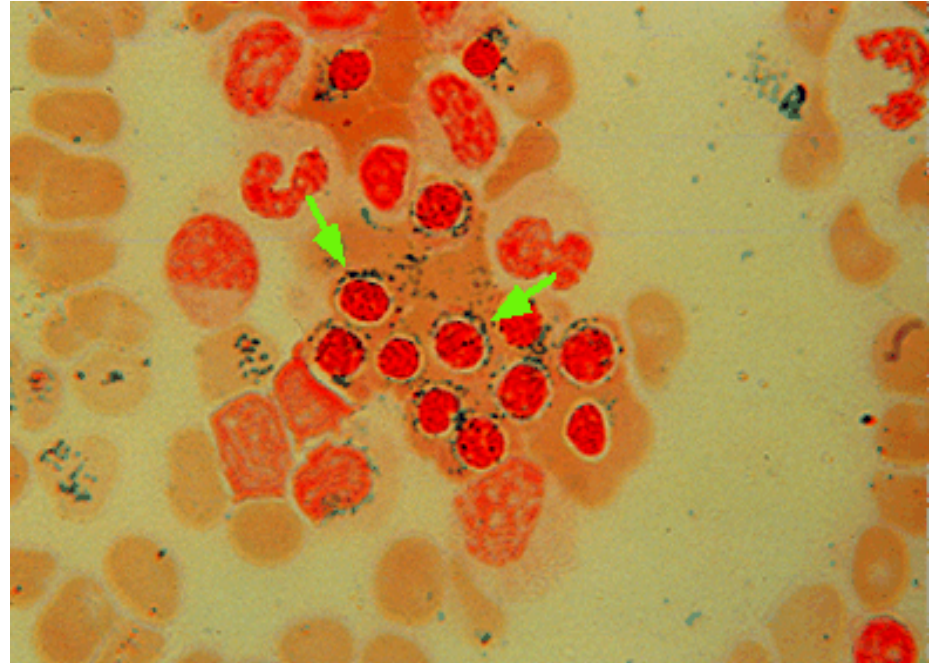
- **Diabetic retinopathy, showing irregular changes in venous caliber, tortuosity of blood vessels, and proliferation of networks of fragile new vessels, arising from both arteries and veins (arrows).**





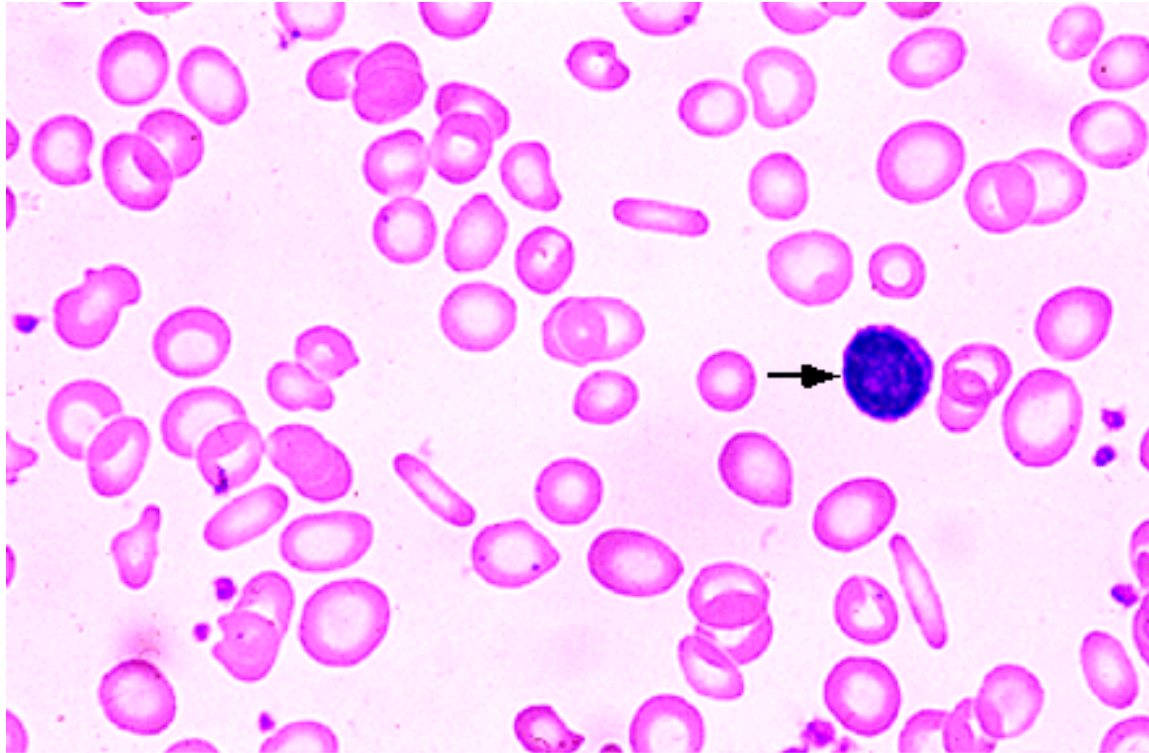
# Microcytic Anemia

- Iron Deficiency Anemia
- Thalassemia
- Sideroblastic anemia (myelodysplastic syndromes)



**Ringed sideroblasts** Prussian blue stain of the bone marrow in a patient with refractory anemia and ringed sideroblasts (RARS). Blue-stained hemosiderin deposits in the mitochondria of erythroid precursors form an apparent ring around the nucleus (see arrows). Courtesy of Stanley L Schrier, MD.

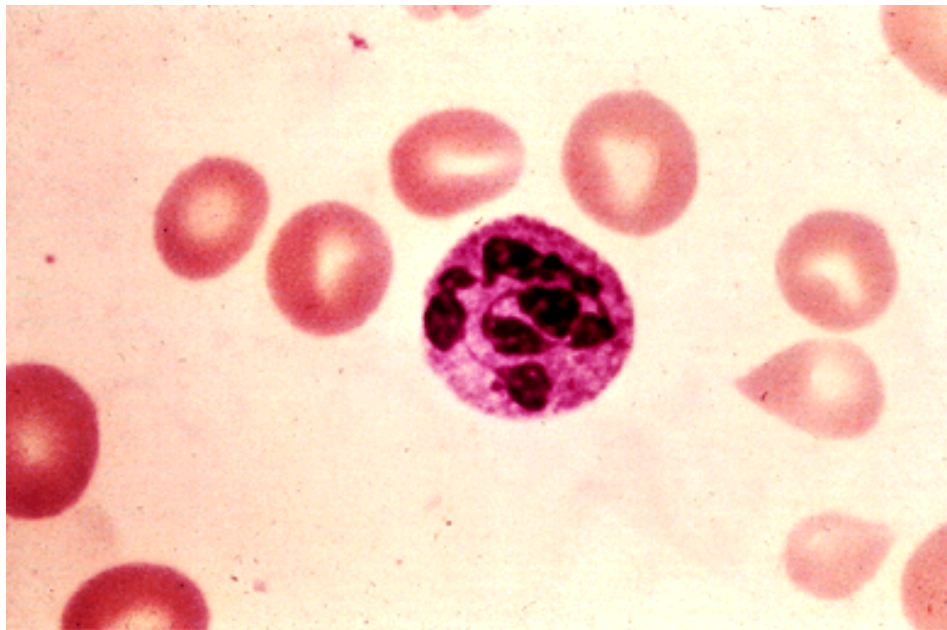
# Microcytic Anemia



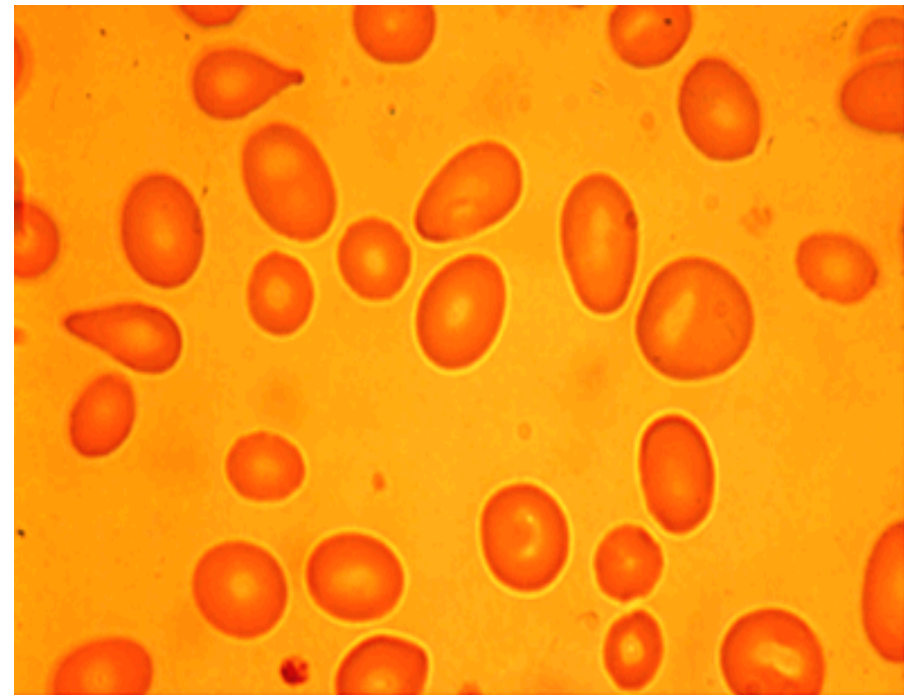
**Microcytic hypochromic red cells** Peripheral smear from a patient with iron deficiency shows pale small red cells with just a scant rim of pink hemoglobin; occasional "pencil" shaped cells are also present. Normal red cells are similar in size to the nucleus of a small lymphocyte (arrow); thus, many microcytic cells are present in this smear. Thalassemia can produce similar findings. Courtesy of Carola von Kapff, SH (ASCP).



# B12 and Folate Deficiency



**Hypersegmented neutrophil** Blood smear from a patient with megaloblastic anemia, showing a neutrophil with an increased number of nuclear lobes. At least six discrete lobes are present; normal neutrophils have five lobes or less. Courtesy of Stephen A. Landaw, MD, PhD.



**Macroovalocytosis** Peripheral smear shows marked macroovalocytosis in a patient with vitamin B12 deficiency. Courtesy of Stanley L Schrier, MD.

## Heart block

**Atrioventricular block or  
(AV BLOCK)**

**Bundle branch block  
(BBB )**

---

**There are three forms of AV block**

First-degree AV block :- simple prolongation of the PR interval to more than 0.22s., all atrial depolarization are conducted to the ventricles but with delay



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**Second-degree AV block :- There is a block to some of the P waves.**

**There are three types :**

- **Mobitz I Block (Wenckebach phenomenon)**

**There is a progressive PR prolongation until a P wave fails to conduct.**

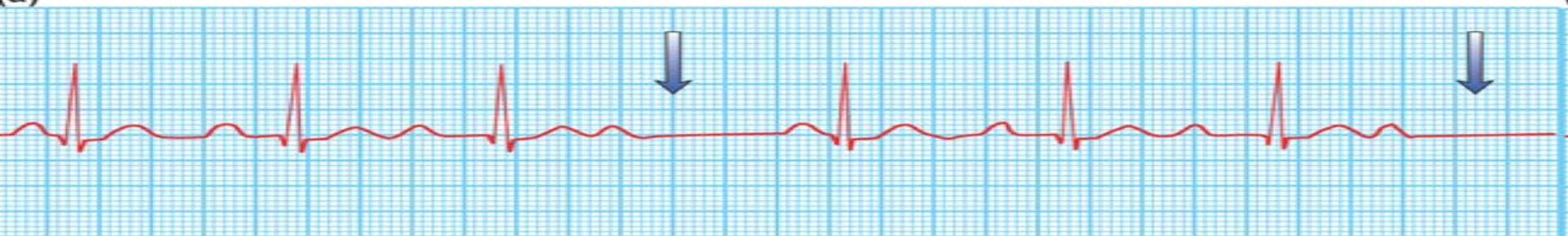
- **Mobitz II Block**

**Occurs when a dropped QRS complex is not preceded by progressive PR prolongation**

- **2:1 or 3 : 1 (advanced) block**

**Occurs when every second or third P wave conduct to the ventricles**

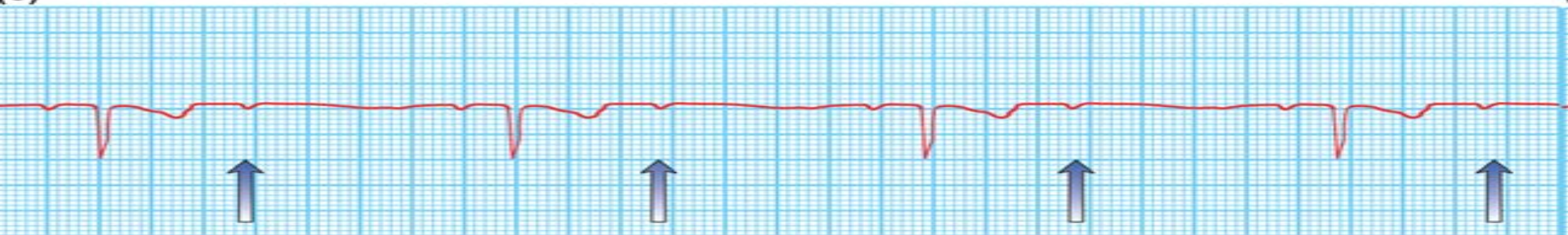
(a)



(b)



(c)



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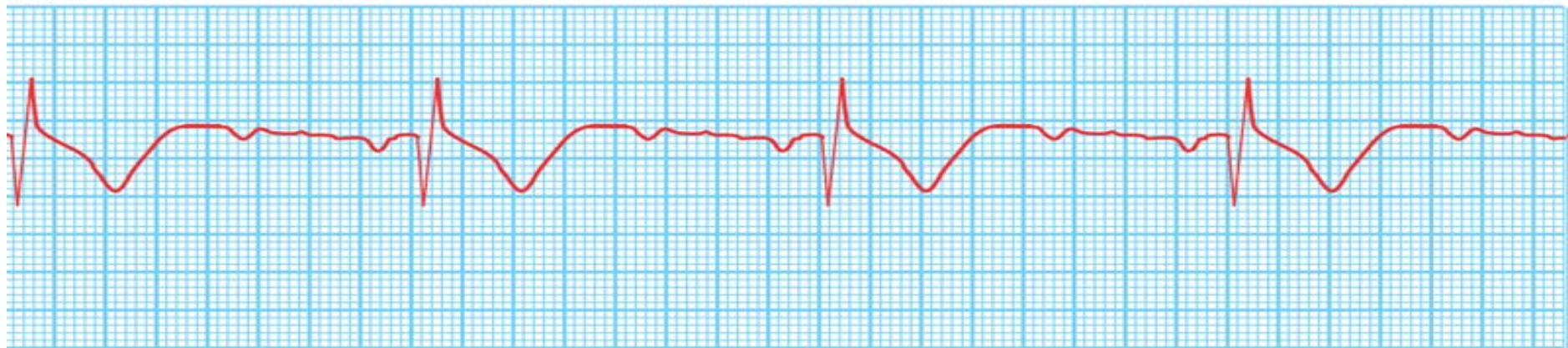
# Third-degree ( complete) AV block

Occurs when all the atrial activity fails to conduct to the ventricles

(a)

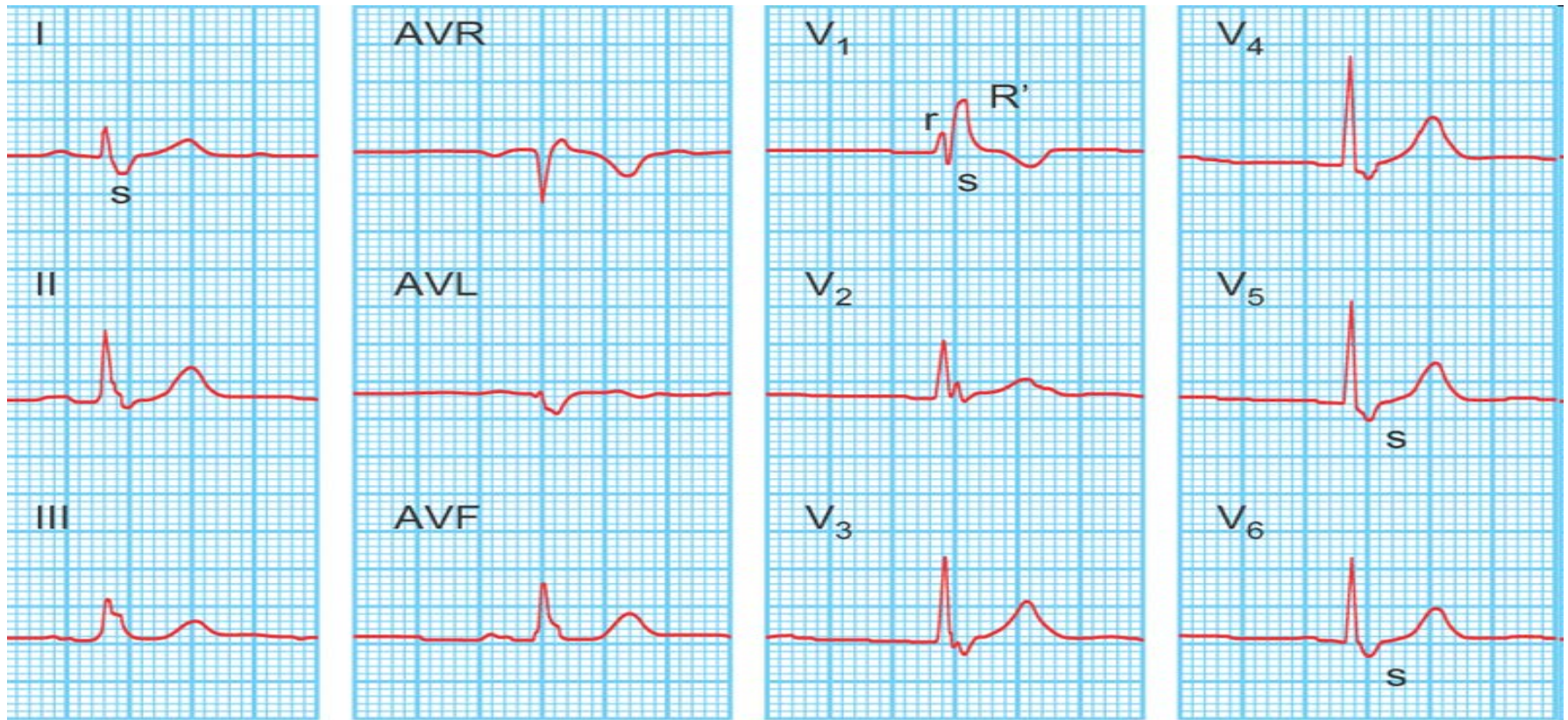


(b)





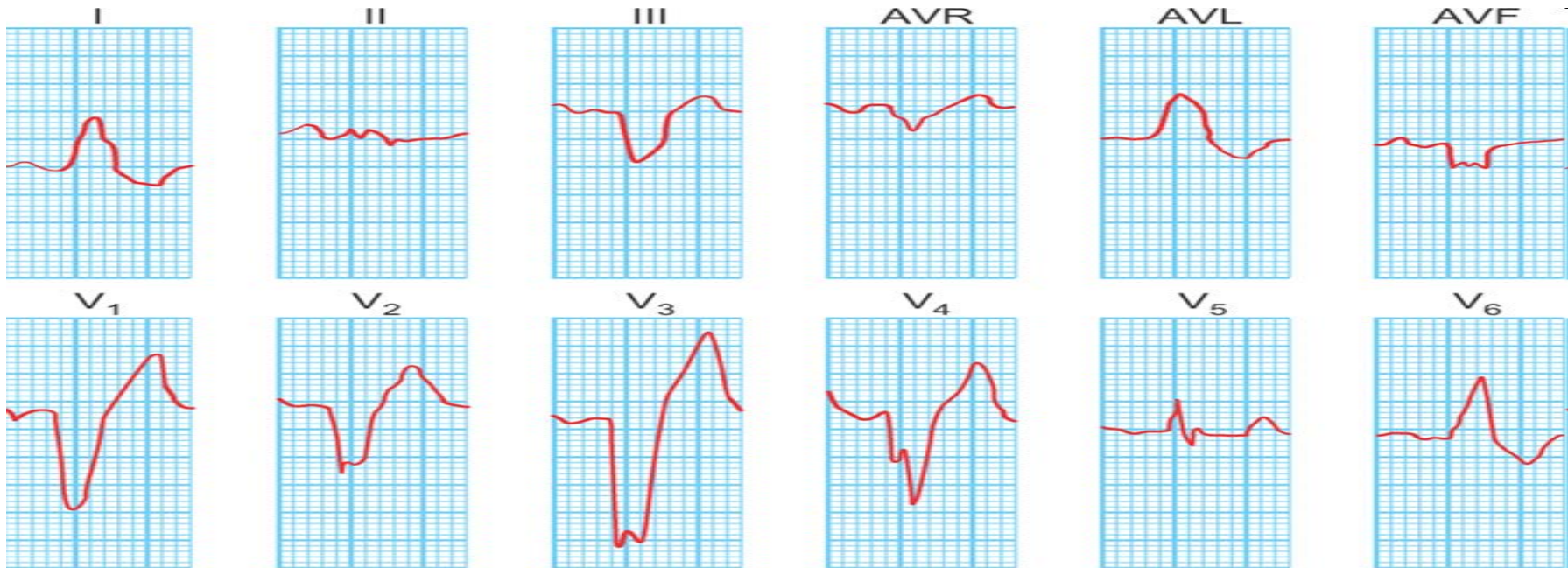
**Right bundle branch block :- there is late activation of the right ventricle , seen as deep S wave in leads I and V6 and as a tall R wave in V1**



[a]



- **Left bundle branch block ( LBBB) produces a deep S in V1 and tall late R in lead I and V6**



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**Hemiblock :-** when there is block in one of the divisions of the left bundle, either anterior division or posterior division, this will produce a swing in the electrical axis of the heart

Anterior hemiblock ; -cause left axis deviation, while

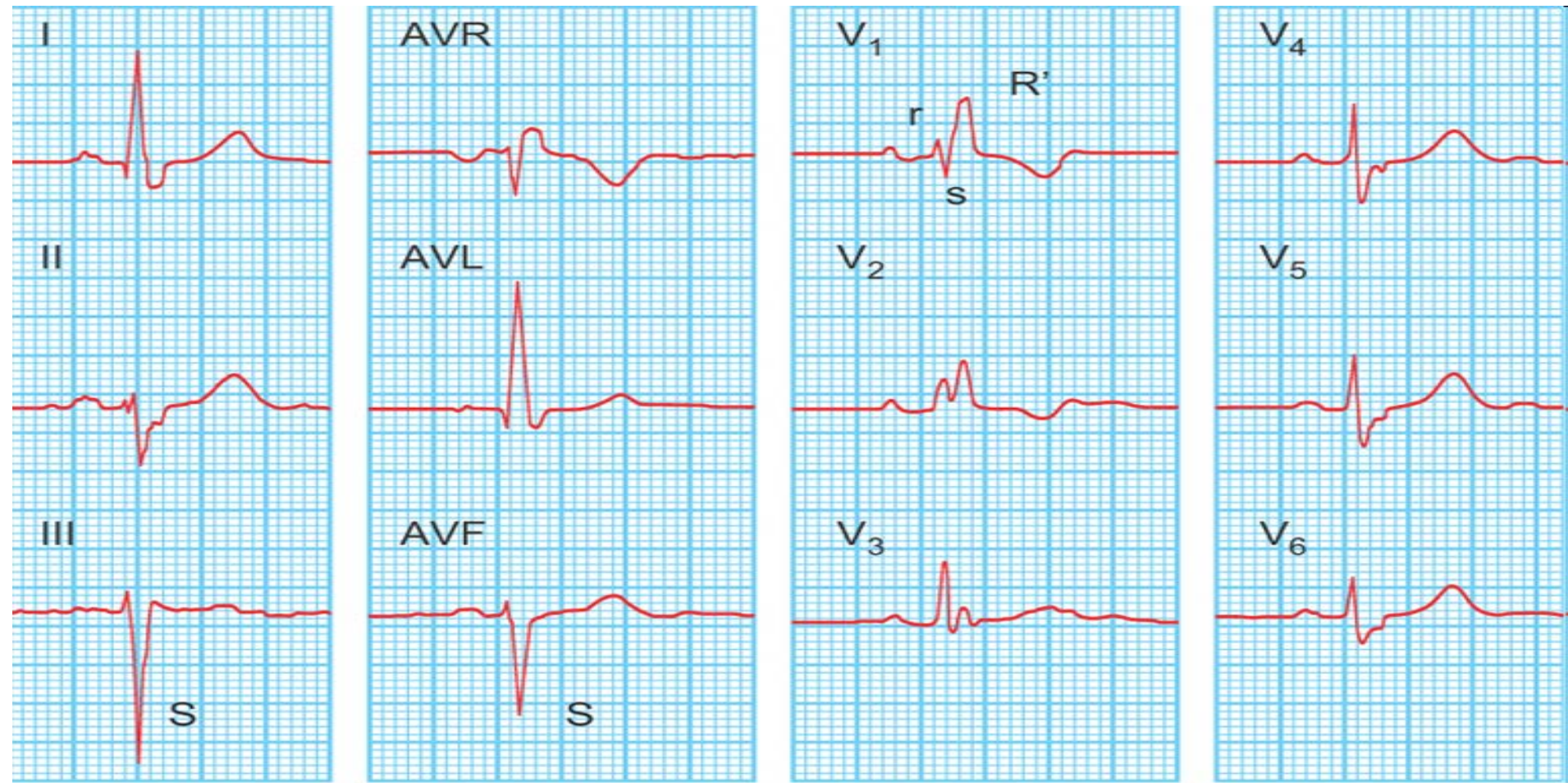
Posterior hemiblock :- cause right axis deviation

**Bifascicular block :-** when there is a block in any two of the following right bundle branch block,

left anterior hemiblock

left posterior hemiblock

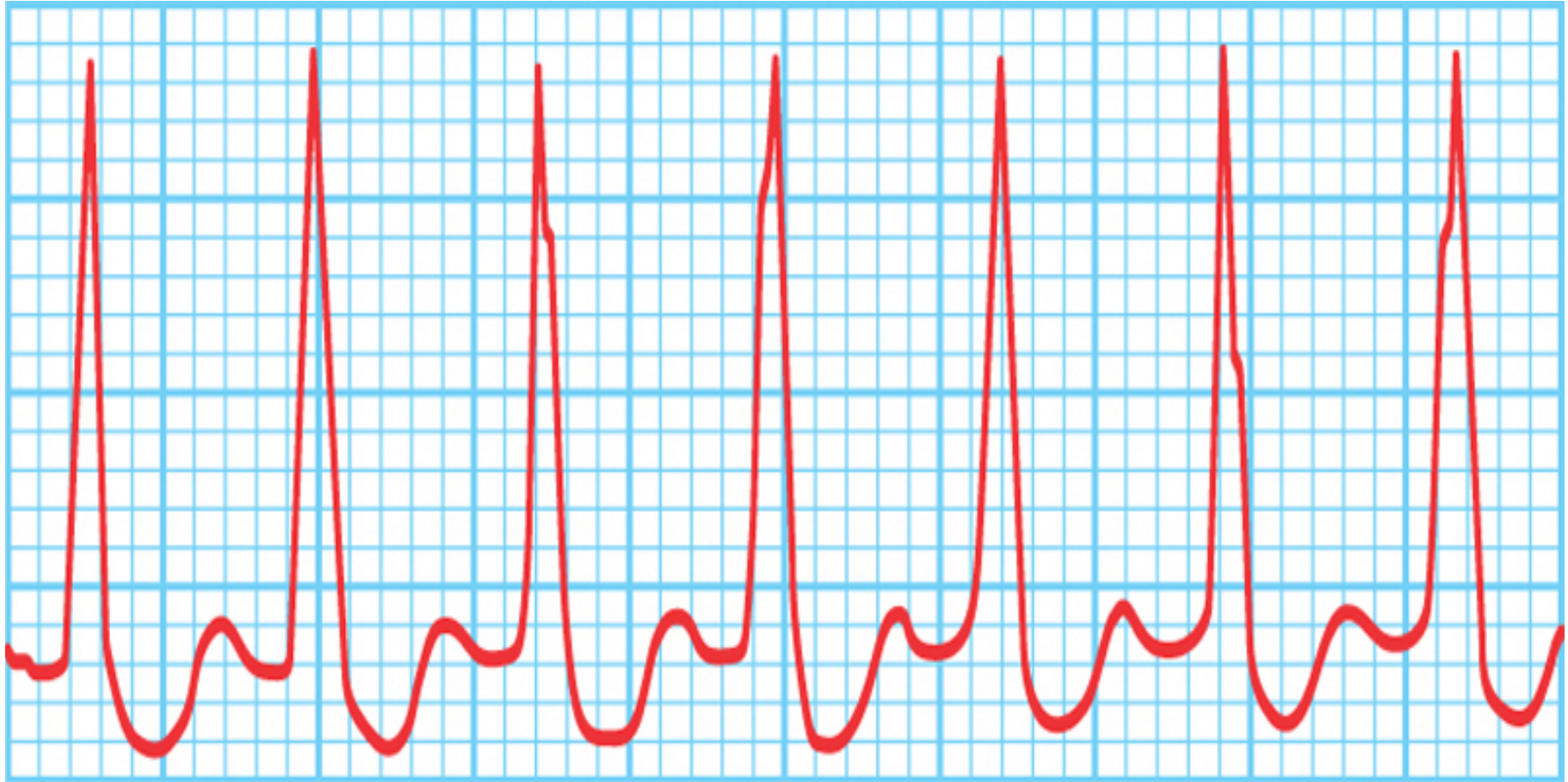
**A block in all the above three will cause complete heart block**



(b)

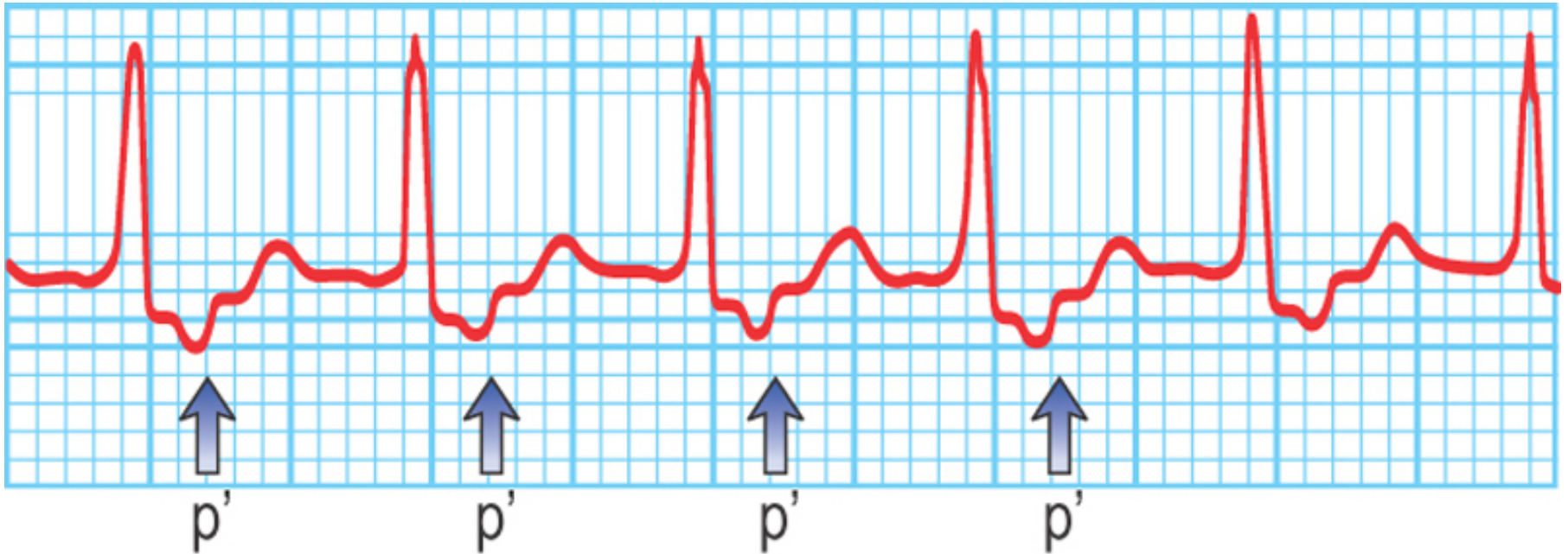


- **Supraventricular tachycardia (junctional)**



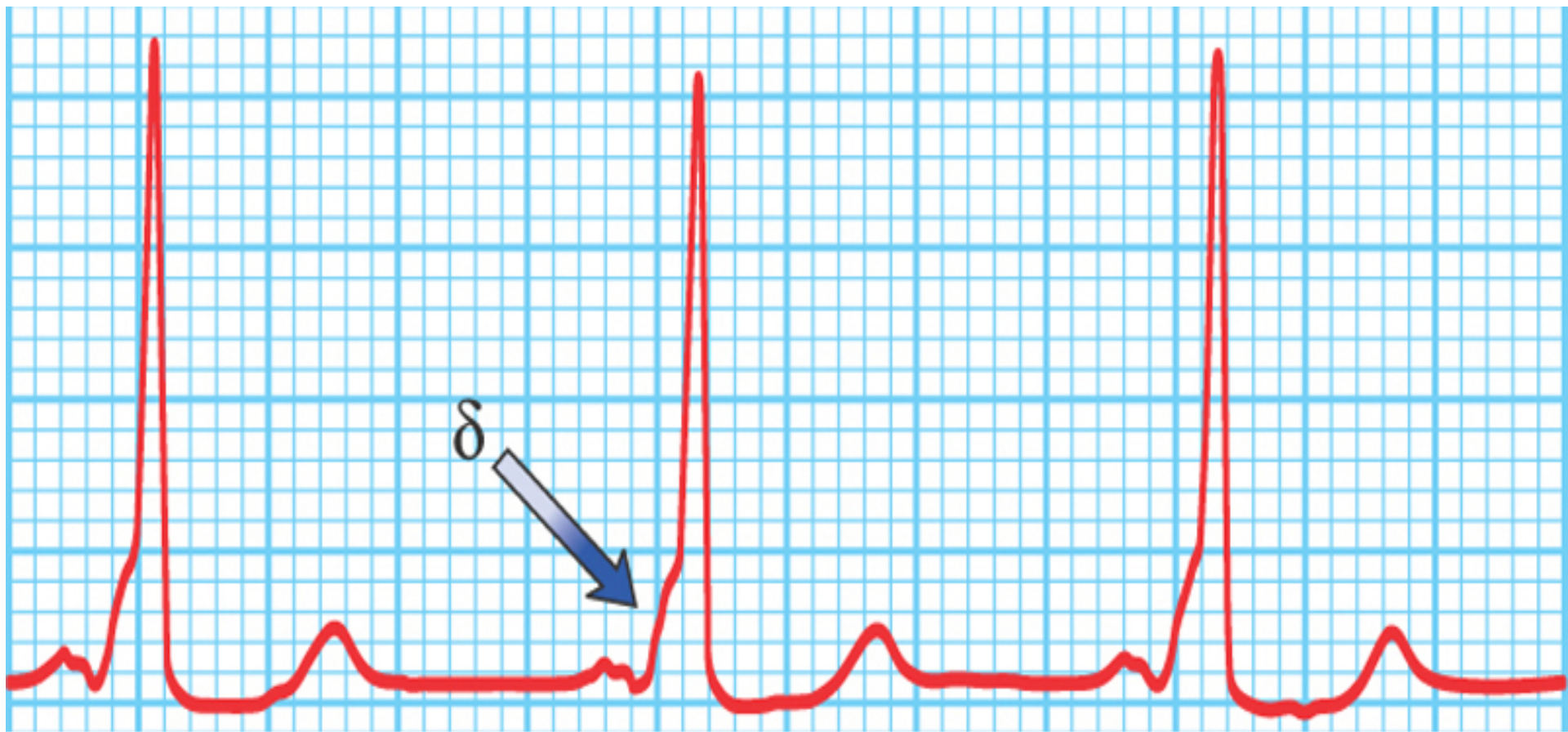
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- **SVT (Wolf- Parkinson- White -WPW syndrome)**



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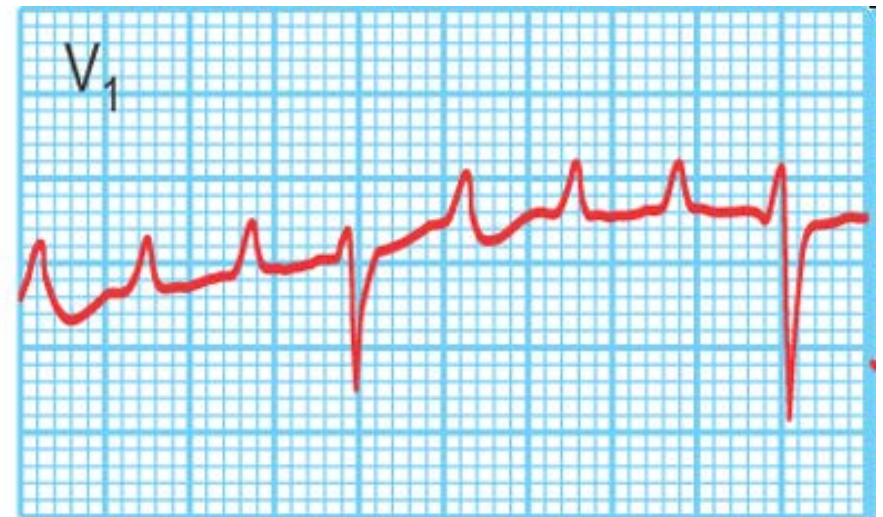
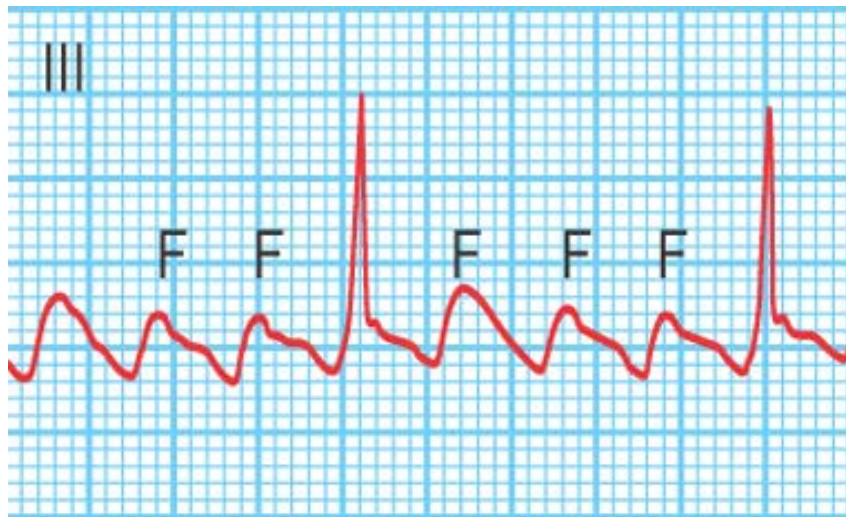




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## Atrial flutter

- It is usually with a. fibrillation
- It is usually an organized atrial rhythm with a rate between 250-350 b/min.
- ECG shows regular sawtooth - like atrial waves ( F waves) between normal QRS complexes
- Variable degrees of AV block



## Atrial ectopic beats

- They usually cause no symptoms
- May need treatment with beta- blockers
- ECG early abnormal P wave followed by normal QRS complex

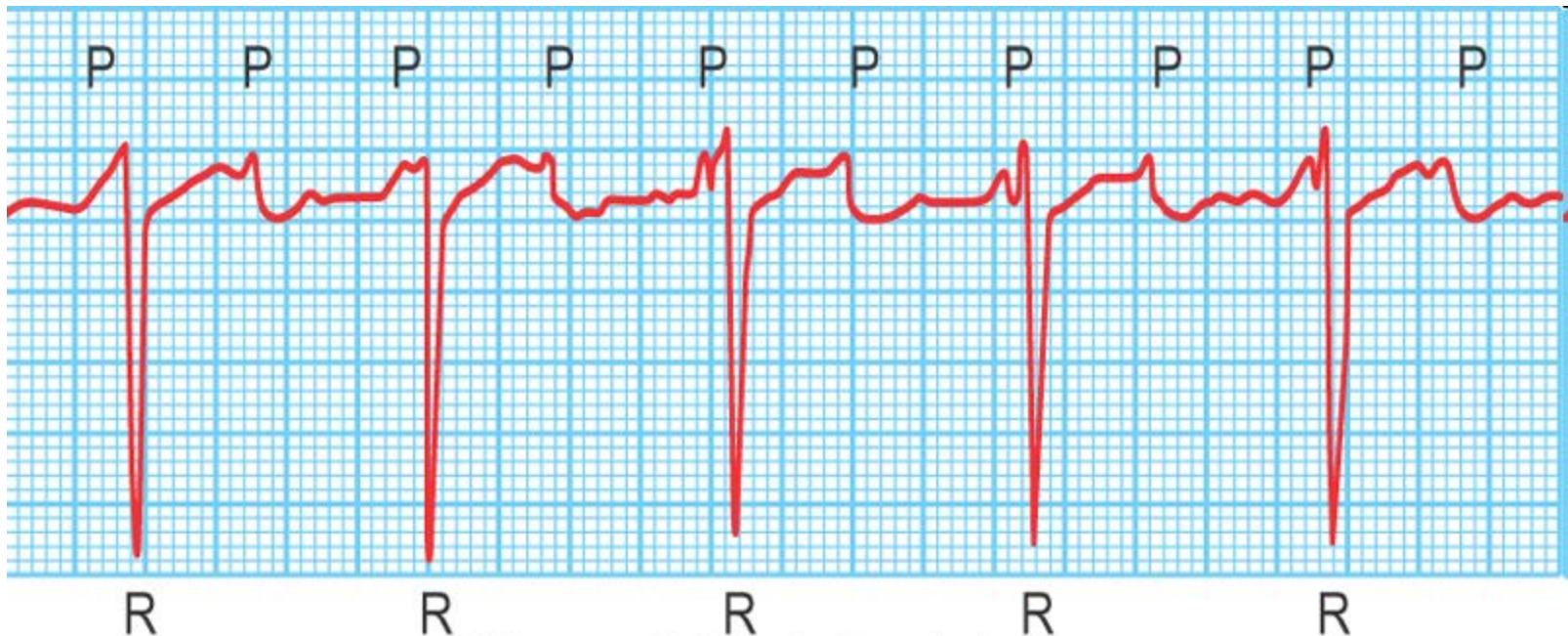


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# Atrial tachycardia

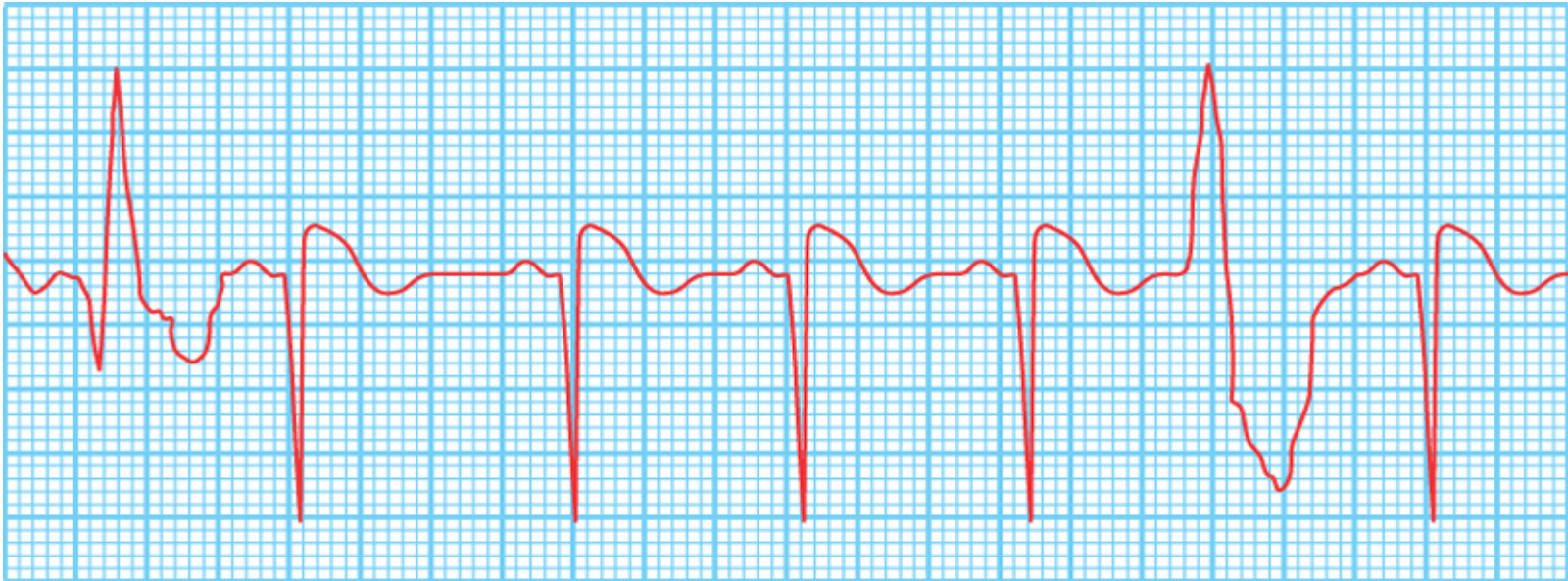
- Rare, may be idiopathic
- **When present with a block it is often due to digitalis poisoning**



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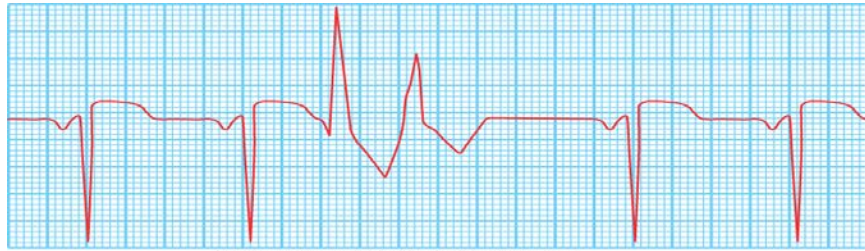
## Ventricular premature beats

- May be uncomfortable especially when frequent
- Complaint : extra beat, missed beat, or heavy beat
- Irregular pulse
- ECG, the premature beats have a broad ( $>0.12s$ ) and bizarre QRS complex, then followed by compensatory pause

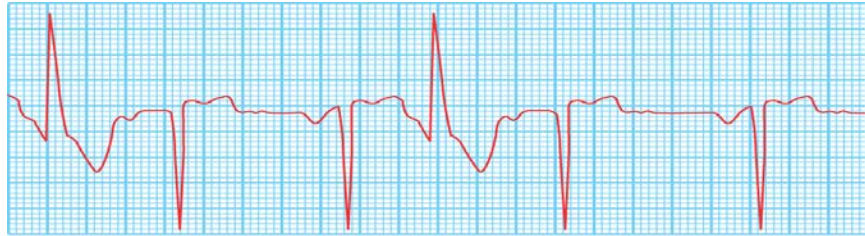


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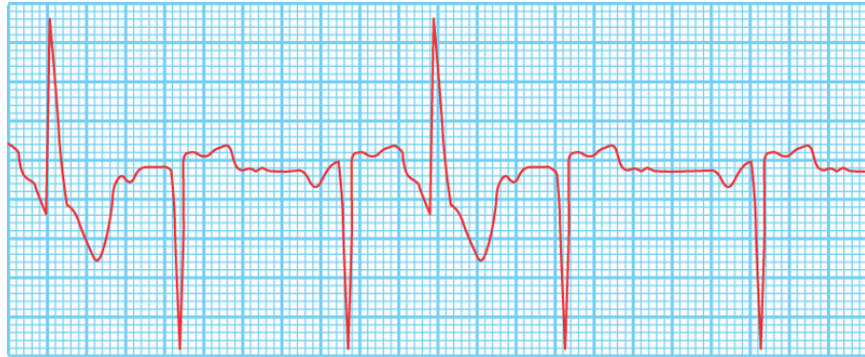




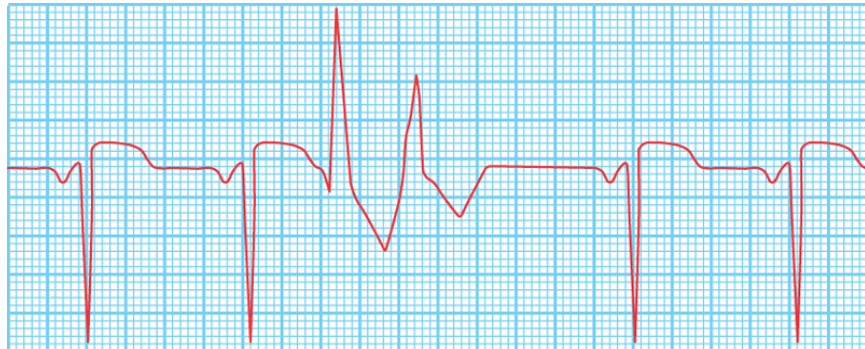
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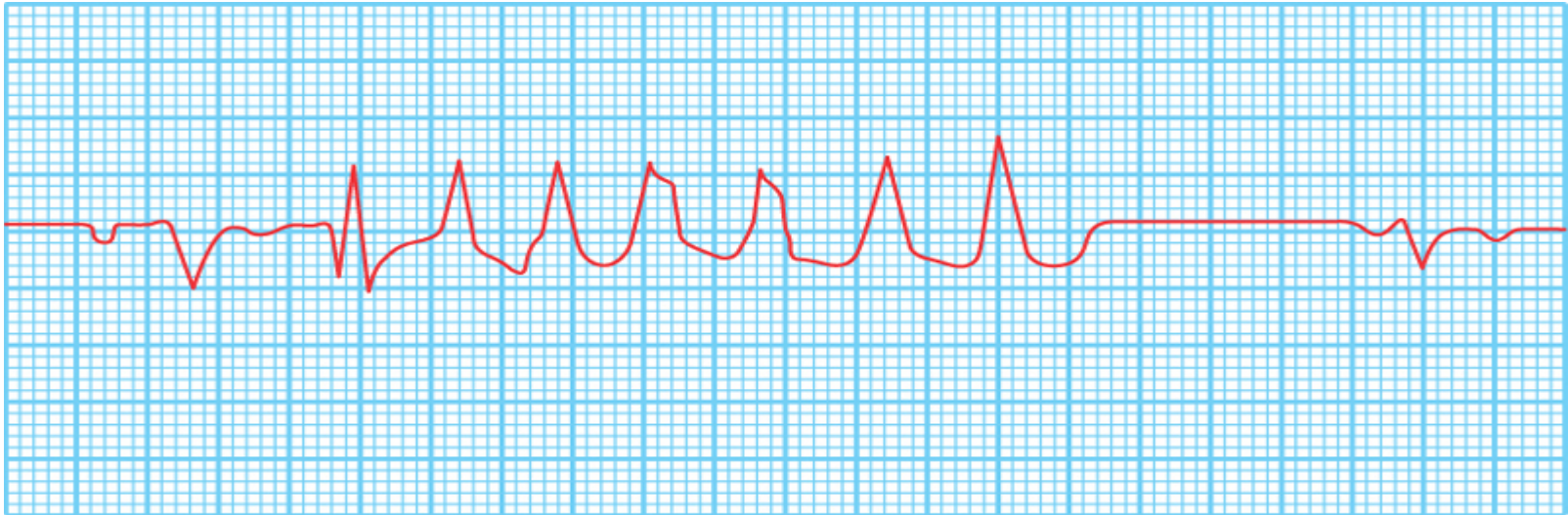
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# Non-sustained ventricular tachycardia(NSVT)

- It is VT that is  $> 5$  consecutive beats but lasts  $< 30$  s
- It is usually benign and does not require any treatment



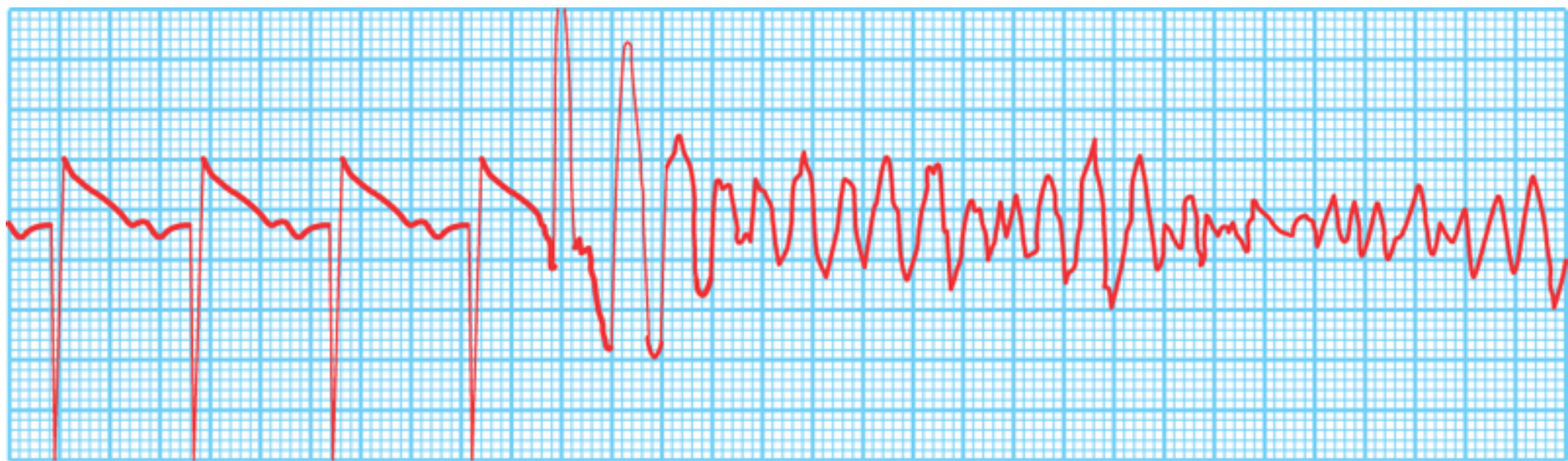
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- **ECG shows rapid ventricular rhythm with broad (0.14s or more ) abnormal QRS complexes.**
- **AV dissociation with occasional P waves.**
- **SVT with bundle branch block may resemble VT on ECG.**
- **Treatment is urgent:- i.v class I or amiodarone or DC cardioversion**

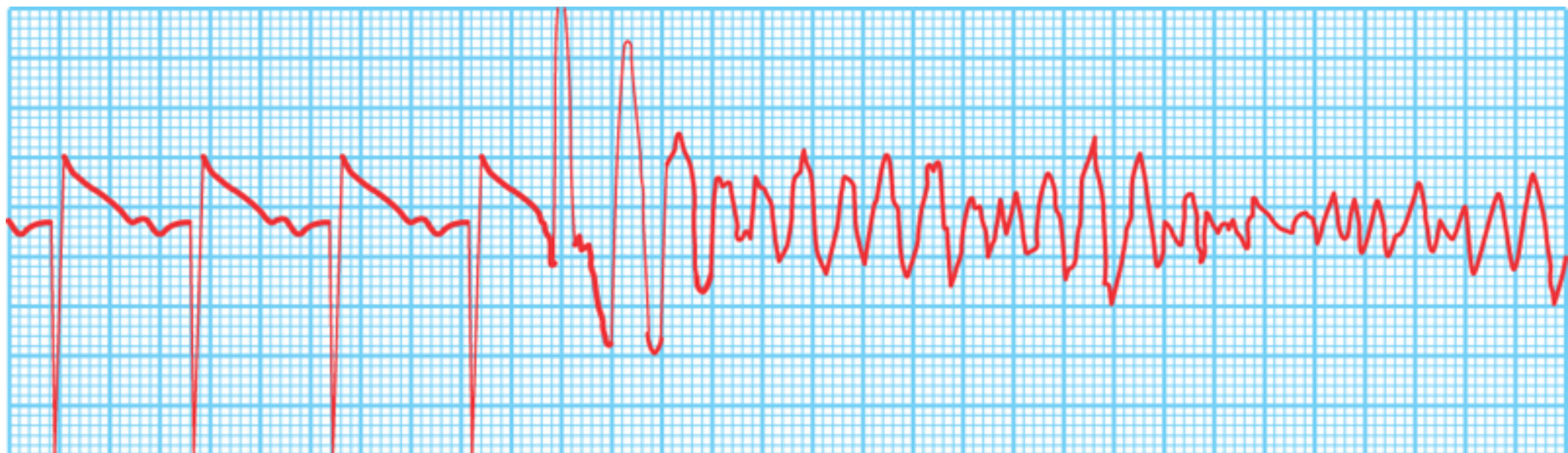
### **Ventricular fibrillation**

- **This is rapid and irregular ventricular activation with no mechanical effect**
- **Patient is pulseless and rapidly becoming unconscious with respiratory arrest**
- **ECG shapeless, rapid oscillations with no complexes**
- **The only effective treatment is defibrillation**





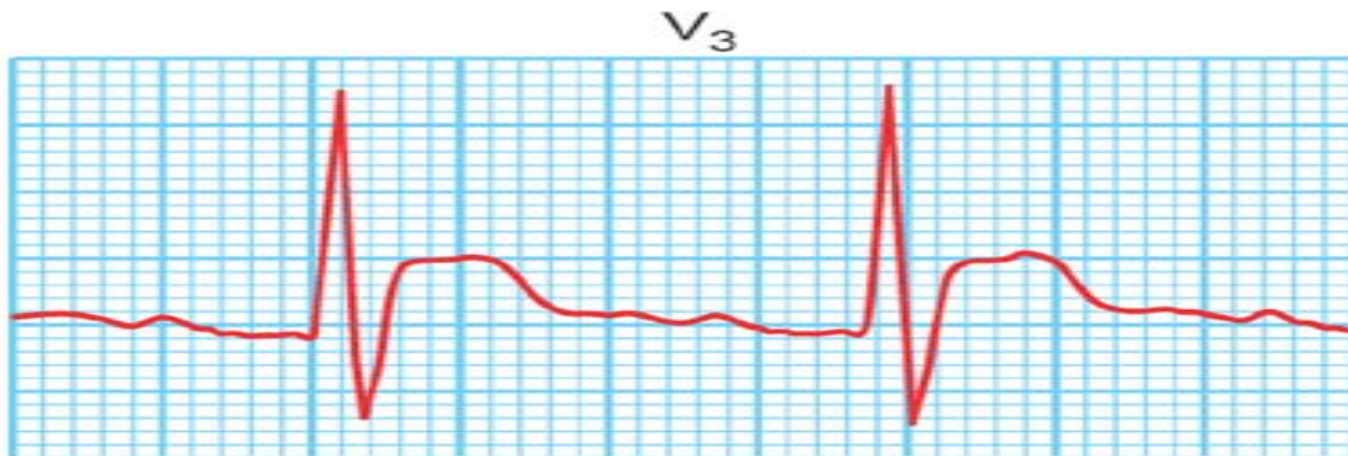
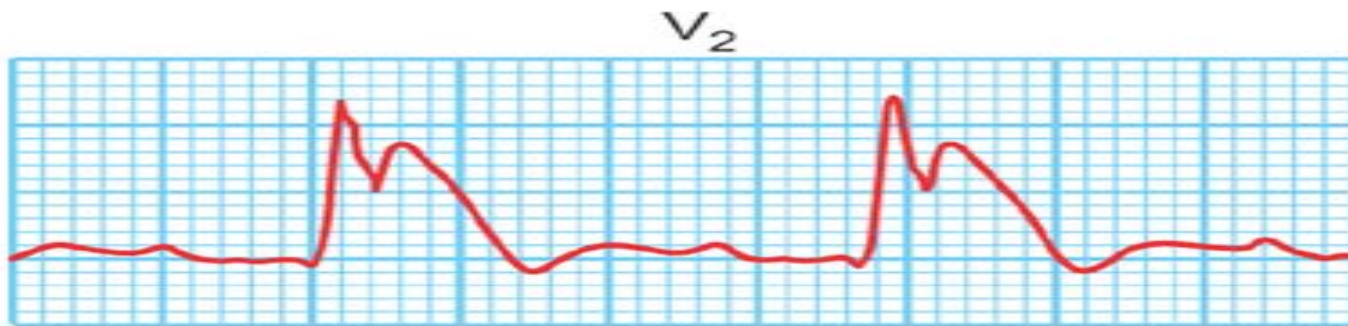
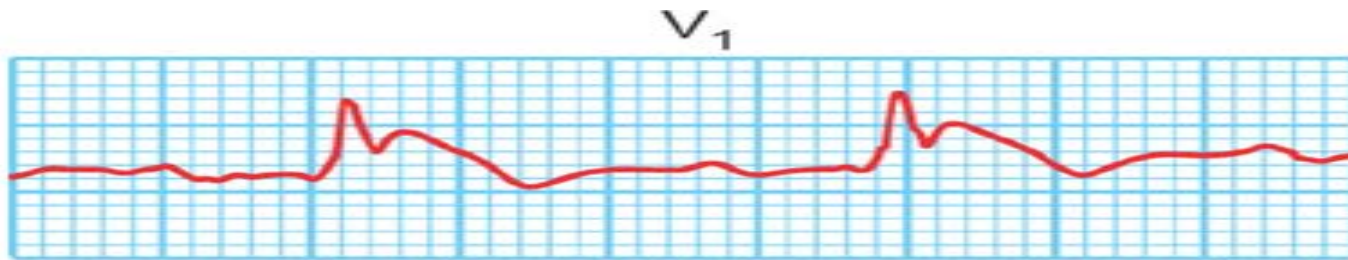
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# Brugada syndrome



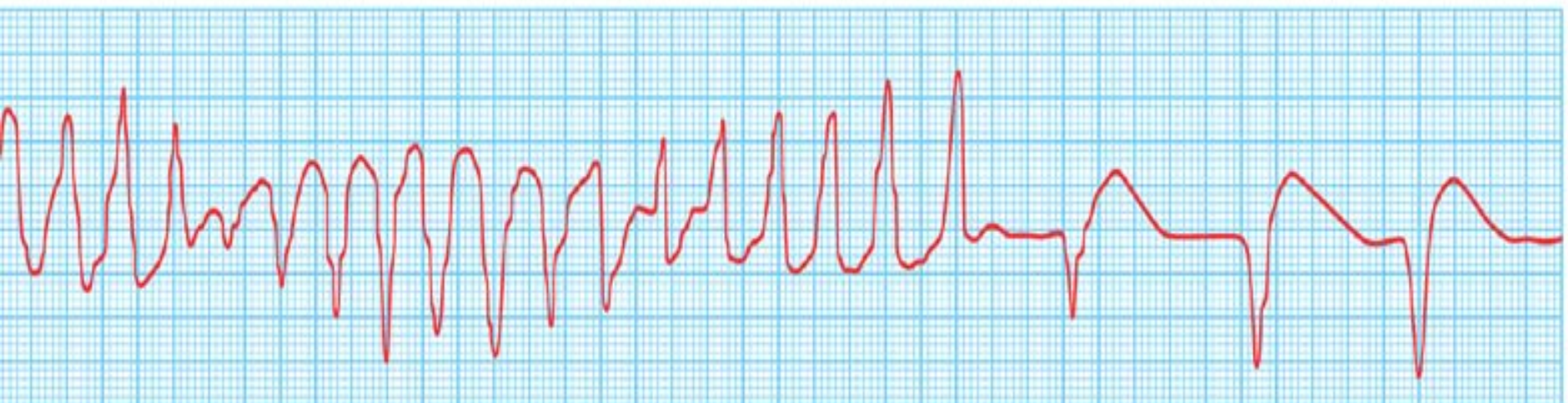
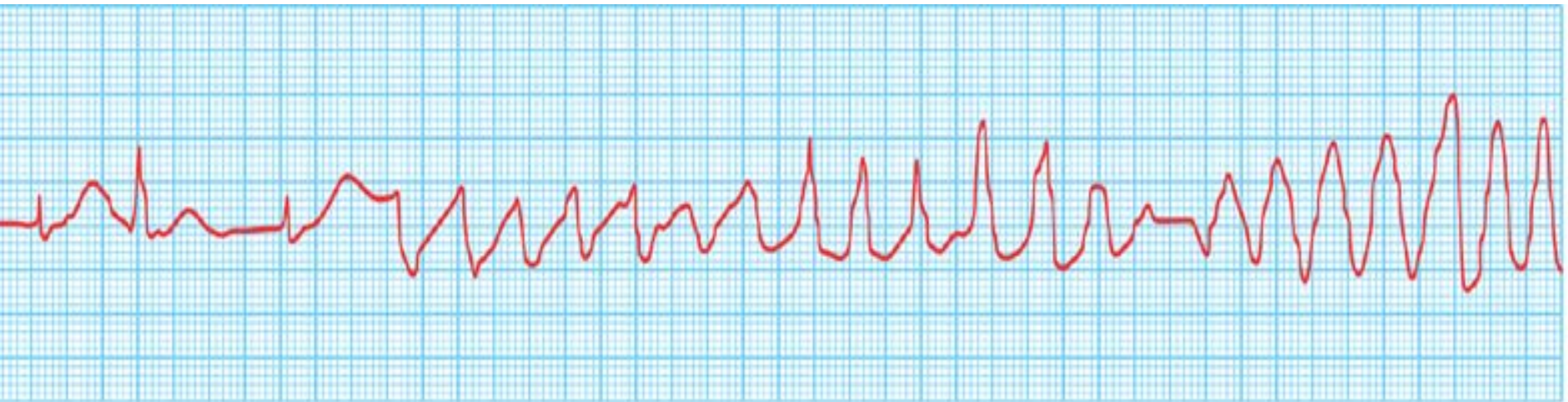
# Long QT syndrome



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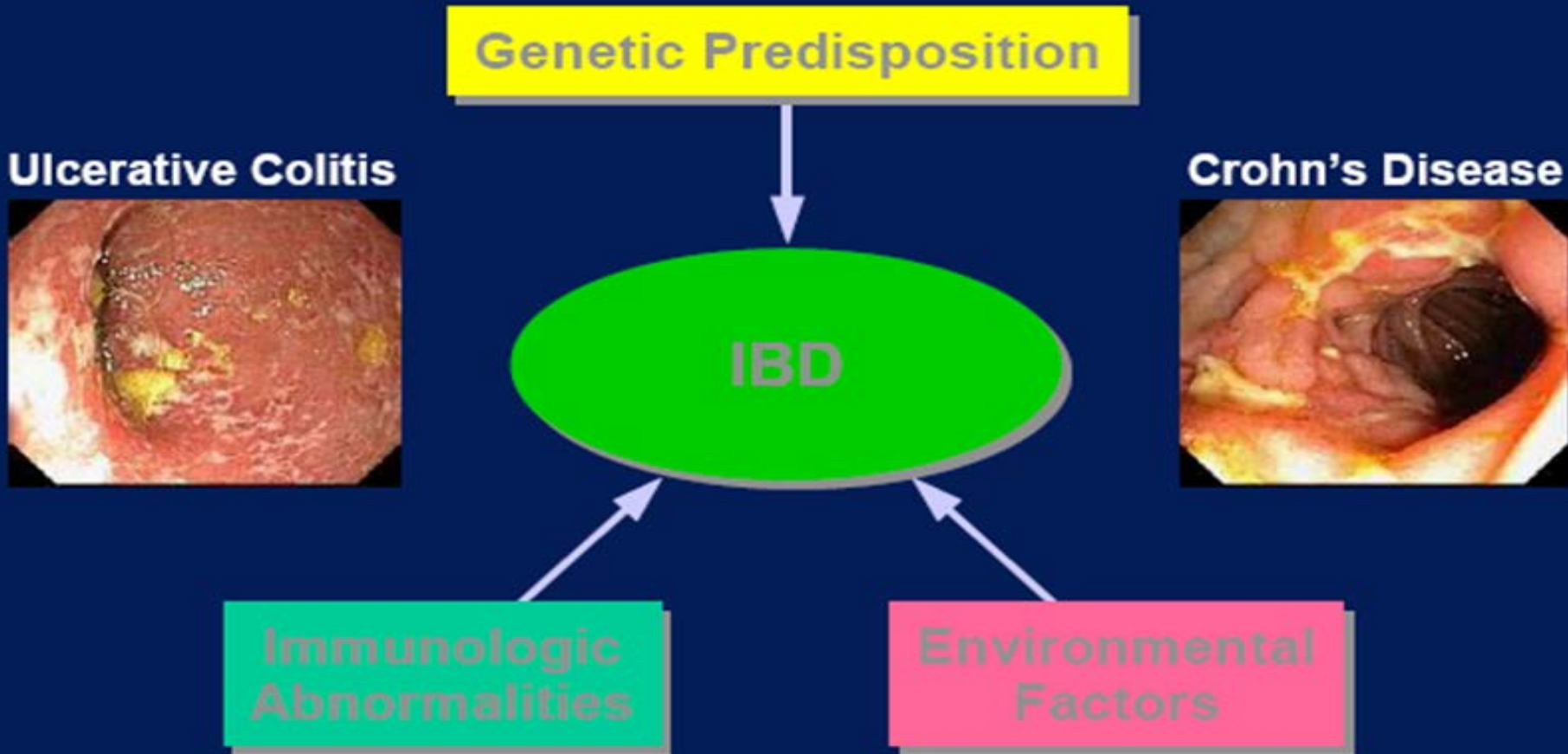


(a)

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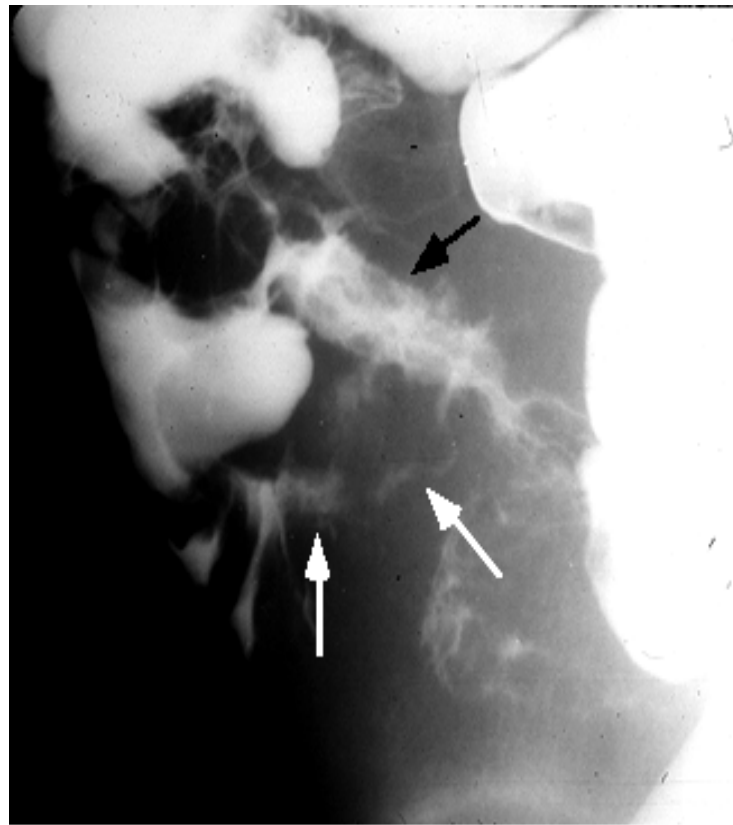


# PATHOPHYSIOLOGY





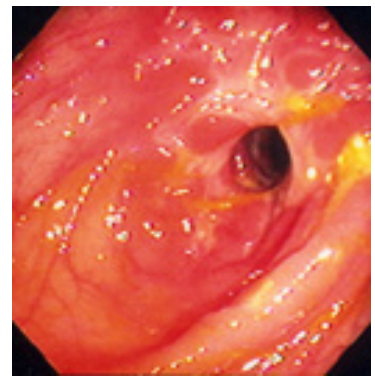
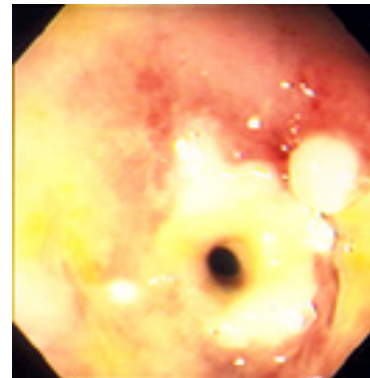
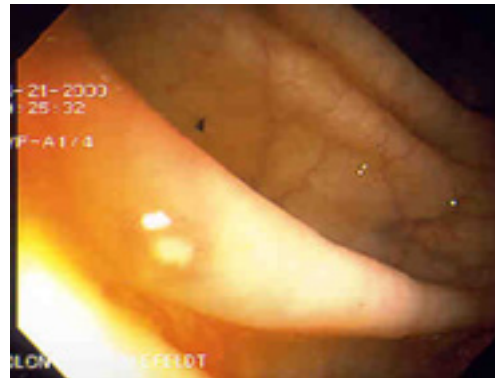
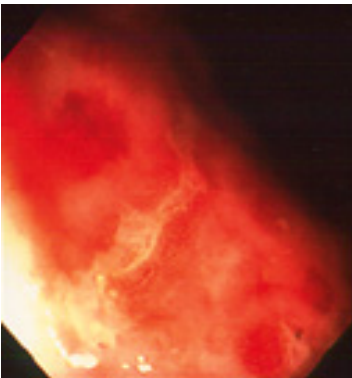
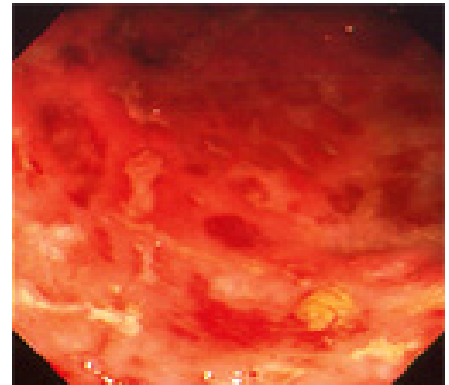
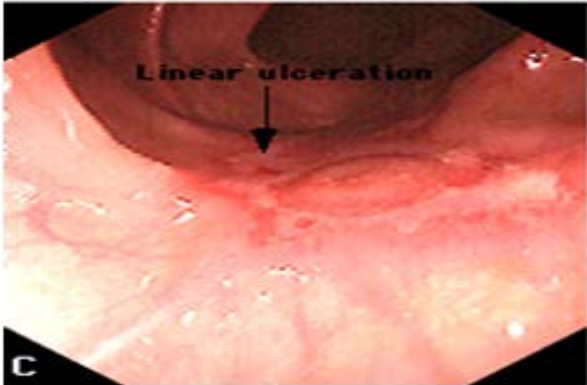
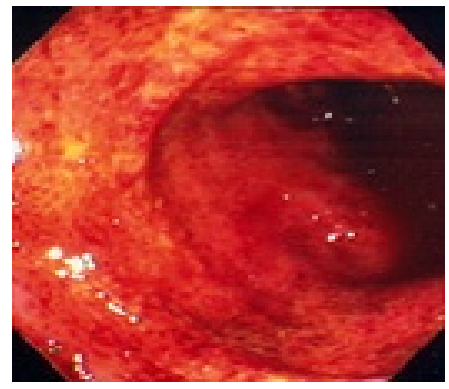
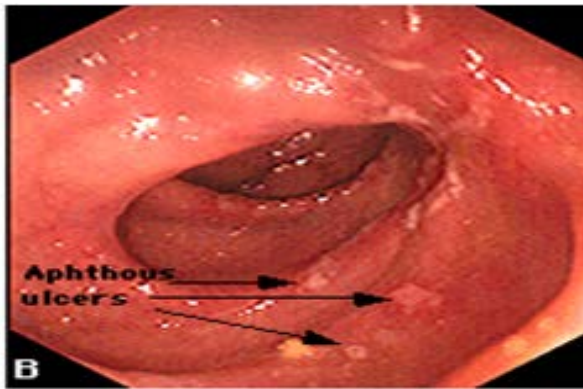
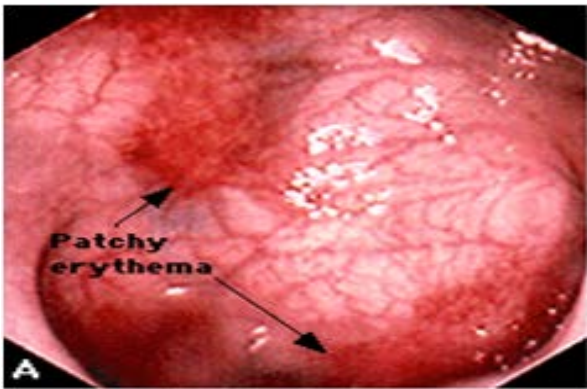
**Cobblestone appearance in Crohn's disease** Small bowel follow through study demonstrates diffuse thickening of the small bowel mucosa in a patient with Crohn's disease. The cobblestone appearance is produced by barium being dispersed between the edematous inflamed mucosa. Courtesy of Norman Joffe, MD.



**Ileocecal fistulae in Crohn's disease** Small bowel follow through examination demonstrates nodular thickening of the terminal ileal mucosal folds in a patient with Crohn's disease (black arrow). Several fistulae extend from the terminal ileum to the adjacent cecum (white arrows). Courtesy of Jonathan Kruskal, MD, PhD.

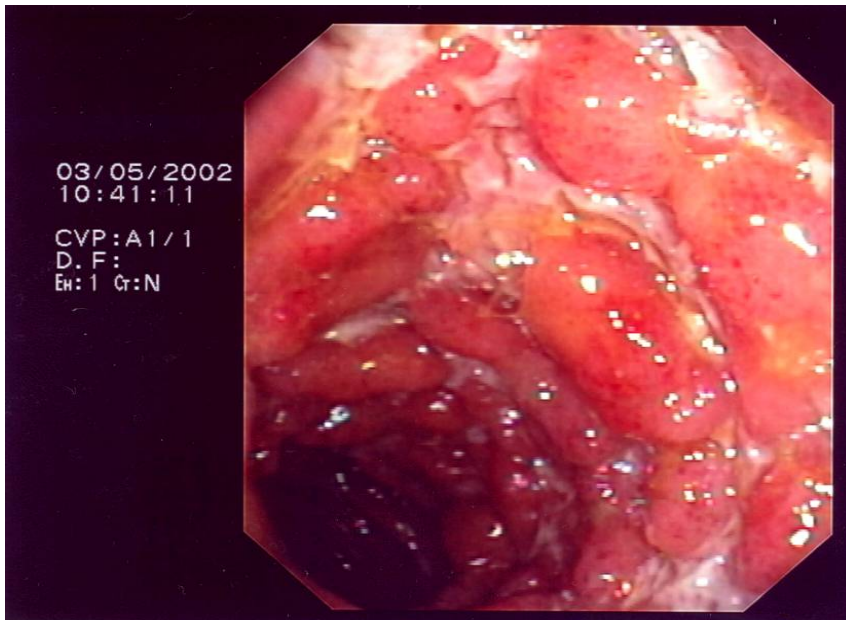


**String sign in Crohn's disease** Small bowel follow through study shows marked narrowing, irregularity and ulceration in the distal ileum (arrows) in a patient with Crohn's disease. Courtesy of Jonathan Kruskal, MD, PhD.

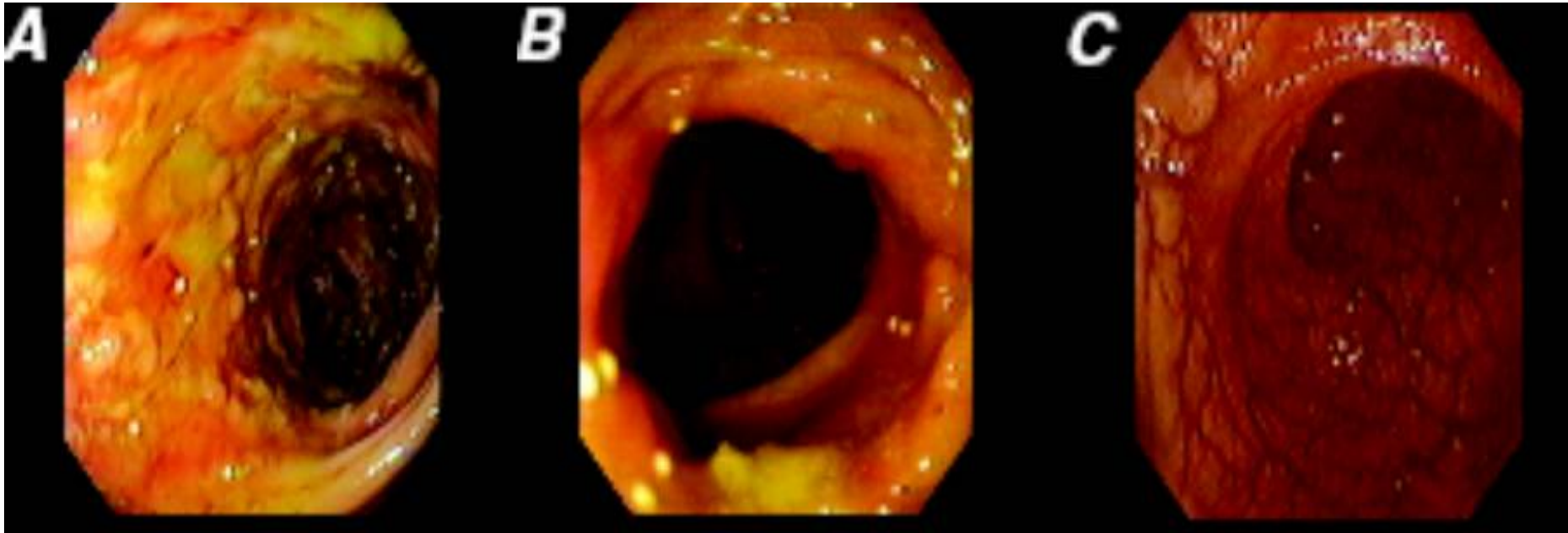




# CD ileitis: DDX



# Infliximab - mucosal healing



Baseline

Week 10

Week 54

# UC - Spectrum of Disease

**Normal**



**Mild**



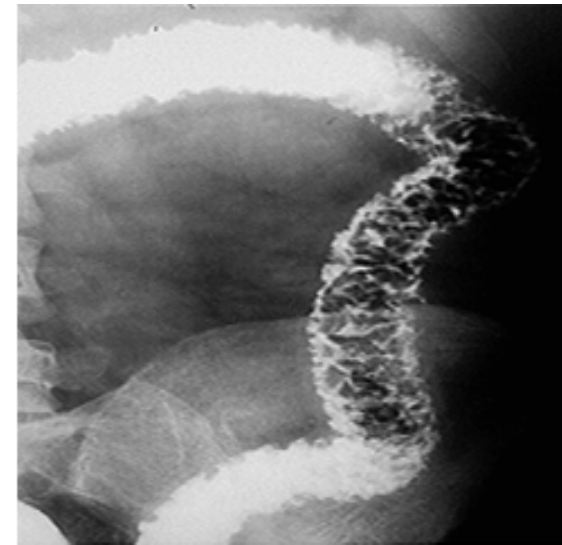
**Moderate**



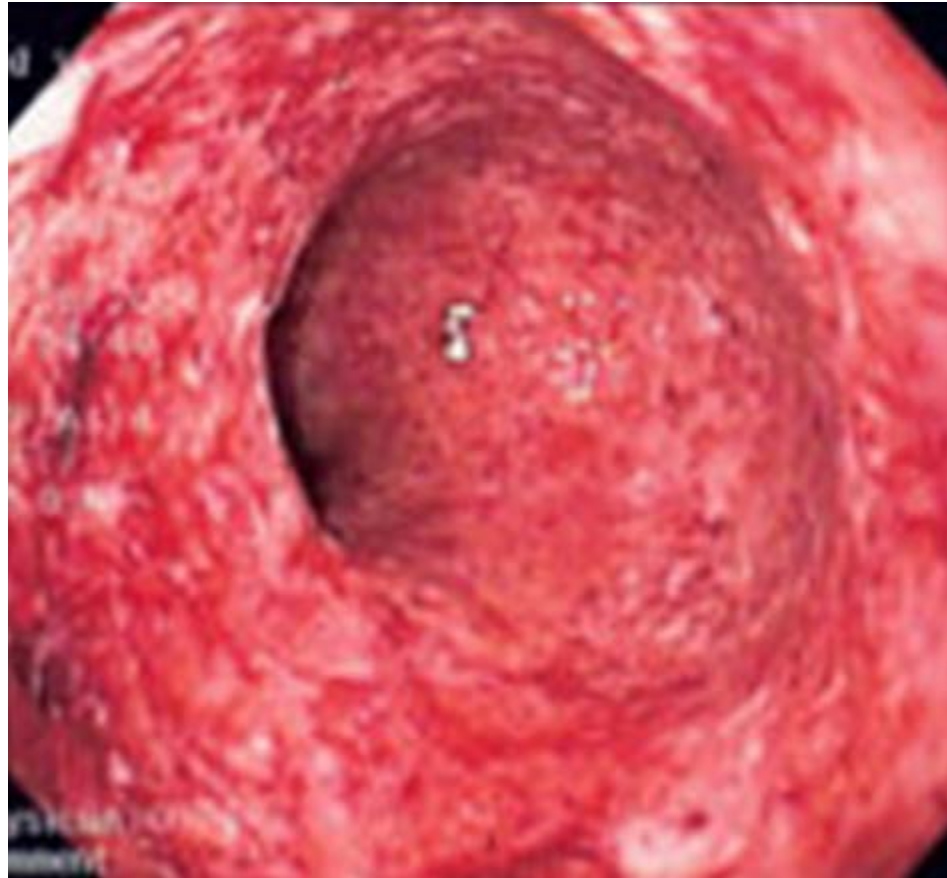
**Severe**





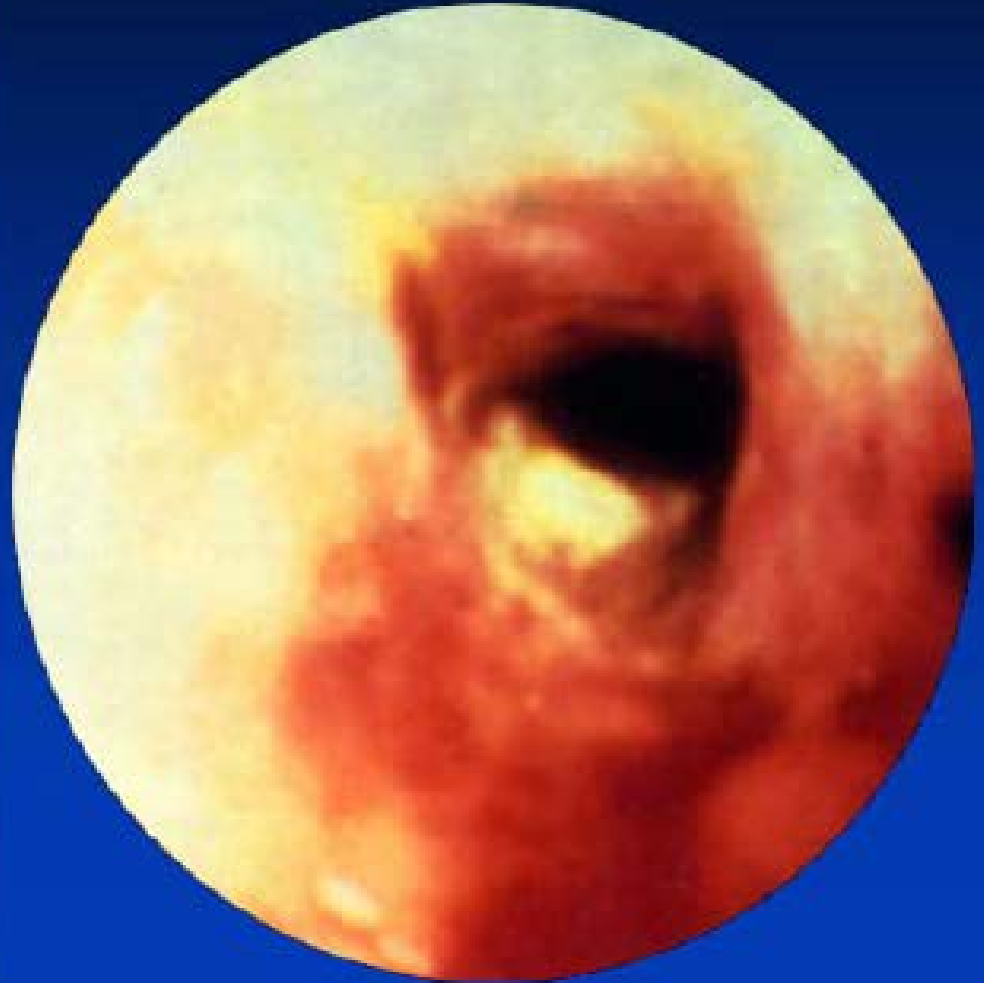


# DDX of UC



**UC - Intestinal Complications**

**Malignant Stricture**



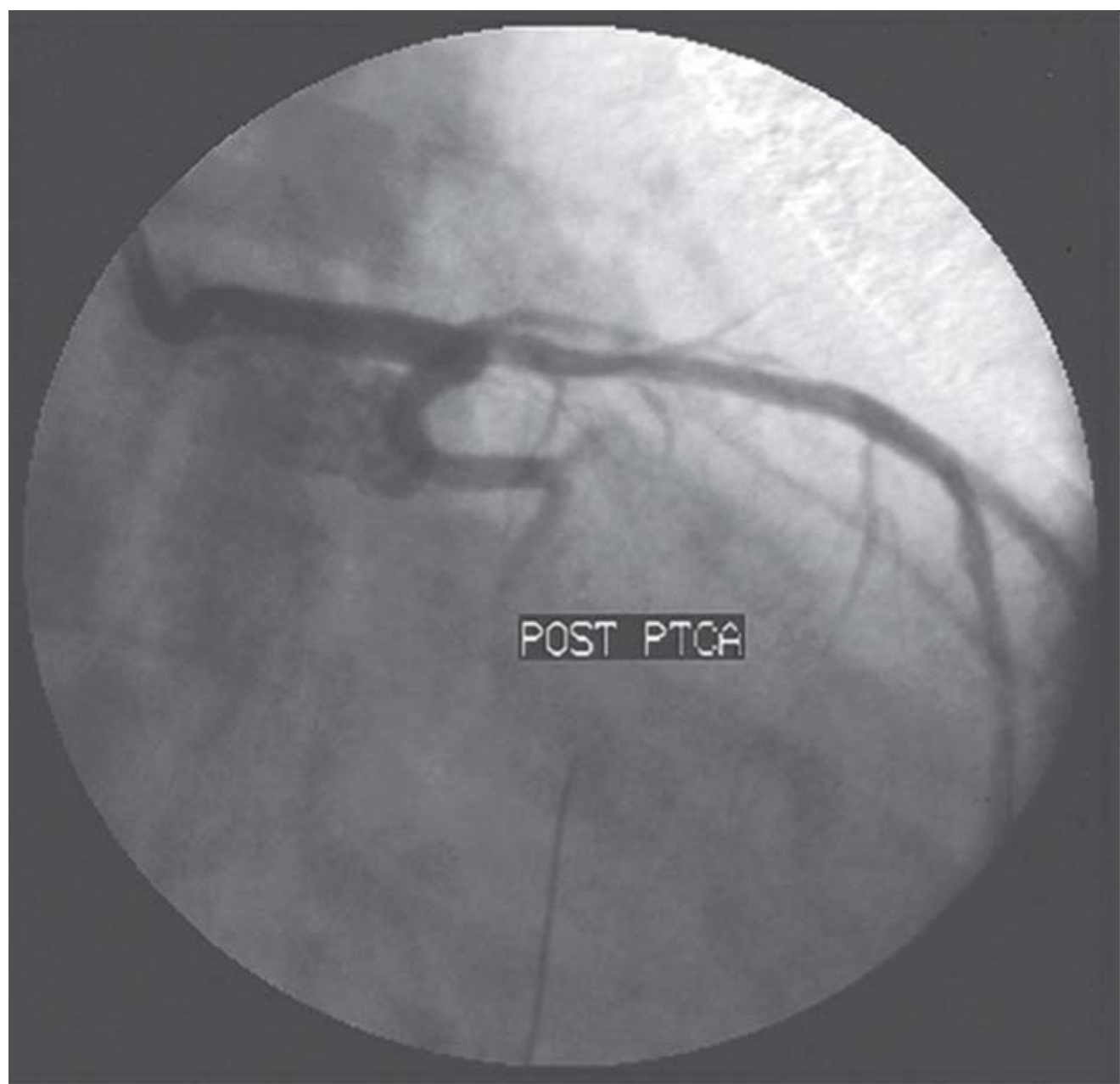




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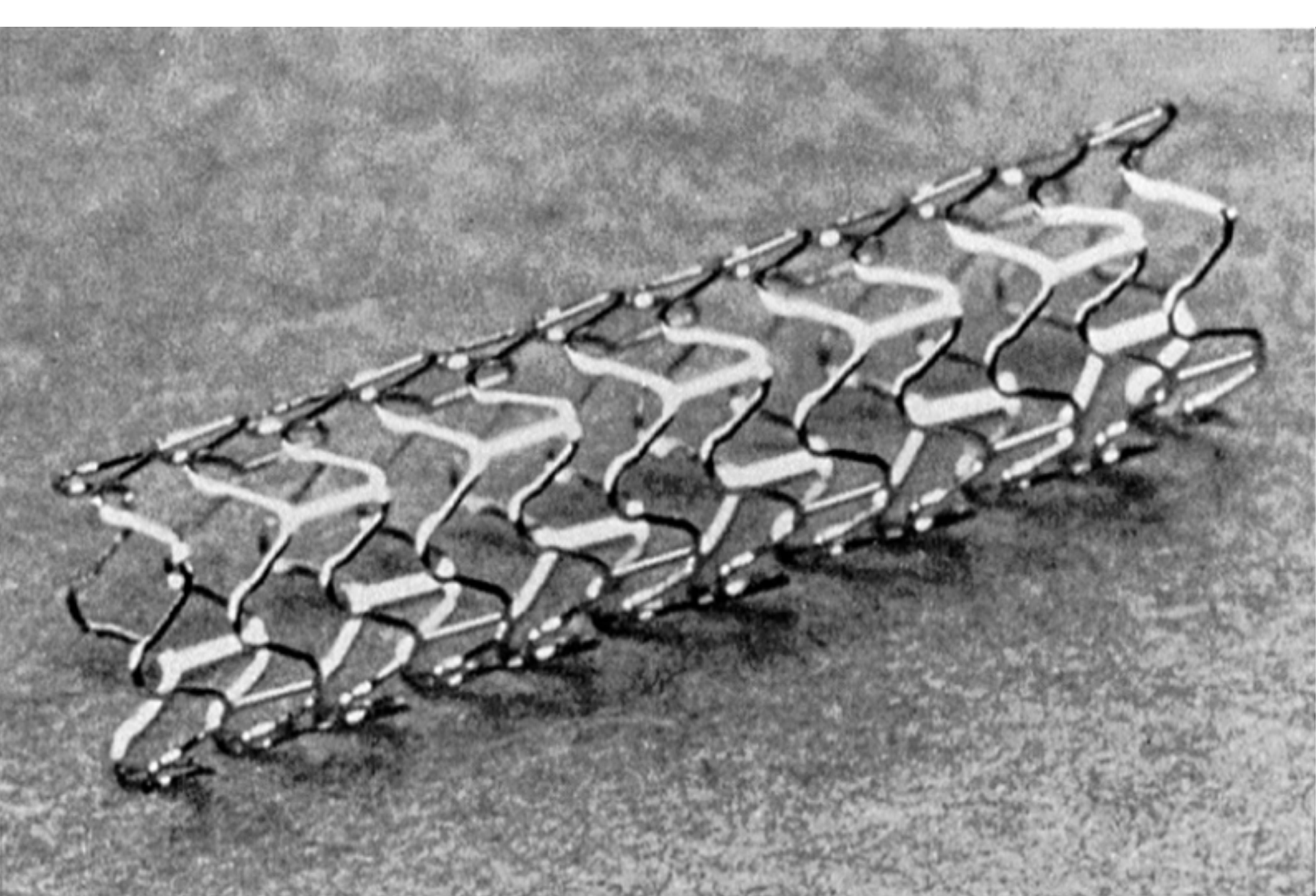


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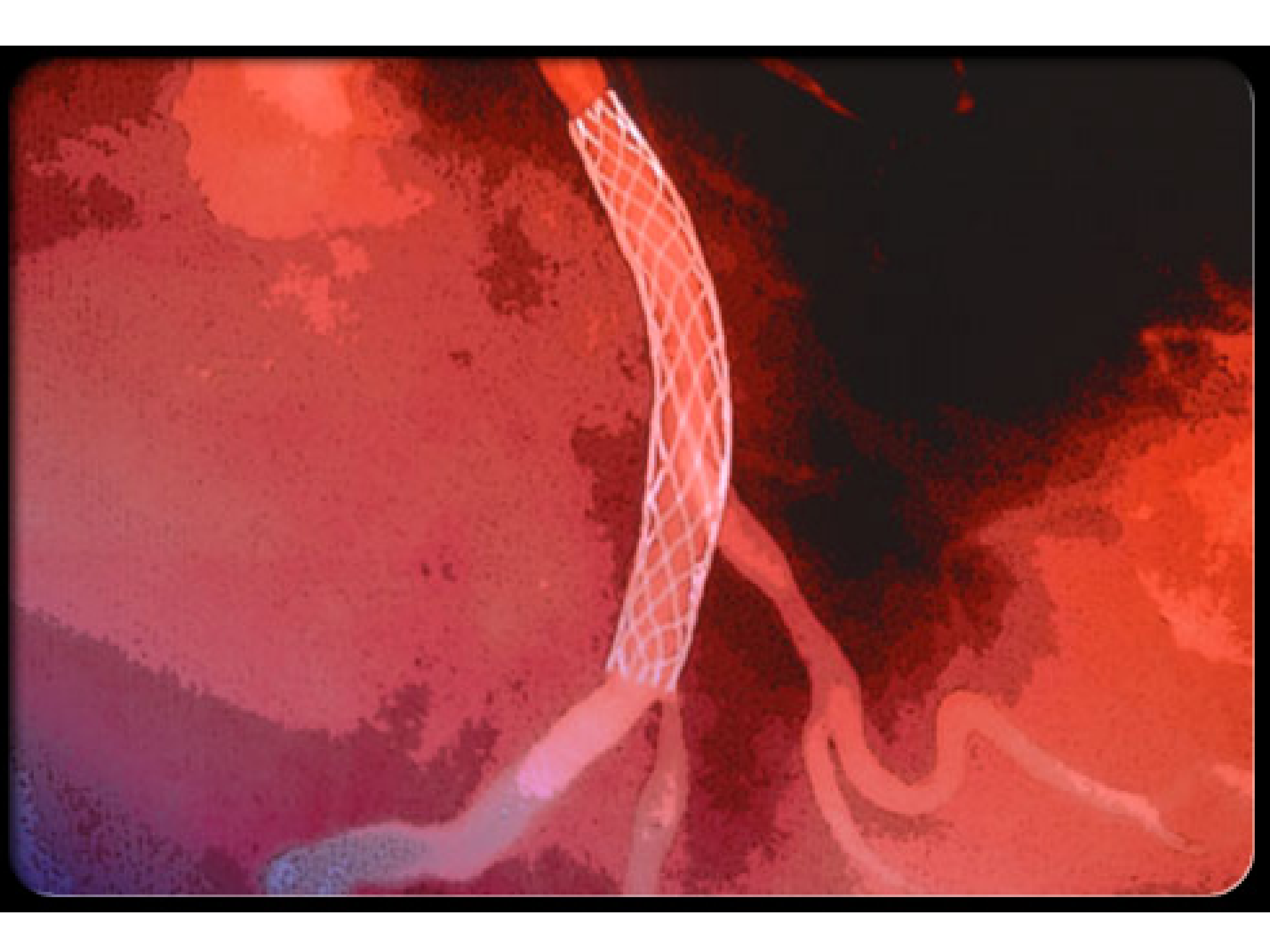


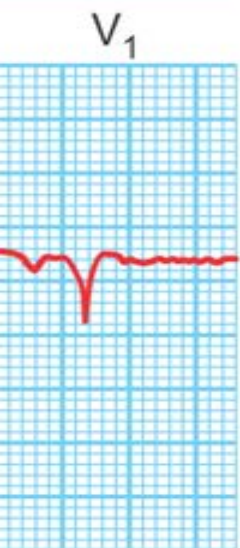
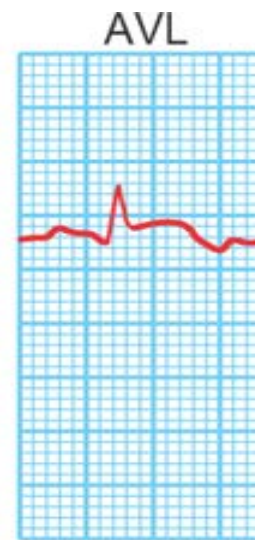
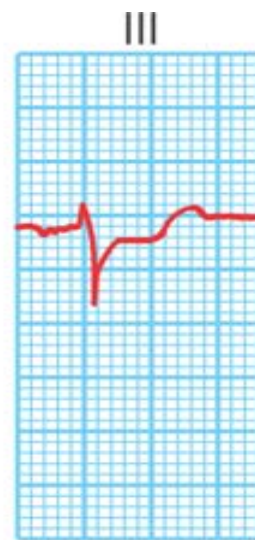
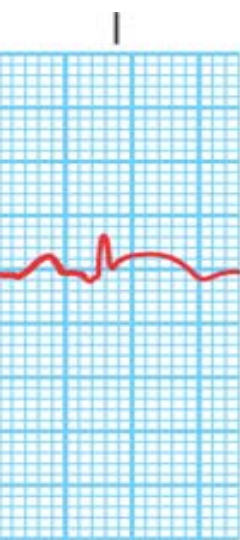
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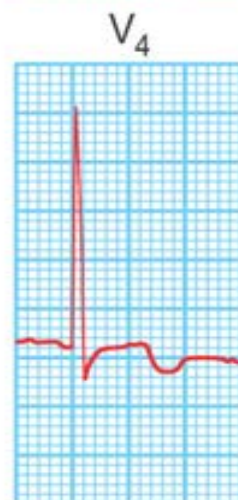
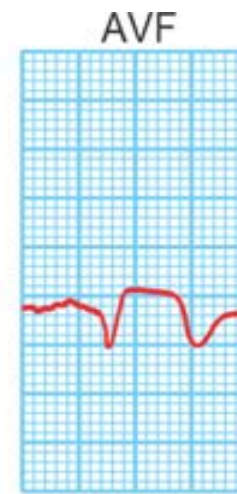


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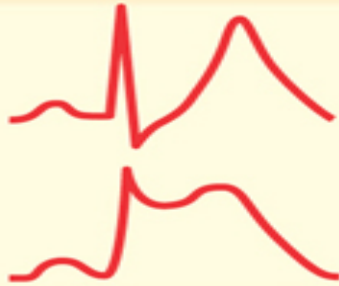




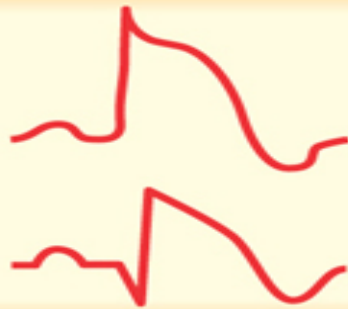




Before



Minutes afterwards



Hours afterwards



Days afterwards



Weeks afterwards

# DIAGNOSIS

## Upper GI Endoscopy & biopsy

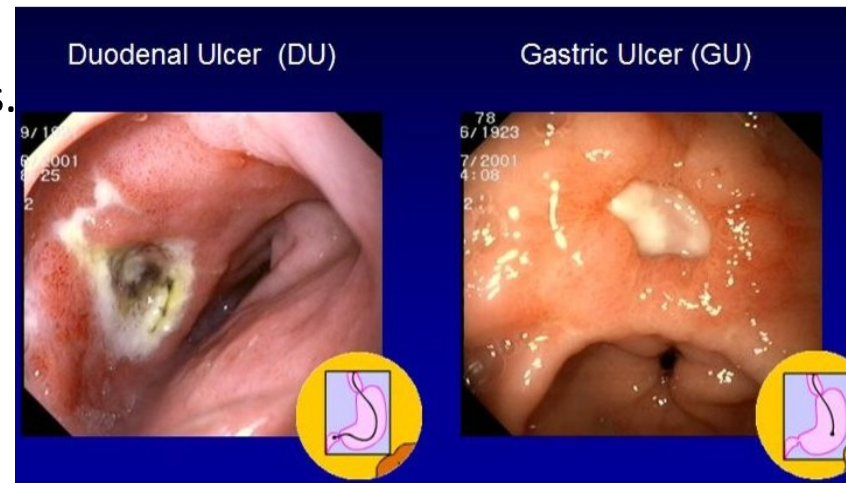
The gold standard for the diagnosis of HP infection, because histology not only confirms the presence of HP, but also gives information on the presence or absence of gastritis, gastric atrophy, intestinal metaplasia, MALT lymphoma, and cancer. Sensitivity & Specificity 95%.

### False negative result in:

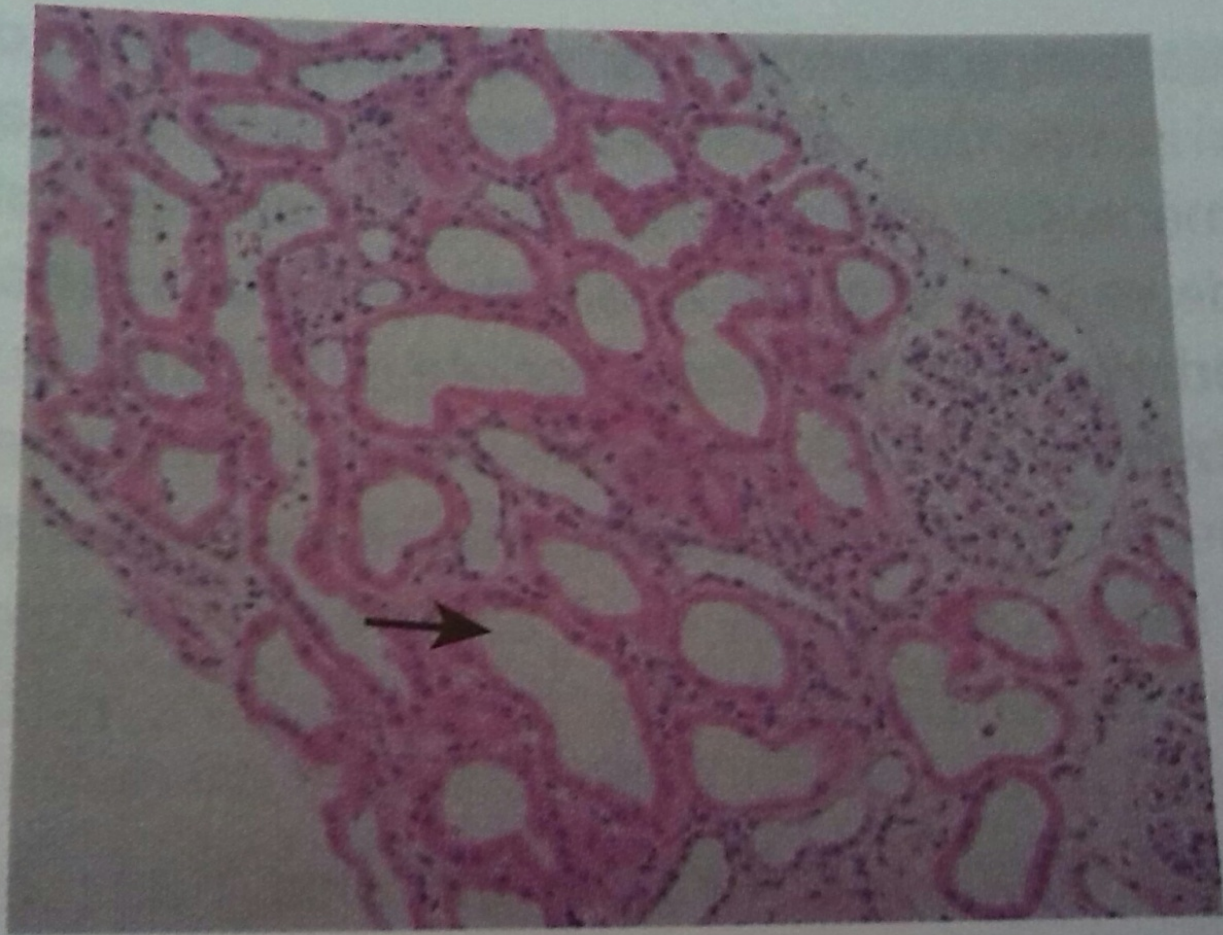
- a. Recent GI bleed.
- b. Use of bismuth
- c. Use of antibiotics.
- d. Use of sucralfate.
- e. Use of acid-suppressive therapy .

### Accordingly endoscopy is indicated for:

1. Patients above age of 55 years with dyspepsia.
2. Patients with GU.
3. Patients with dyspepsia and alarm symptoms.

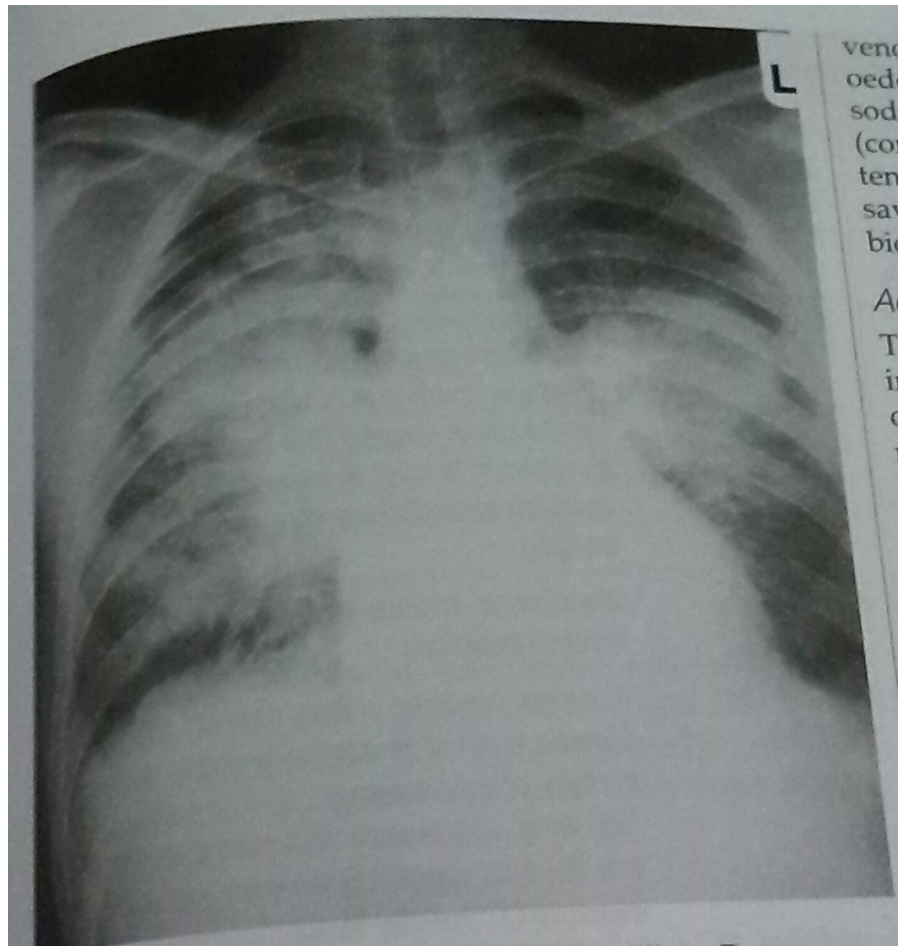






**Figure 12.44 Acute tubular necrosis** showing effacement and loss of the proximal tubule brush border, patchy loss of tubular cells and focal areas of proximal tubule dilatation (arrow).

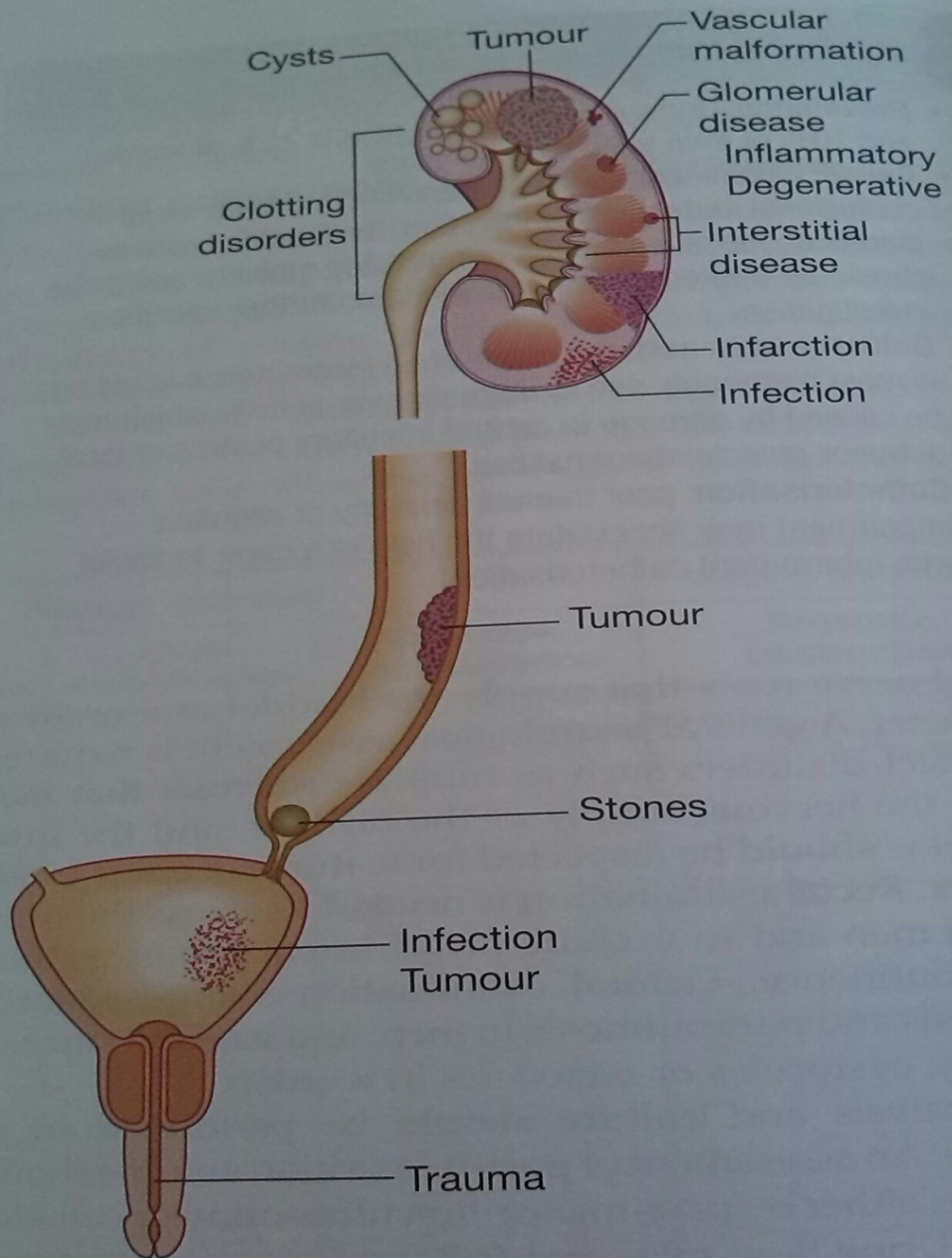
4-Acute Pul.Oedema due to acute fluid salt retention  
and high BP, causing- Acute-LV-FAILURE



# HYDRONEPHROSIS



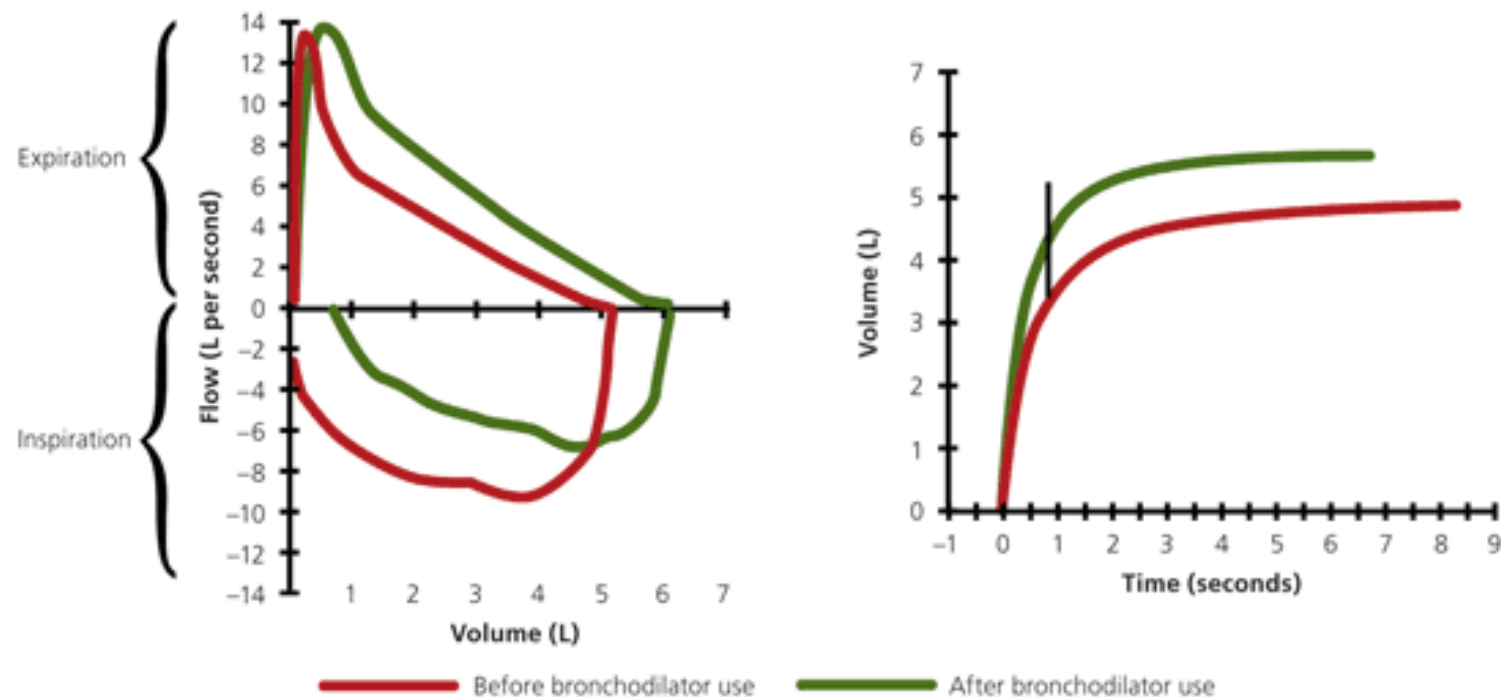




**Fig. 17.12** Causes of haematuria.

Age: 26 years    Height: 5 ft, 8 in    Weight: 197 lb    Sex: Male    Race: Hispanic

Spirometry	Prebronchodilators				Postbronchodilators		
	Predicted	LLN	Actual	% of predicted	Actual	% of predicted	% change
FVC (L)	5.20	4.34	5.18 <sup>A</sup>	99 <sup>D</sup>	6.06 <sup>F</sup>	116	+16 <sup>I</sup>
FEV <sub>1</sub> (L)	4.37	3.64	3.55 <sup>B</sup>	81 <sup>E</sup>	4.64 <sup>G</sup>	106	+30 <sup>J</sup>
FEV <sub>1</sub> /FVC (%)	84	75	68 <sup>C</sup>	81	77 <sup>H</sup>	91	+11
FEF <sub>25%-75%</sub> (L per second)	4.74	3.11	2.41	50	3.84	80	+59



A = FVC (before bronchodilators), this is > LLN and thus does not show a restrictive pattern

B = FEV<sub>1</sub> (before bronchodilators)

C = FEV<sub>1</sub>/FVC ratio (before bronchodilators), this is < LLN and thus shows an obstructive defect

D = FVC percentage of predicted (before bronchodilators)

E = FEV<sub>1</sub> percentage of predicted (before bronchodilators)

F = FVC (after bronchodilators)

G = FEV<sub>1</sub> (after bronchodilators)

H = FEV<sub>1</sub>/FVC ratio (after bronchodilators)

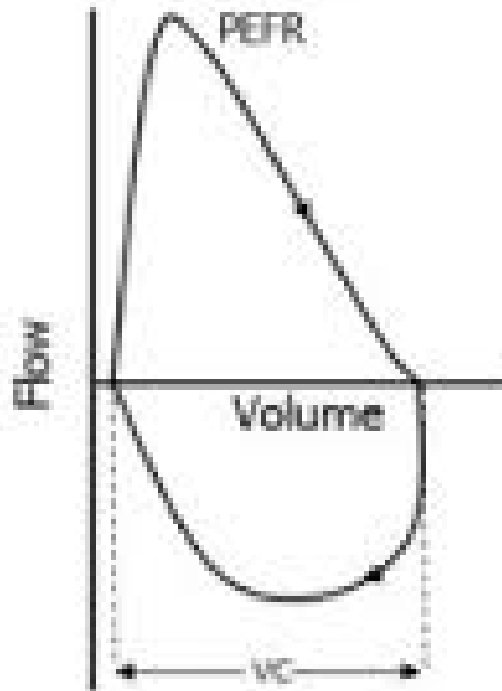
I = A 0.88-L increase in FVC is a 16% increase

J = A 1.09-L increase in FEV<sub>1</sub> is a 30% increase

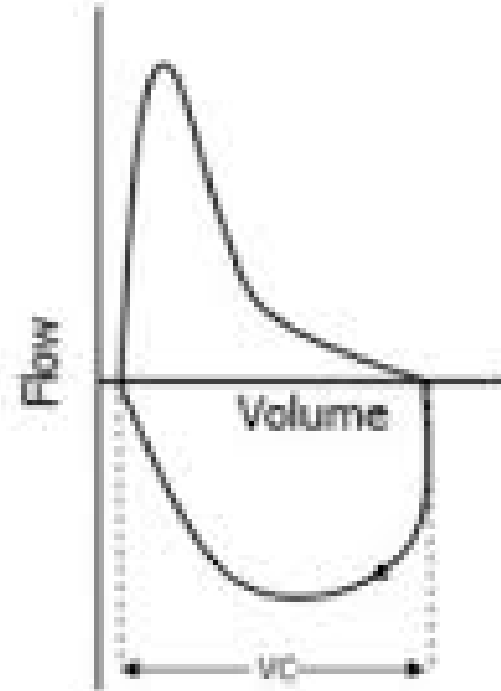
The above indicates reversibility because at least one of the two (FVC or FEV<sub>1</sub>) increased by at least 0.2 L and by at least 12%

# Flow volume loop in asthma

## Flow-Volume Loops



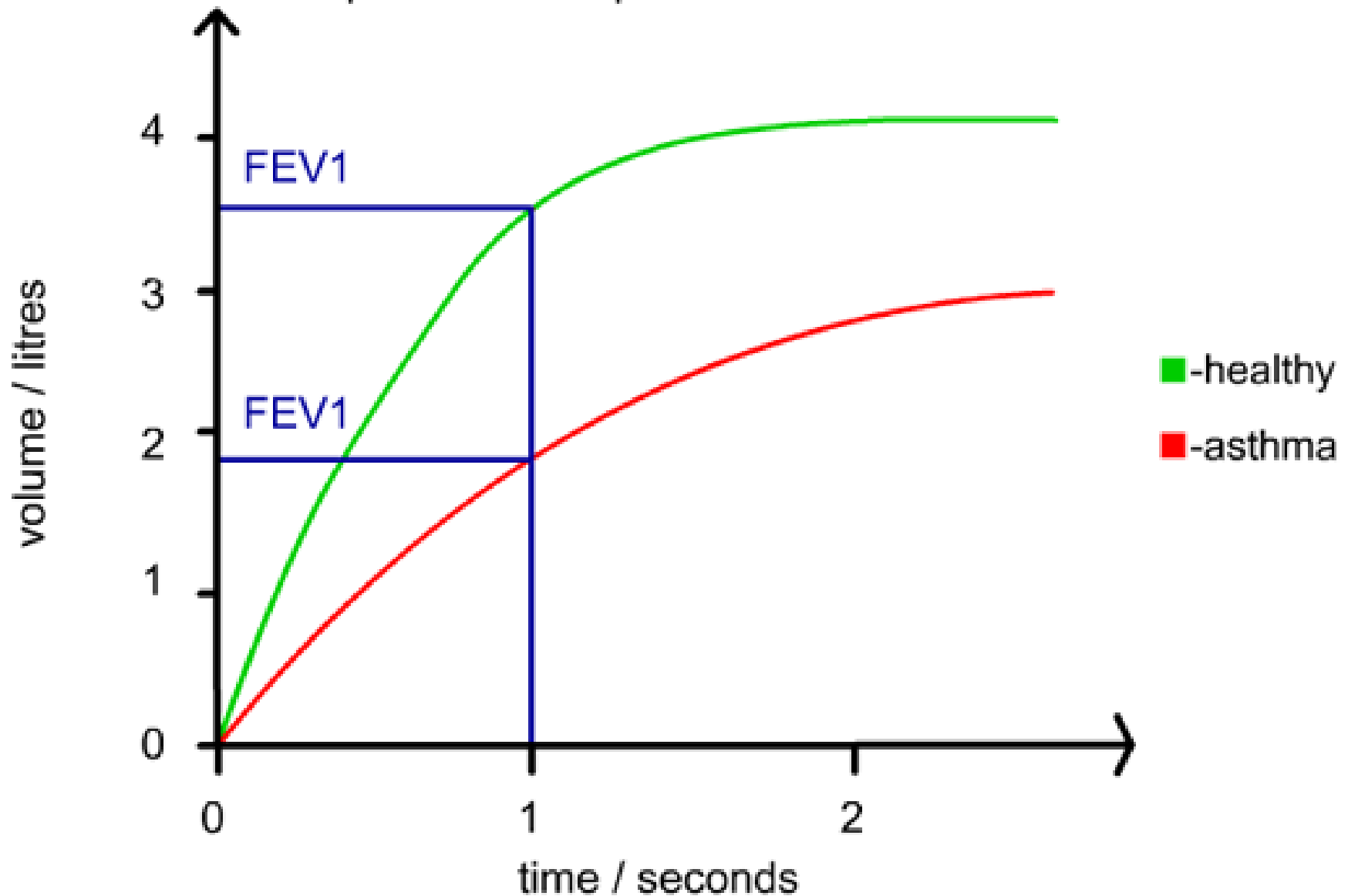
Normal



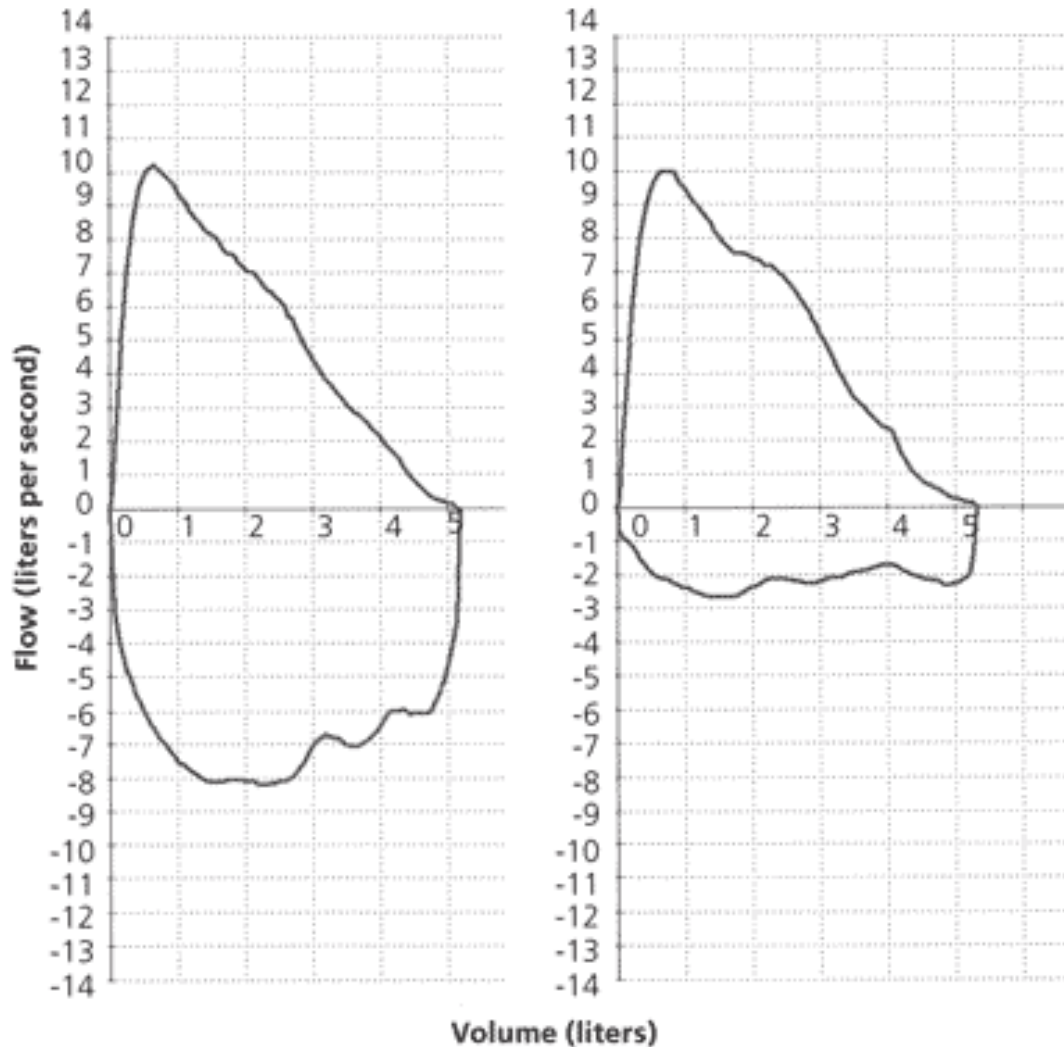
Obstruction



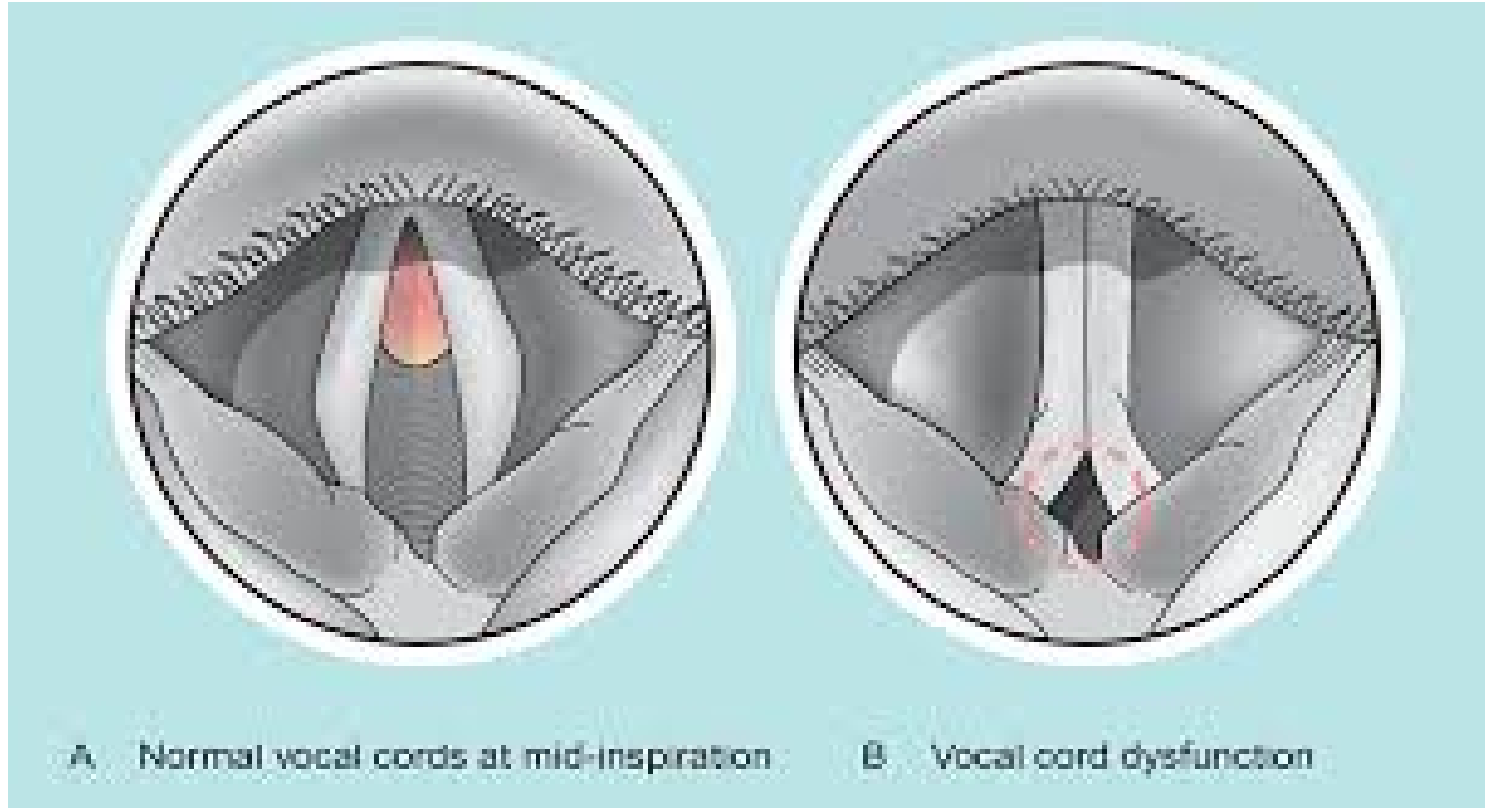
A graph comparing the forced expiratory volume in 1 second (FEV1) of a healthy person and a person with asthma



Flow-volume loop. (Left) Normal expiratory and inspiratory loop. (Right) Normal expiratory loop with flattening of the inspiratory loop, consistent with vocal cord dysfunction.



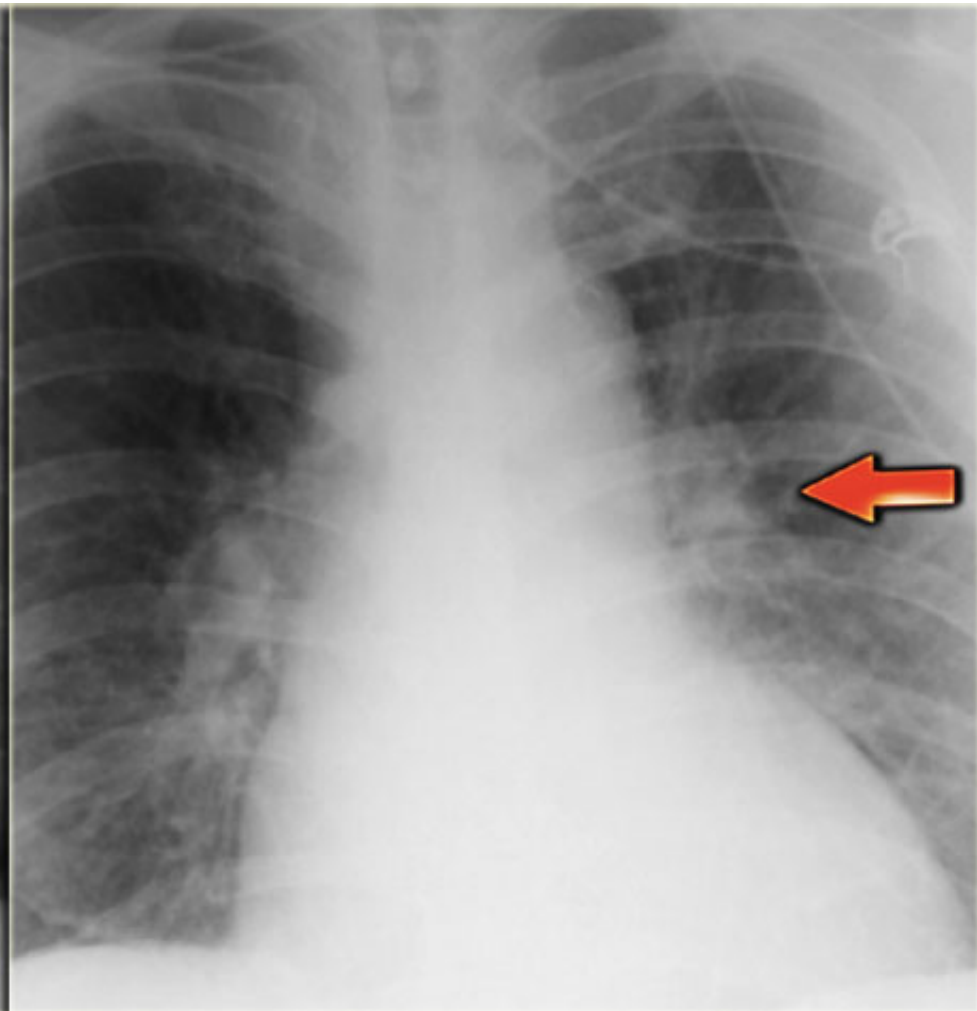
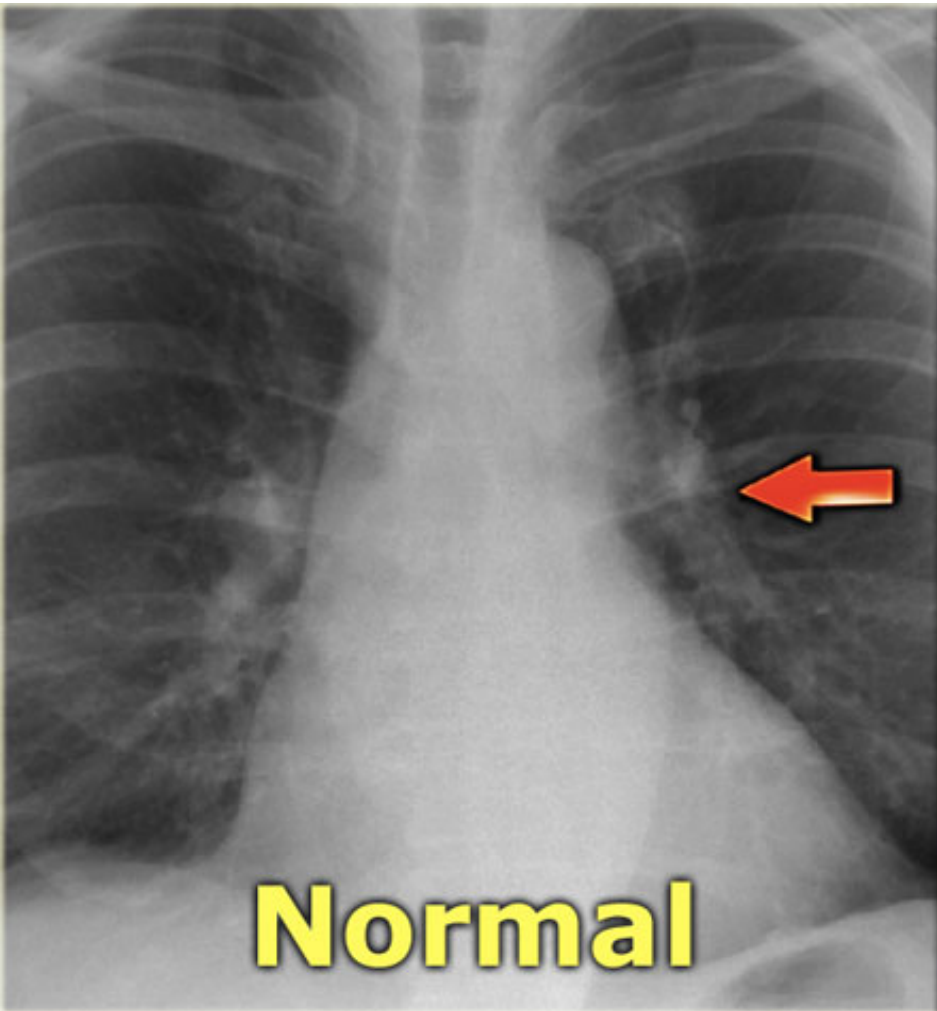
# Laryngoscopy ( VCD)

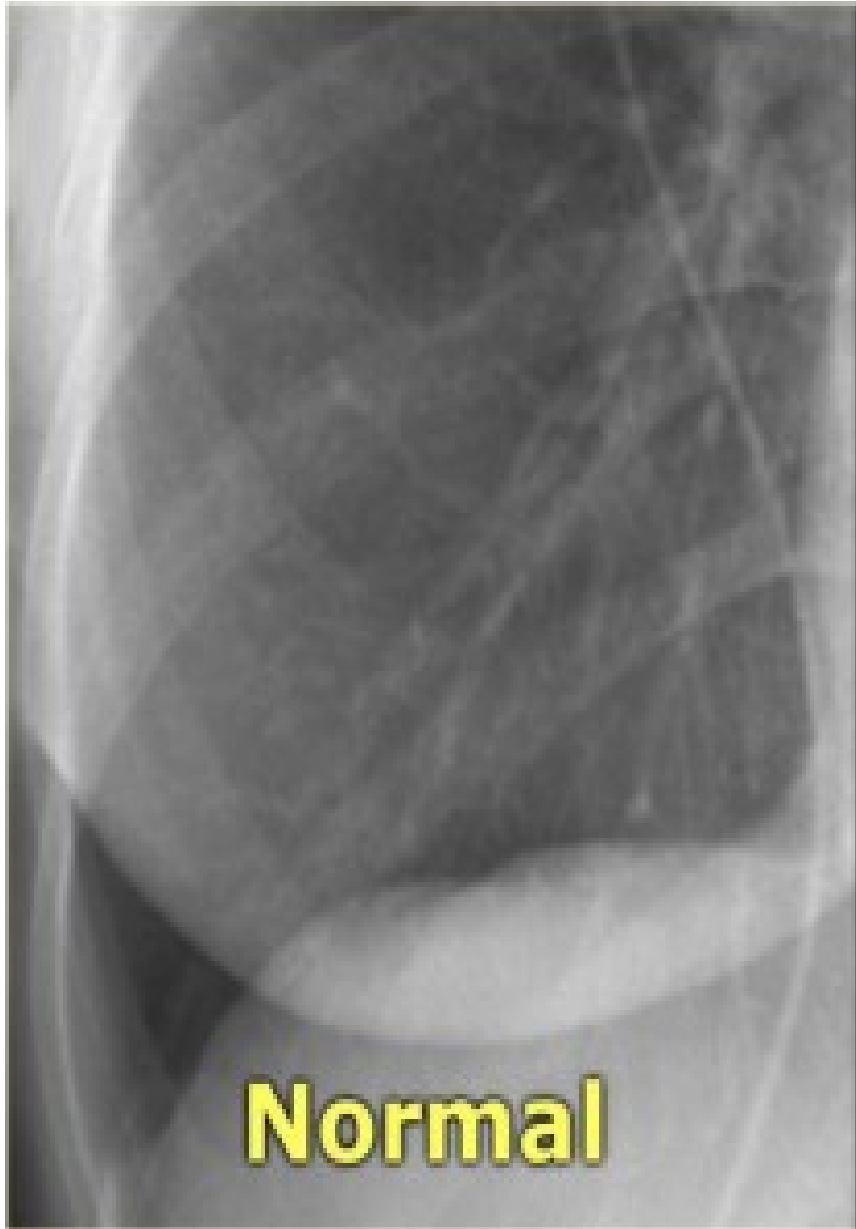




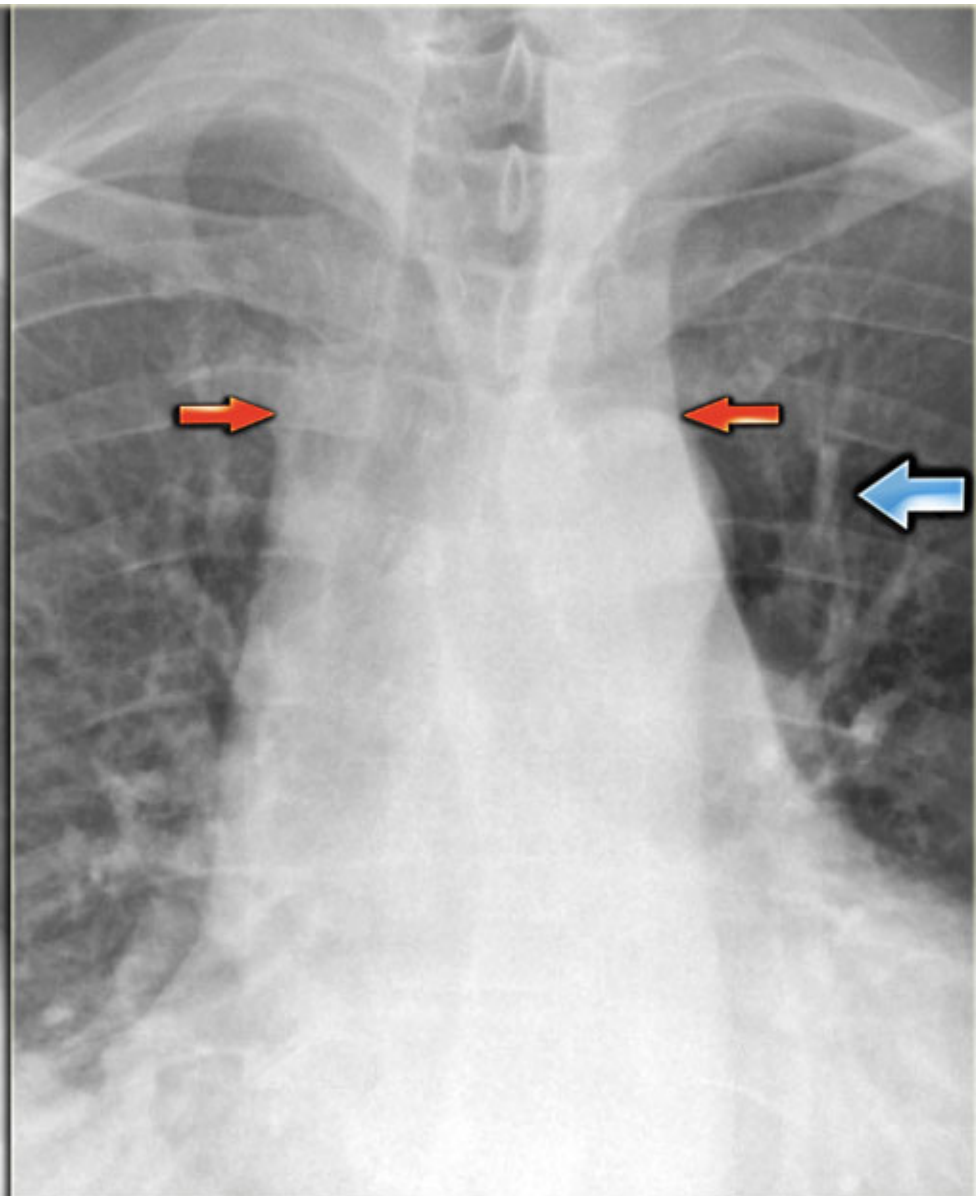
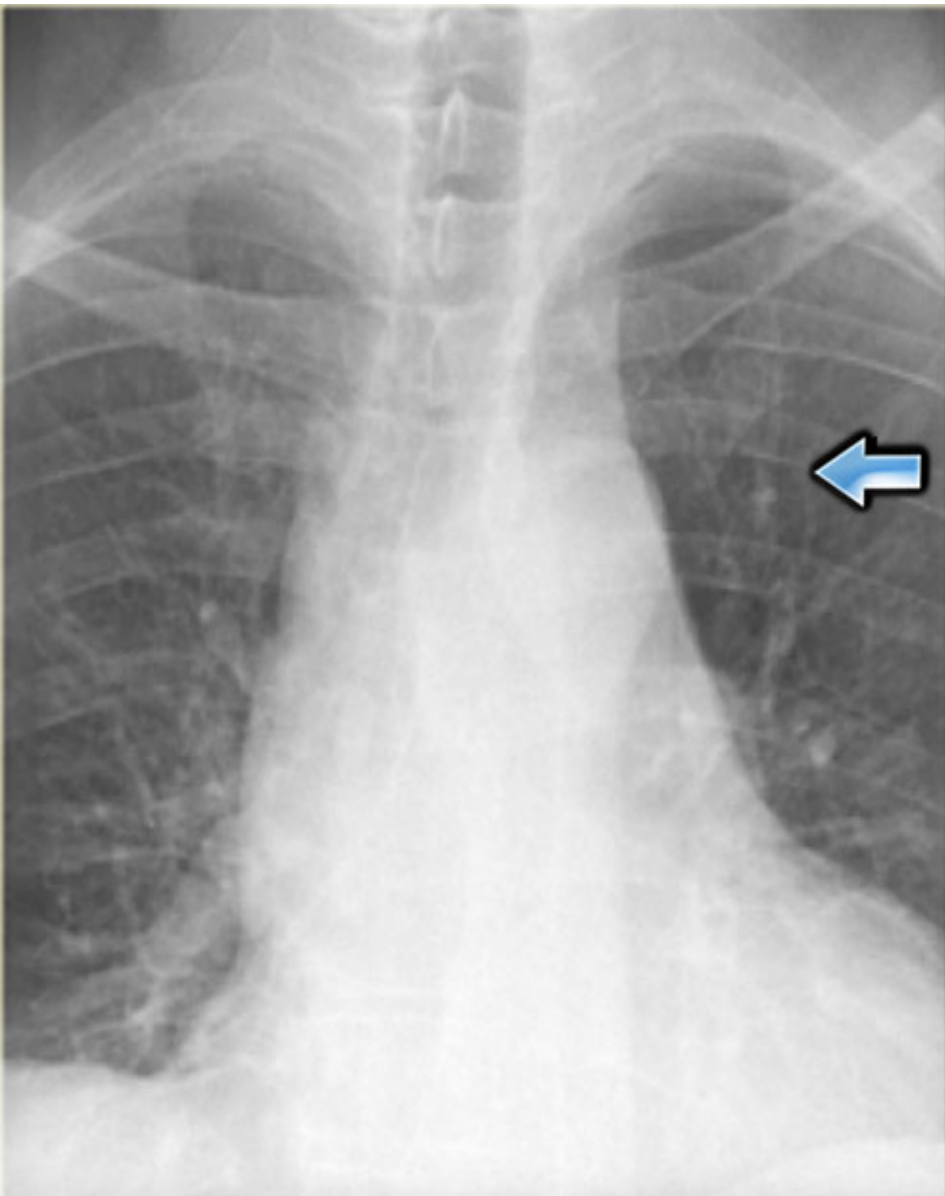
# Heart failure

## Peri-hilar haze in interstitial oedema

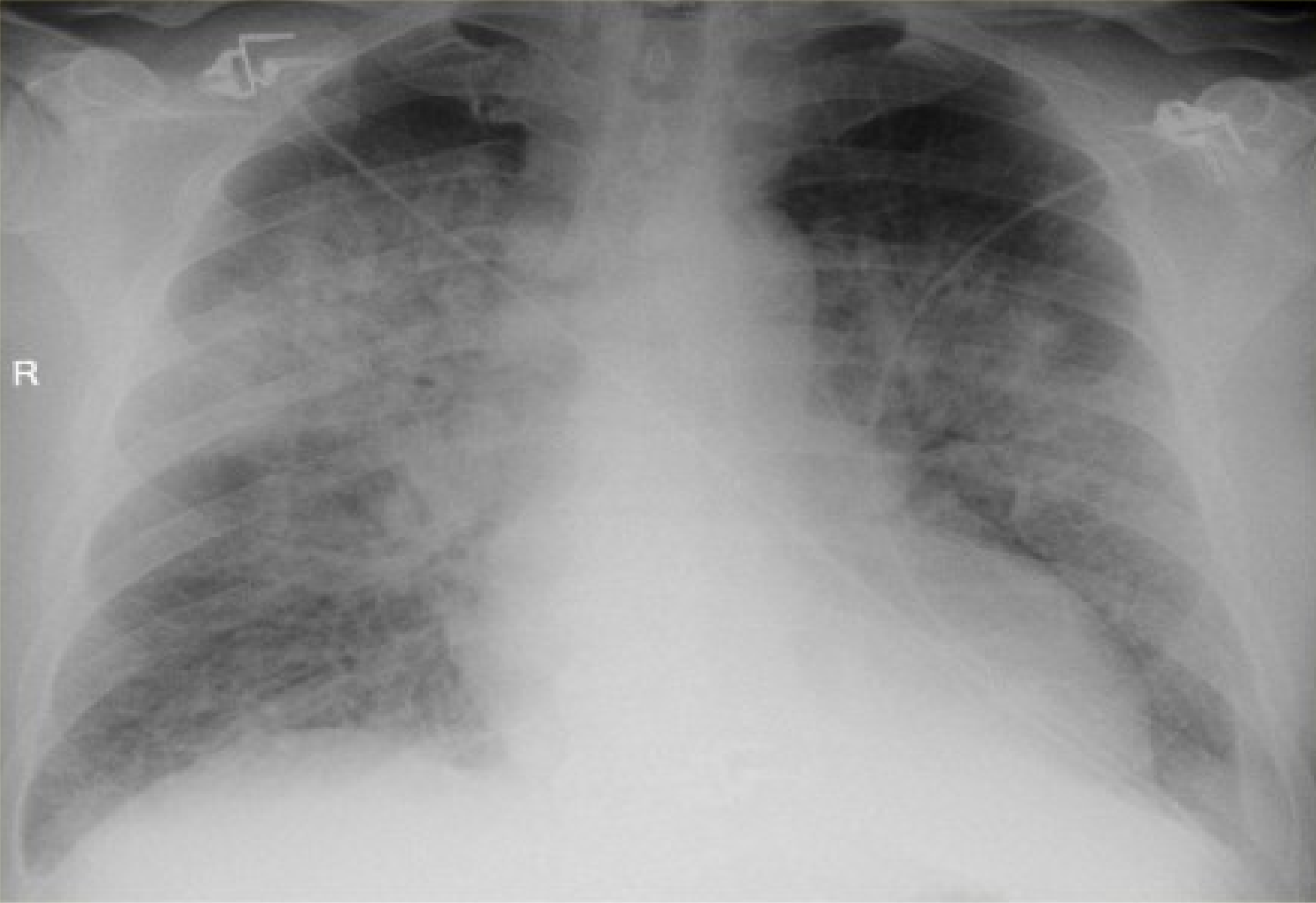




Left Normal, Right increased width of vessels.







Interstitial Oedema.

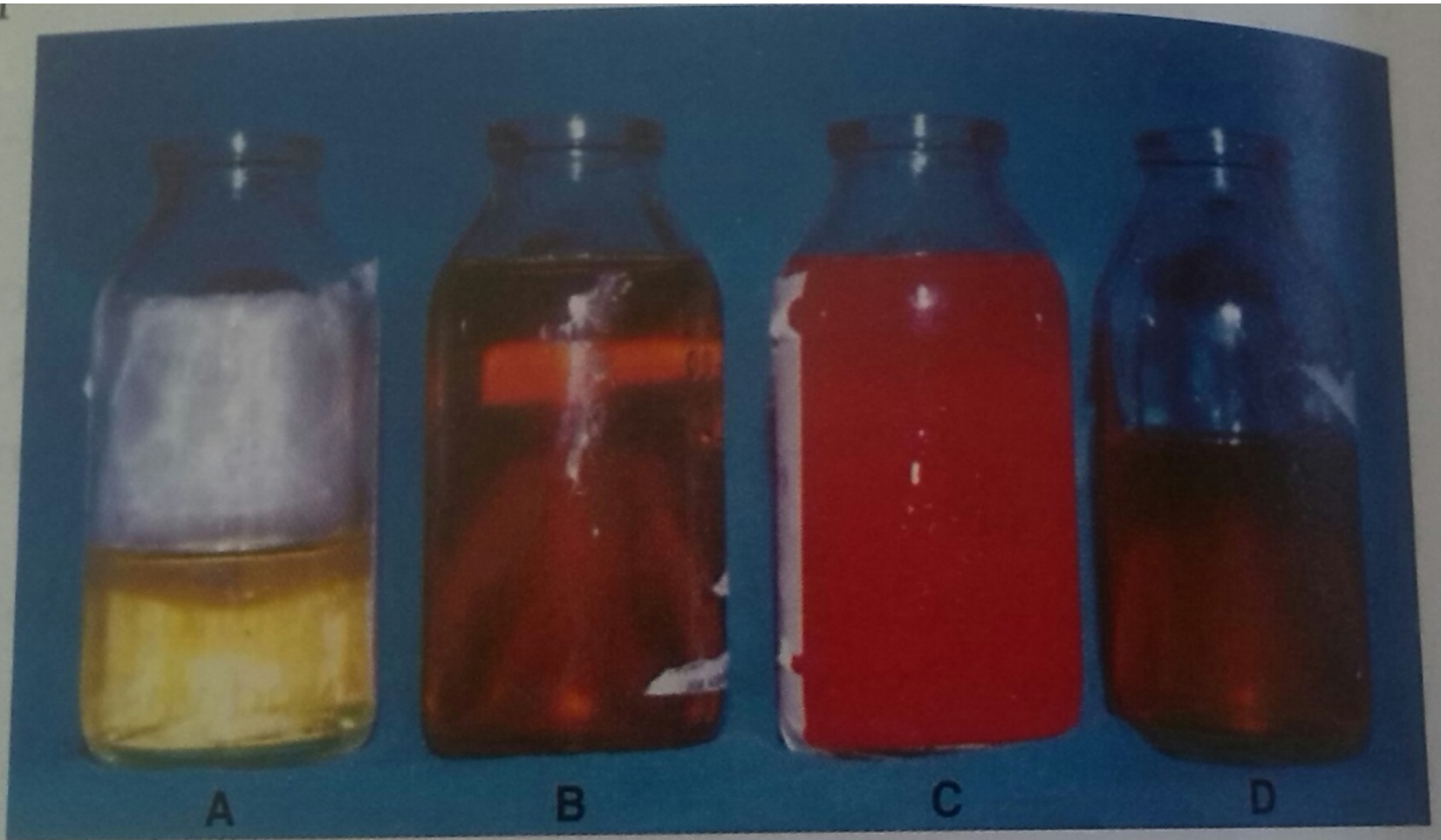


CT will also demonstrate signs of congestive heart failure.

On the image on the left notice the following:

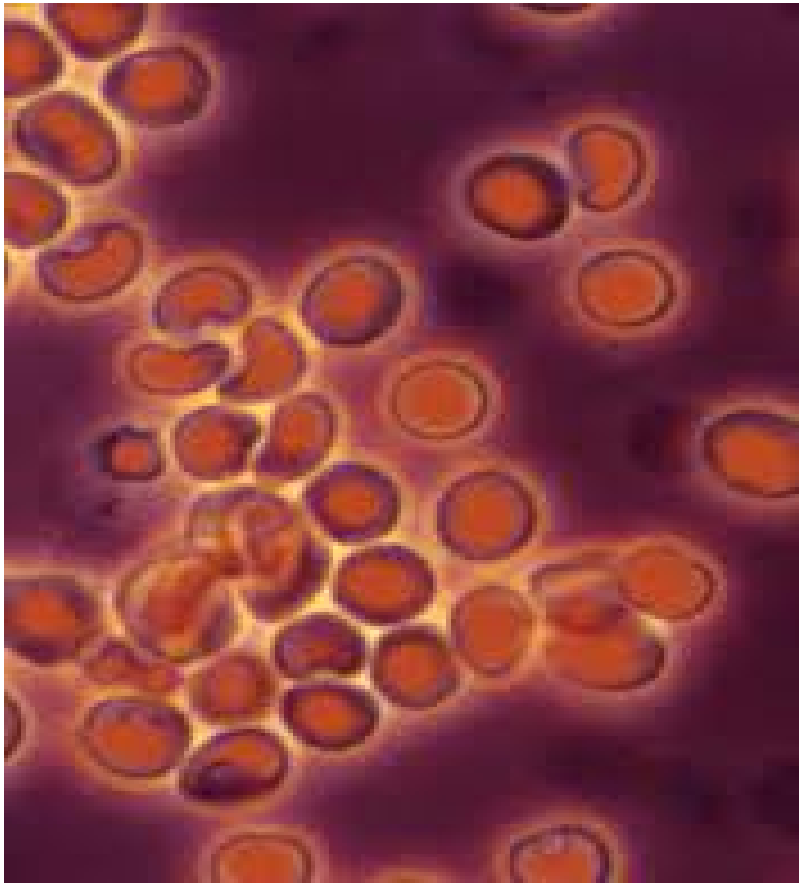
Thickened septal lines due to interstitial oedema CT scan

# URINE COLOUR



**Fig.14.8** : Abnormal colouration of the urine. A. Normal, B. Urine from a patient with Jaundice, C. Haematuria, D. Patient on rifampicin

# dipstick- positive haematuria



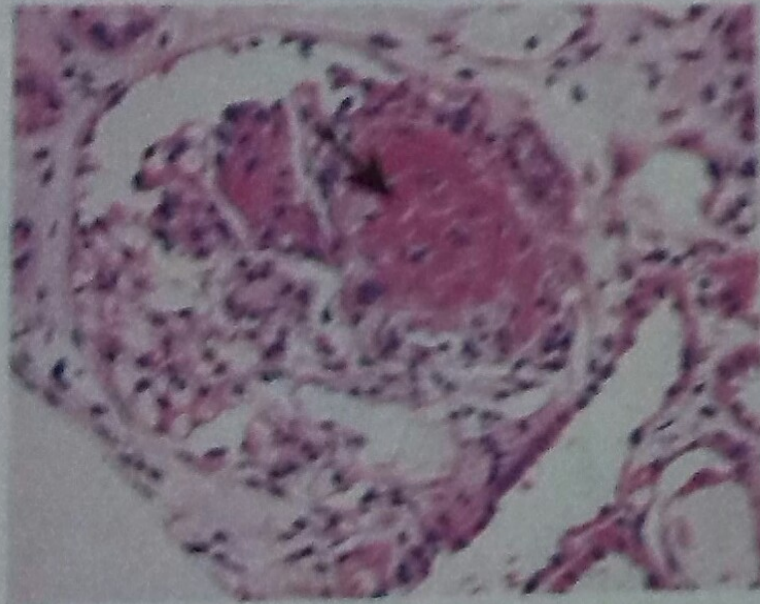


# RBC-CAST

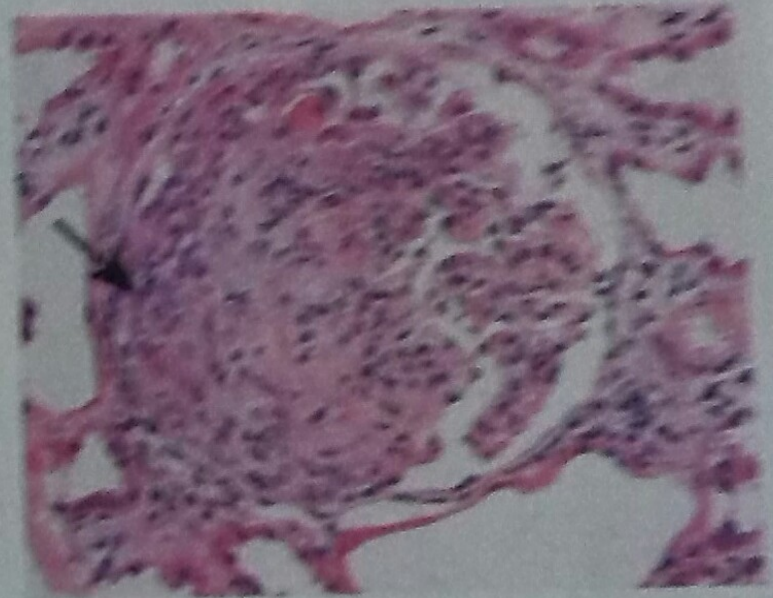


**Red-cell cast.** Note aggregation of red cells as a 'cast' of the tubule.

# RPGN



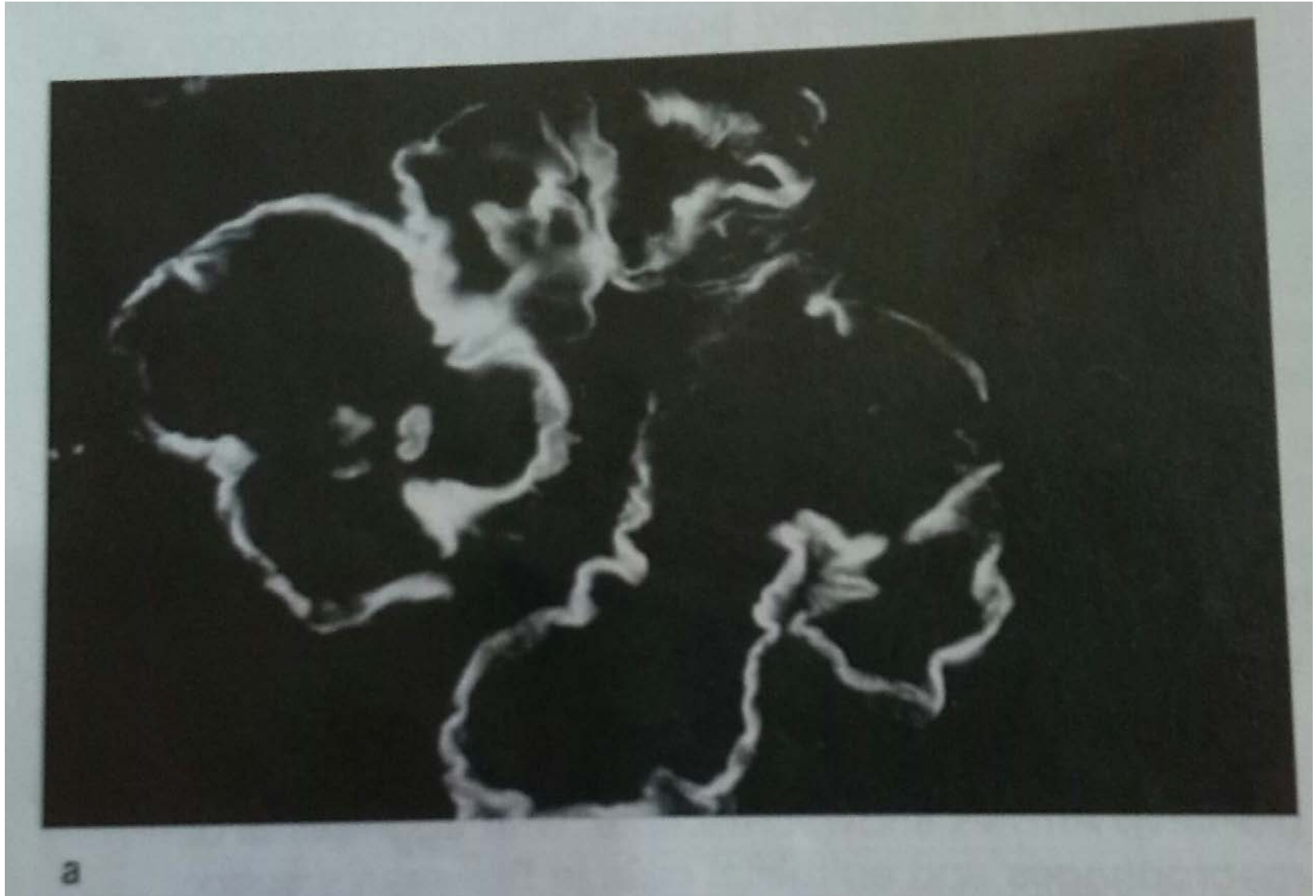
a



b

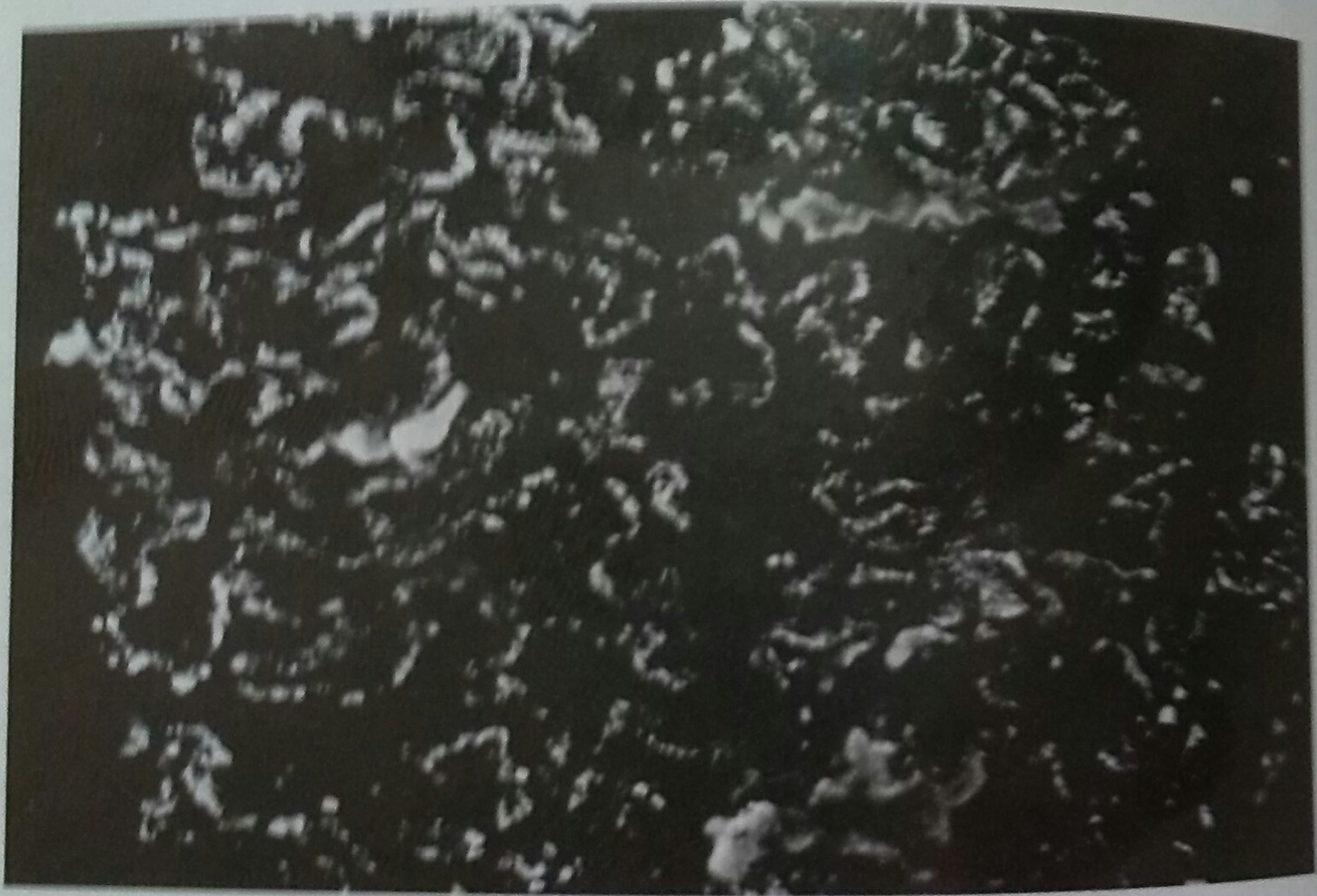
**Figure 12.22** Rapidly progressive glomerulonephritis (RPGN). Arrows show 'crescents' with aggregates of macrophages and epithelial cells in Bowman's space.  
(a) Focal necrotizing glomerulonephritis.  
(b) Crescentic glomerulonephritis.

Anti-GBM deposition linear pattern typical of Goodpasture's syndrome





# Immune complex deposition in a diffuse granular pattern



b





a cANCA.

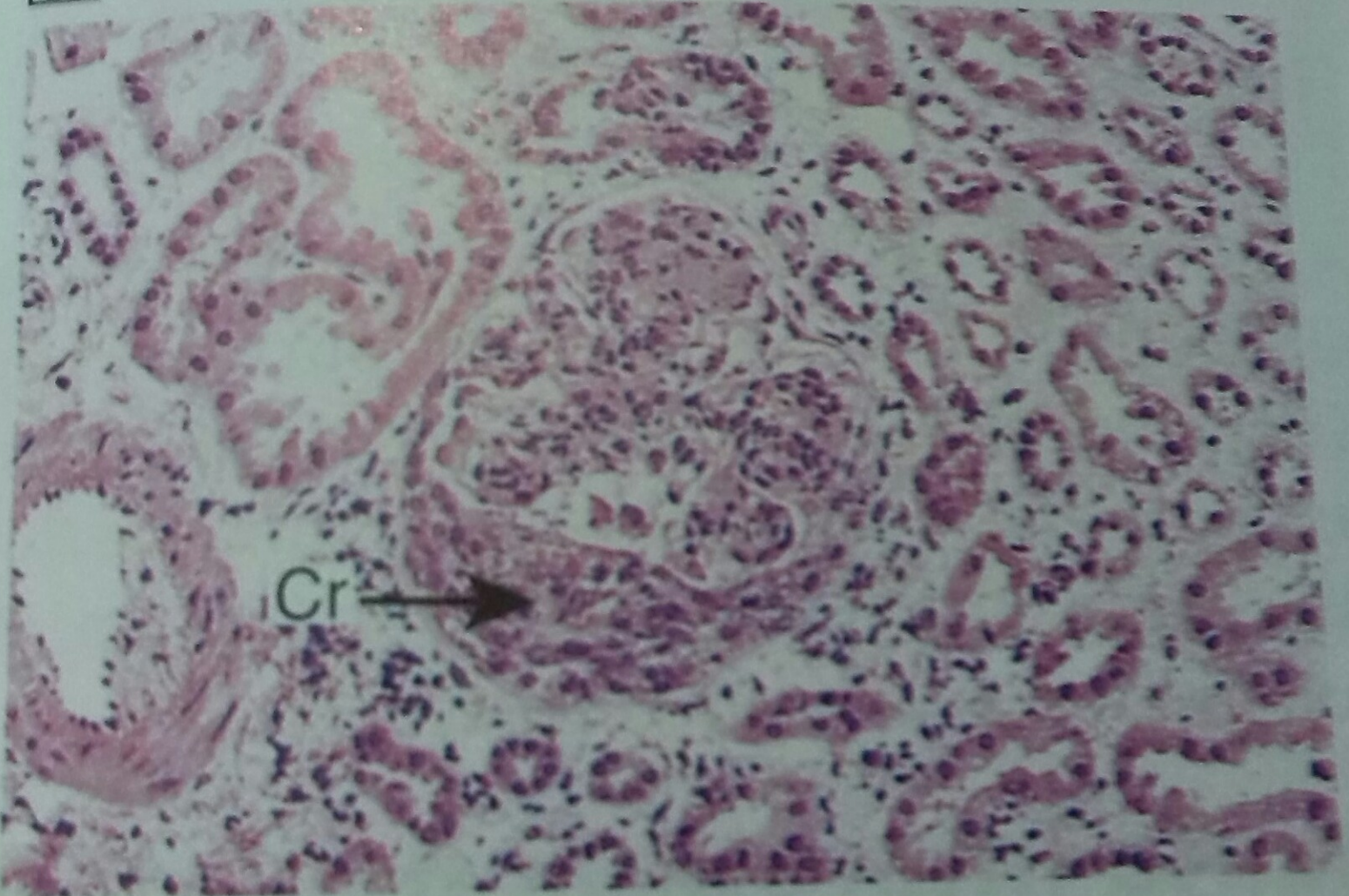


b pANCA.

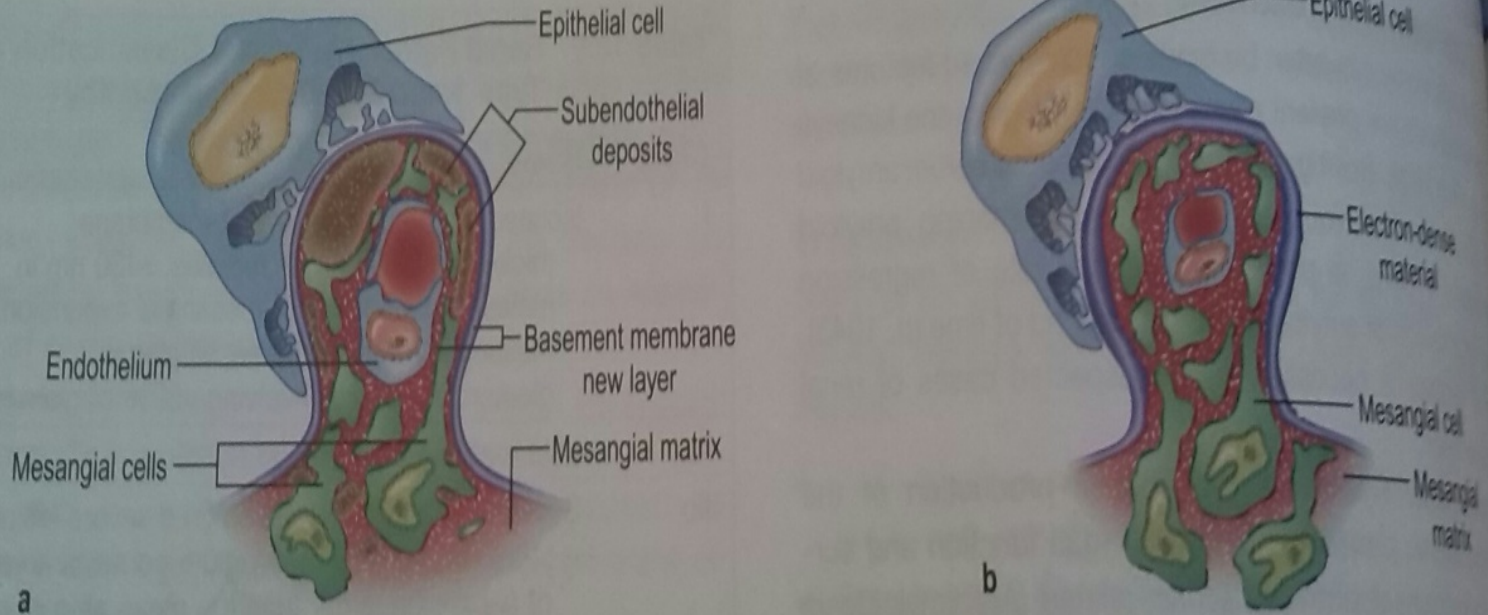
**ANCA positive glomerulonephritis – immunofluorescence.** (From Schrier

# Crescentic -GN

**E** Crescentic glomerulonephritis



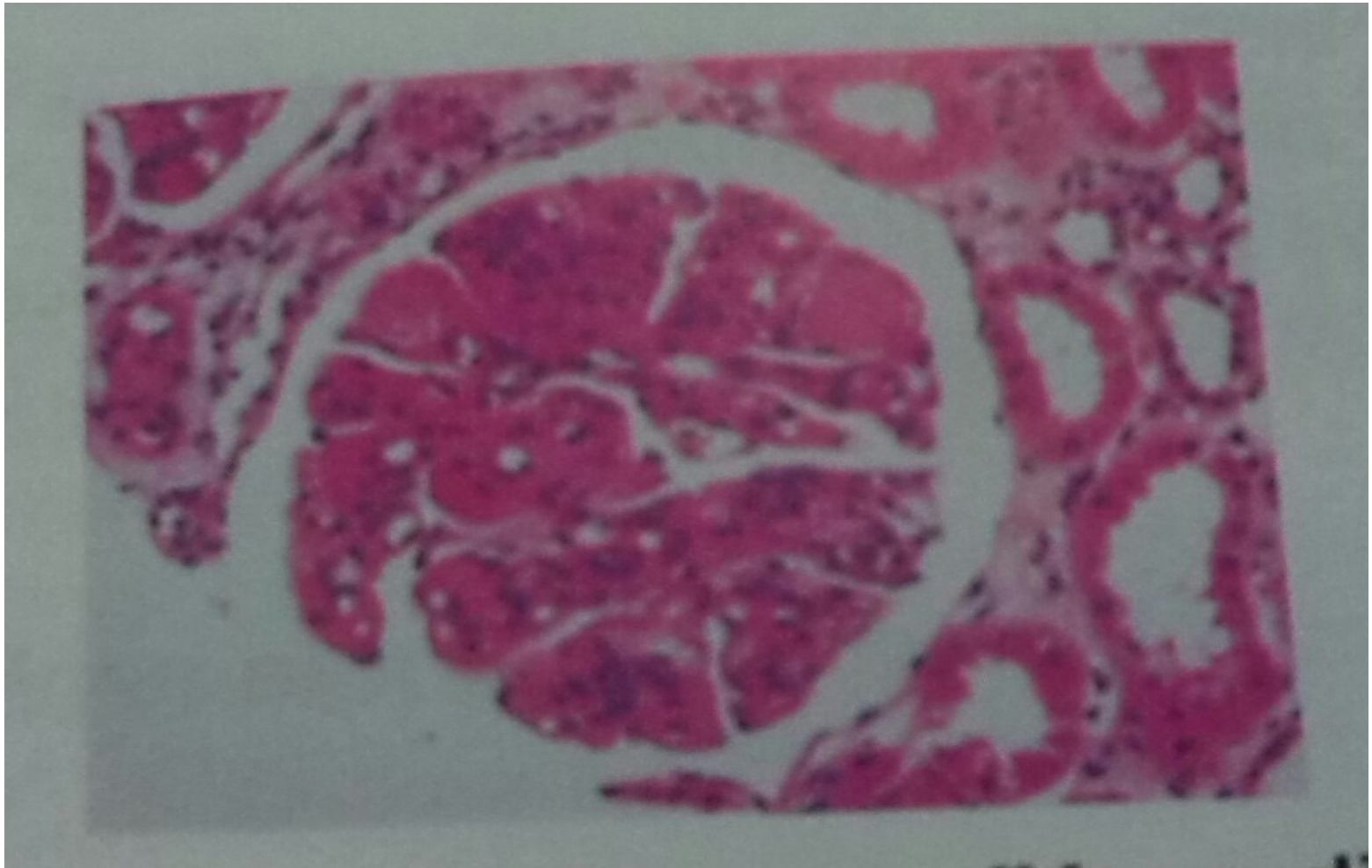
# Mesangiocapillary-GN



**Figure 12.18 Mesangiocapillary glomerulonephritis (MCGN).** (a) Type 1 MCGN showing expanded mesangial matrix and mesangial cells, thickened capillary wall, large subendothelial deposits and formation of a new layer of basement membrane (tram-line effect). (b) Type 2 MCGN. This shows a variable glomerular appearance; very electron-dense material has replaced Bowman's capsule, tubular basement membrane and part of the capillary. There is some proliferation of mesangial cells. (After: Marsh FP. *Postgraduate Nephrology*. Oxford: Butterworth Heinemann; 1985.)

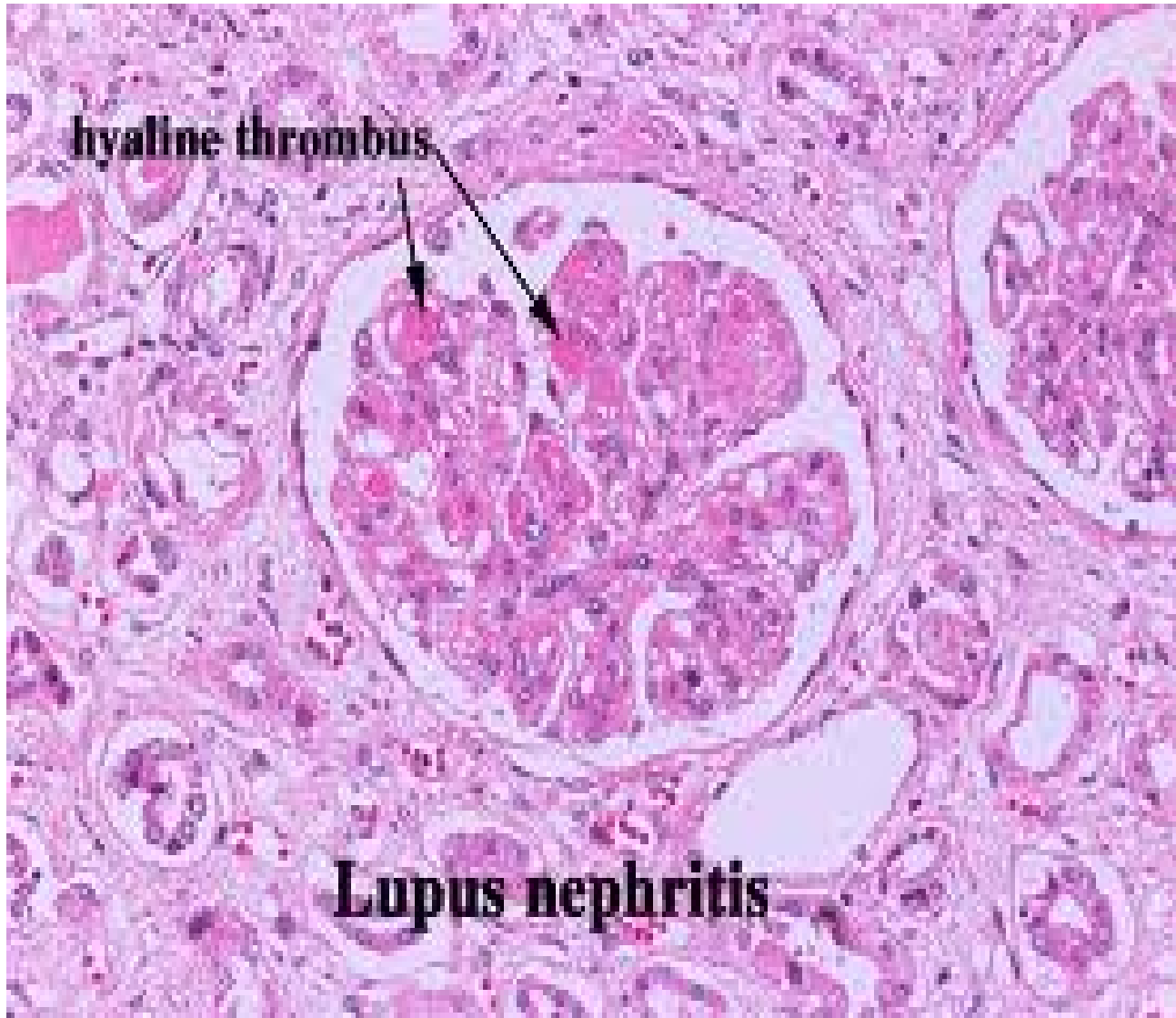


# Lupus-nephritis-type IV- diffuse proliferative nephritis

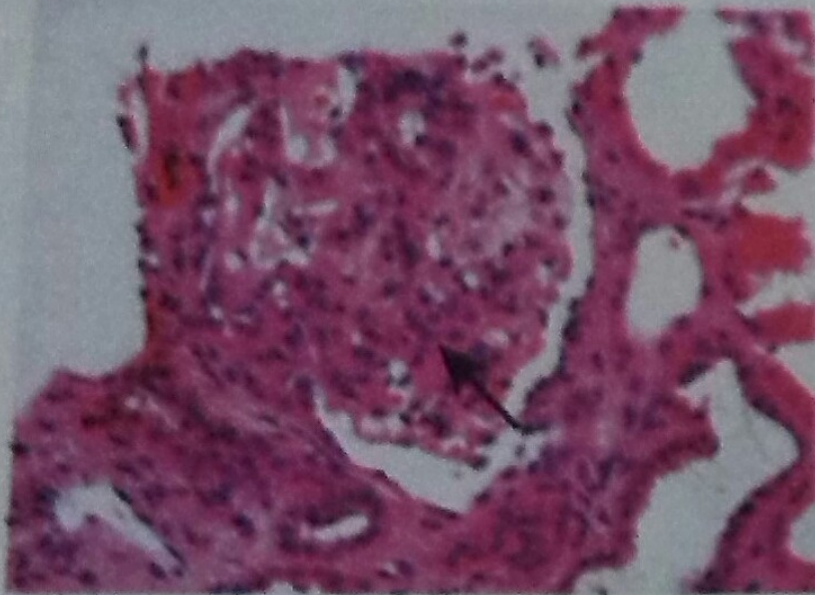




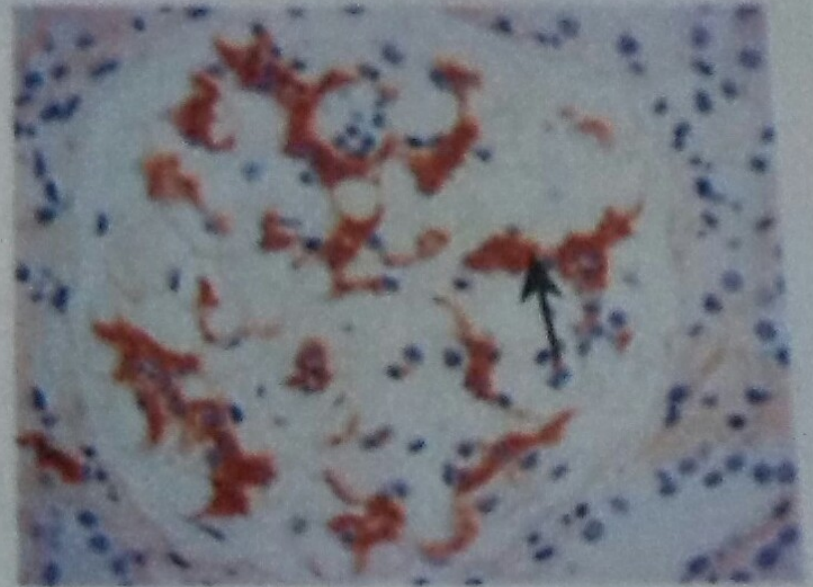
# LUPUS-NEPHRITIS



# IgA nephropathy



a



b

**Figure 12.21** IgA nephropathy. (a) Light microscopy. Showing mesangial cell proliferation (arrow) and increased matrix. (b) IgA deposits on immunoperoxidase staining.

# VASCULITIS



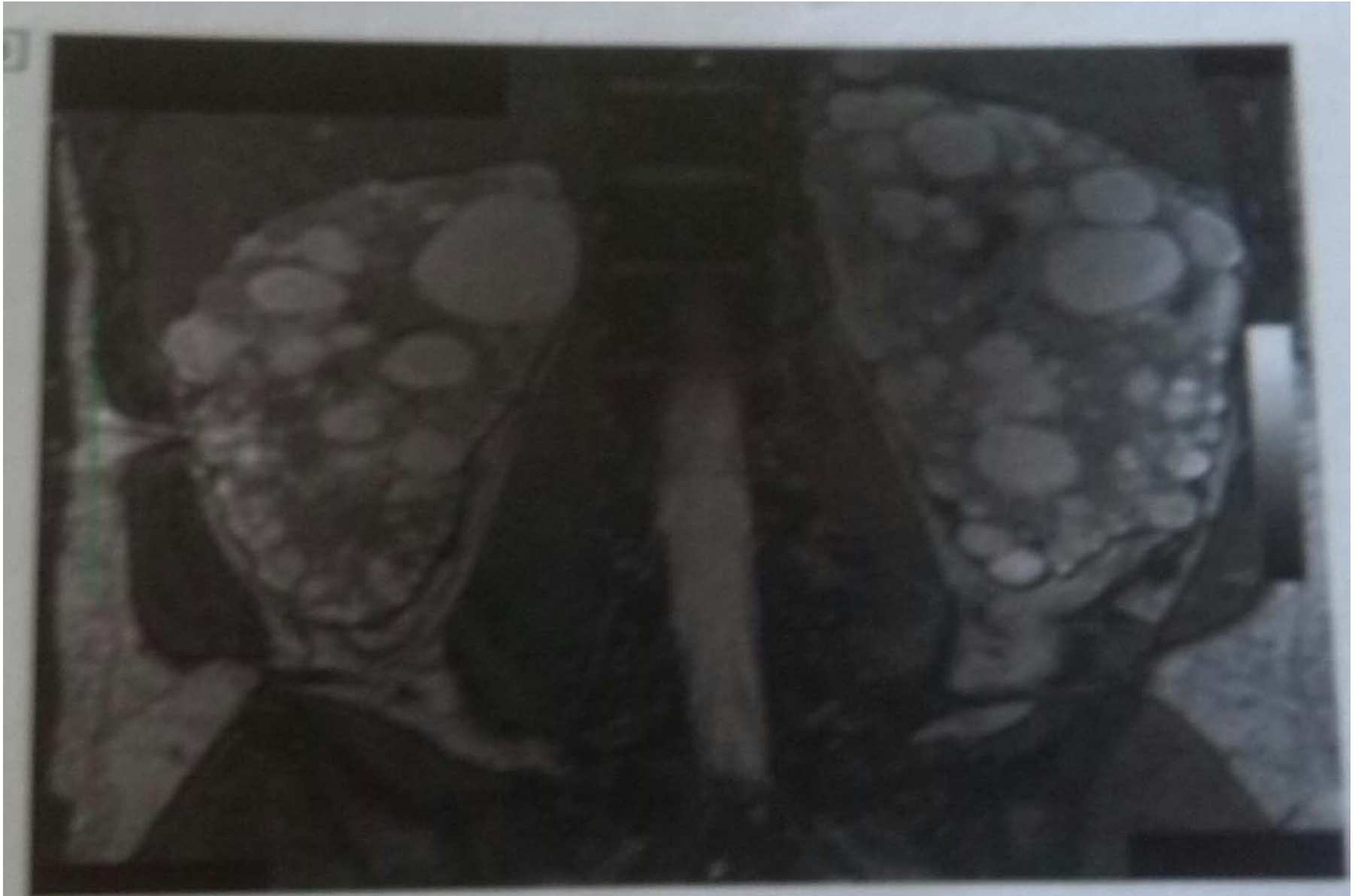
# VASCULITIS



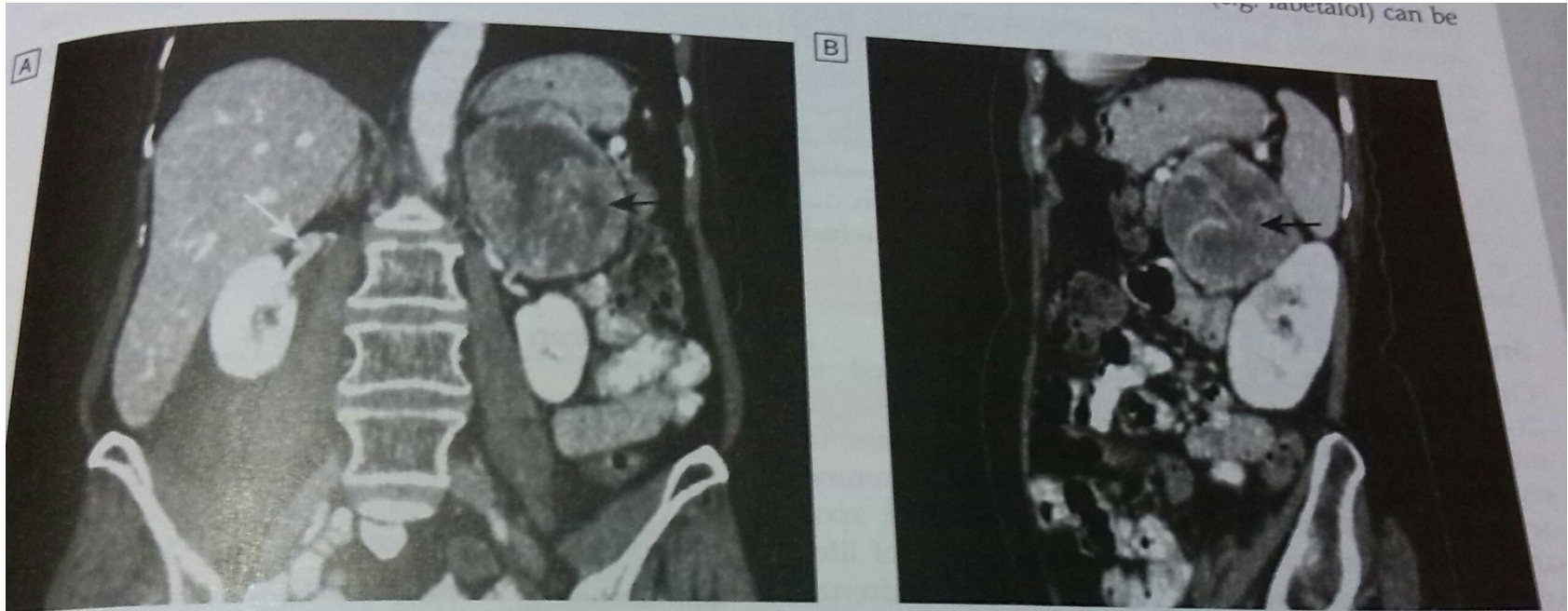
Figure 12.24 Vasculitic rash.



# Polycystic -kidney

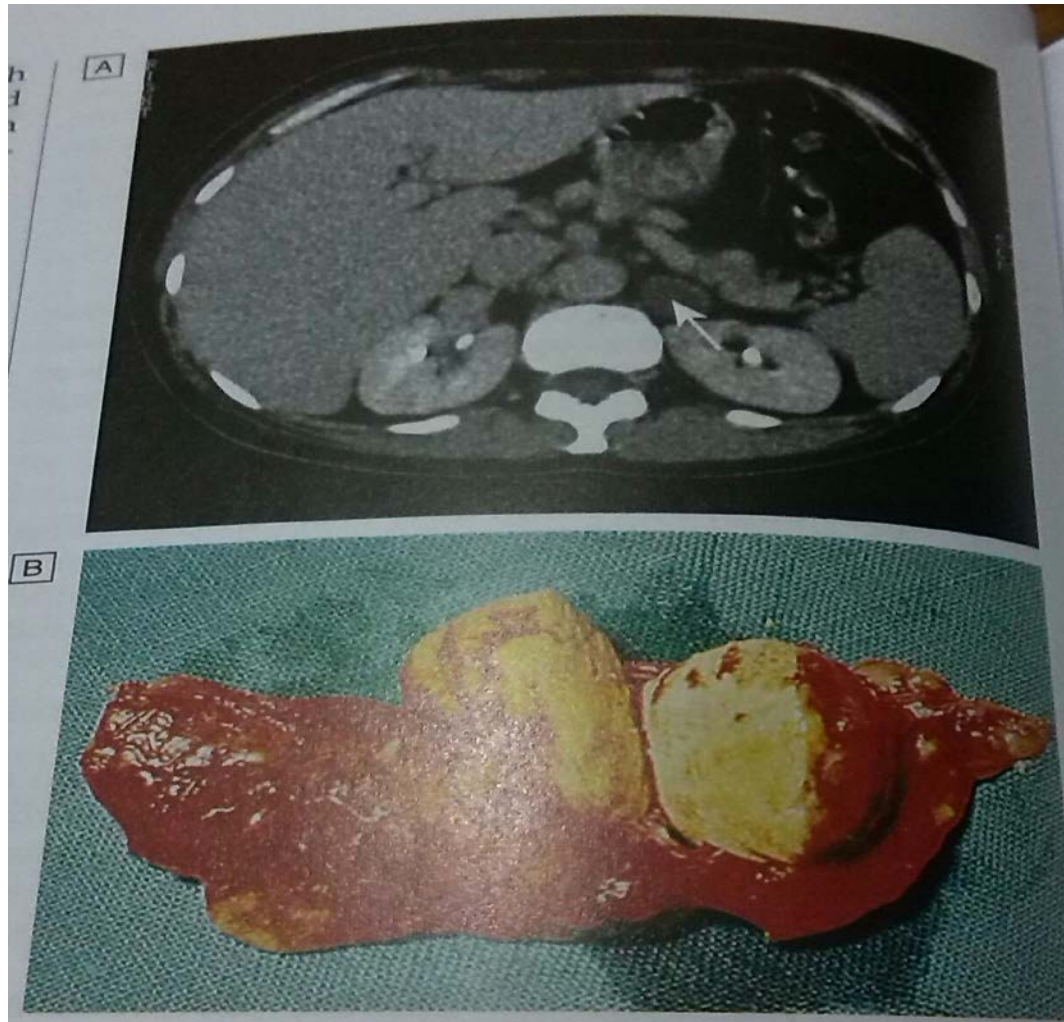


# PHAEOCHROMOCYTOMA



CT scan of abdomen showing large left adrenal phaeochromocytoma. **A** Coronal view. **B** Sagittal view. The normal right adrenal contrasts with the large heterogeneous phaeochromocytoma arising from the left adrenal gland (black arrows).

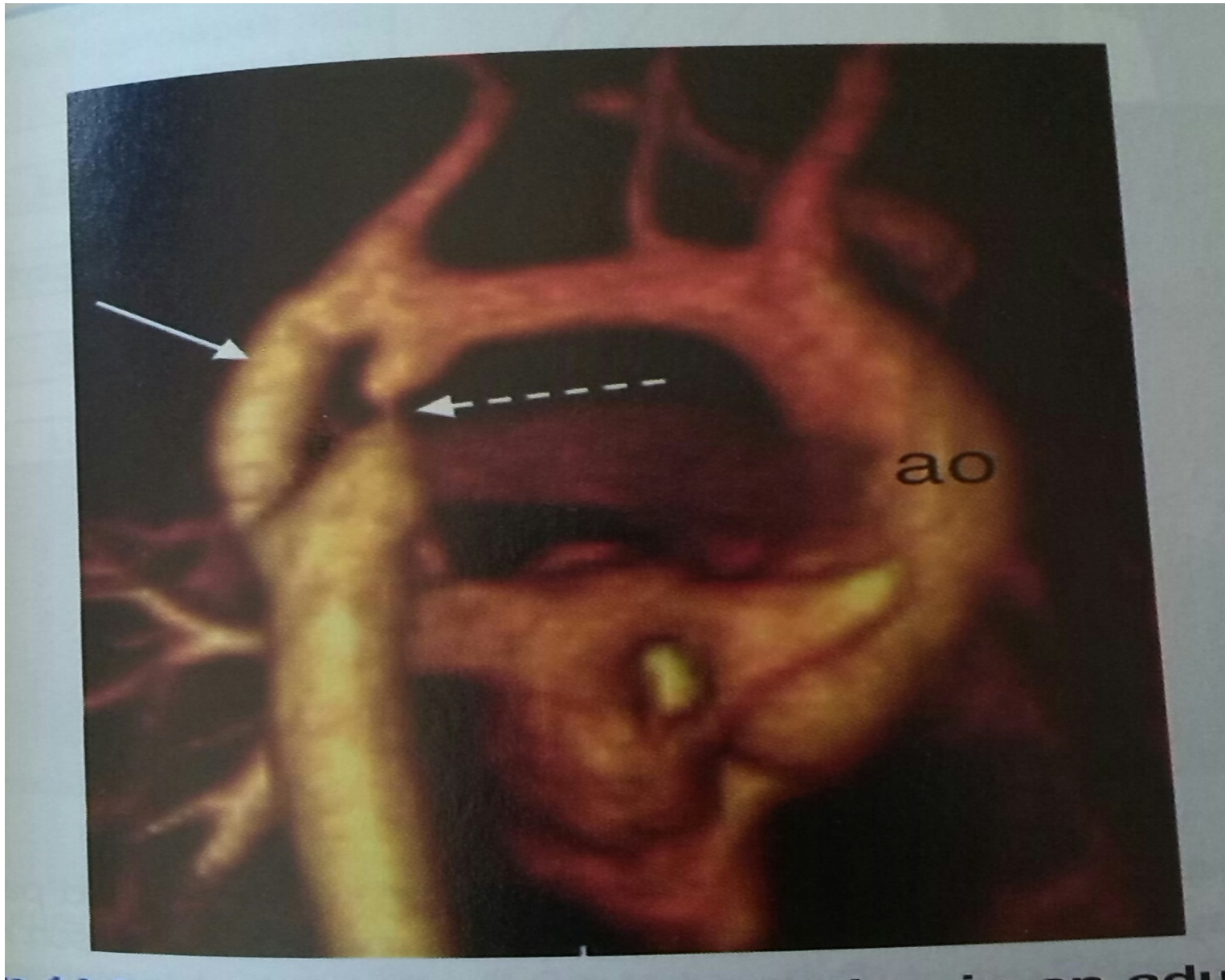
# CONN'S SYNDROME



**20.23 Aldosterone-producing adenoma causing Conn's syndrome.** **A** CT scan of left adrenal adenoma (arrow). **B** The tumour is 'yellow' because of intracellular lipid accumulation.



# COARCTATION OF AORTA





# KIDNEY AND HPN-



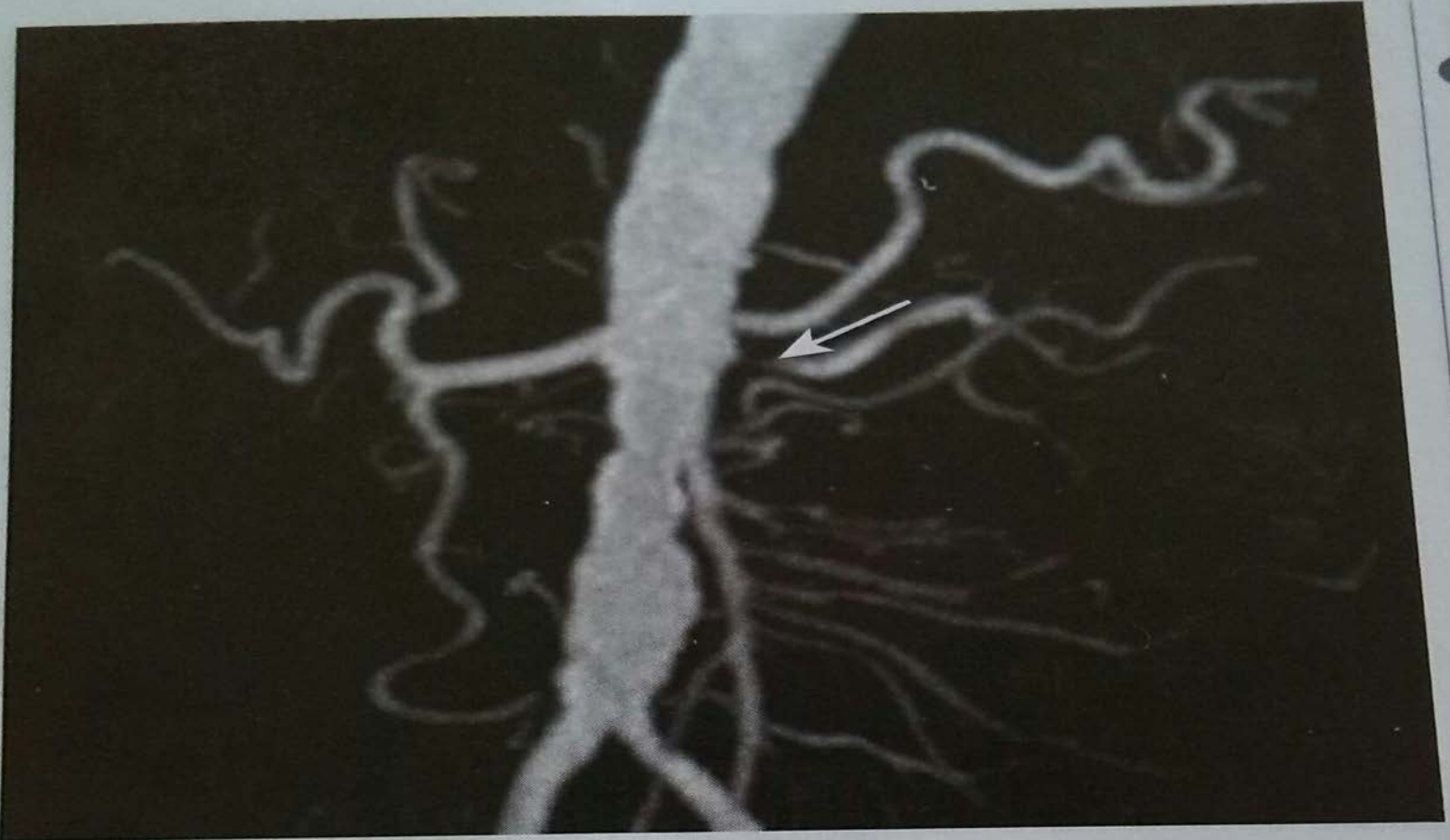
**Figure 12.9** Magnetic resonance angiogram of normal renal arteries.

# RENAL ARTERY-STENOSIS



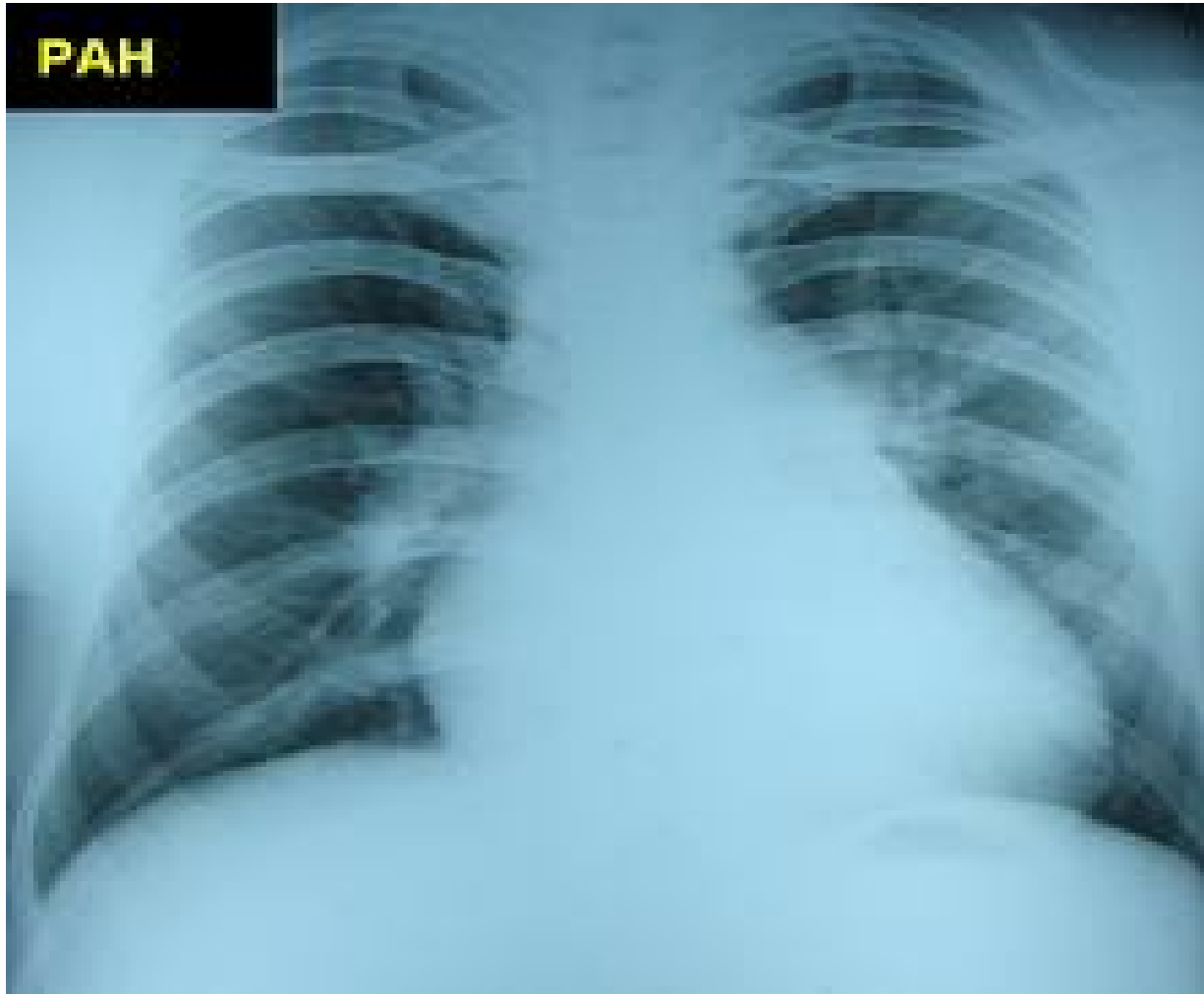
**Figure 14.118** Digital subtraction angiography, showing typical unilateral atheromatous renal artery stenosis with post-stenotic dilatation (arrow).

# RENAL ARTERY-STENOSIS



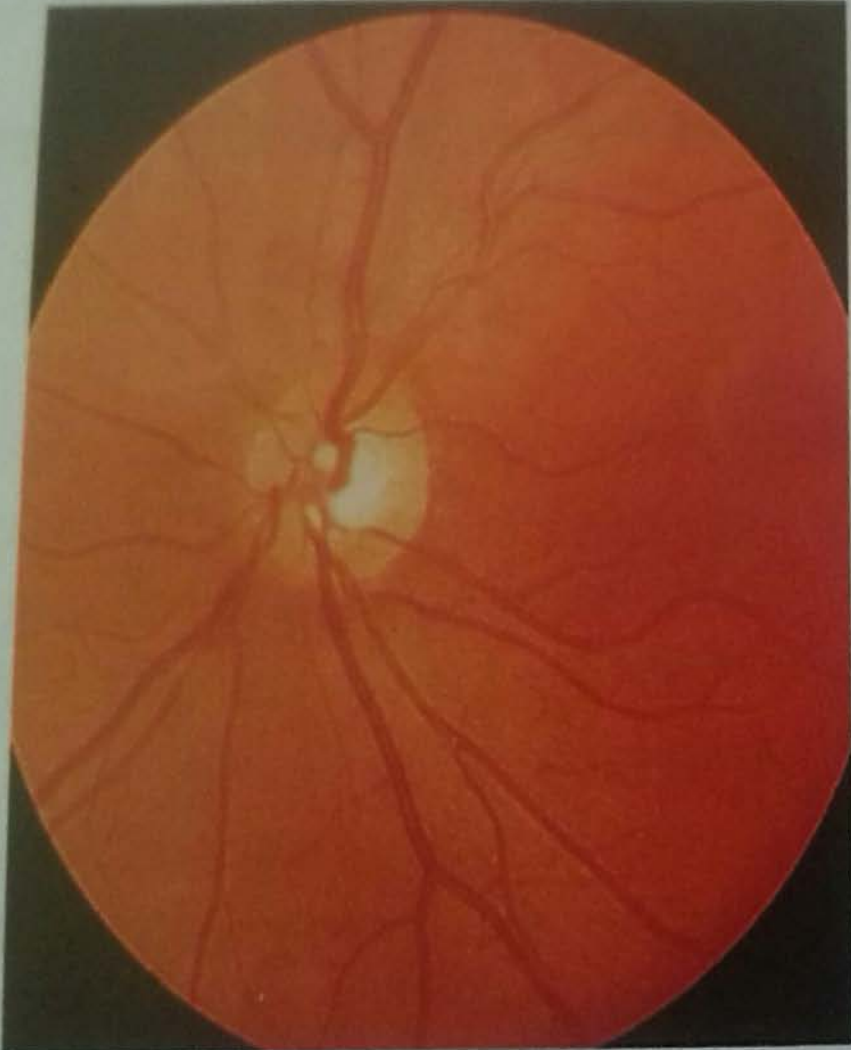
**Fig. 17.23 Renal artery stenosis.** A magnetic resonance angiogram following injection of contrast. The abdominal aorta is severely irregular and atheromatous. The left renal artery is stenosed (arrow).

# LVH-HPN

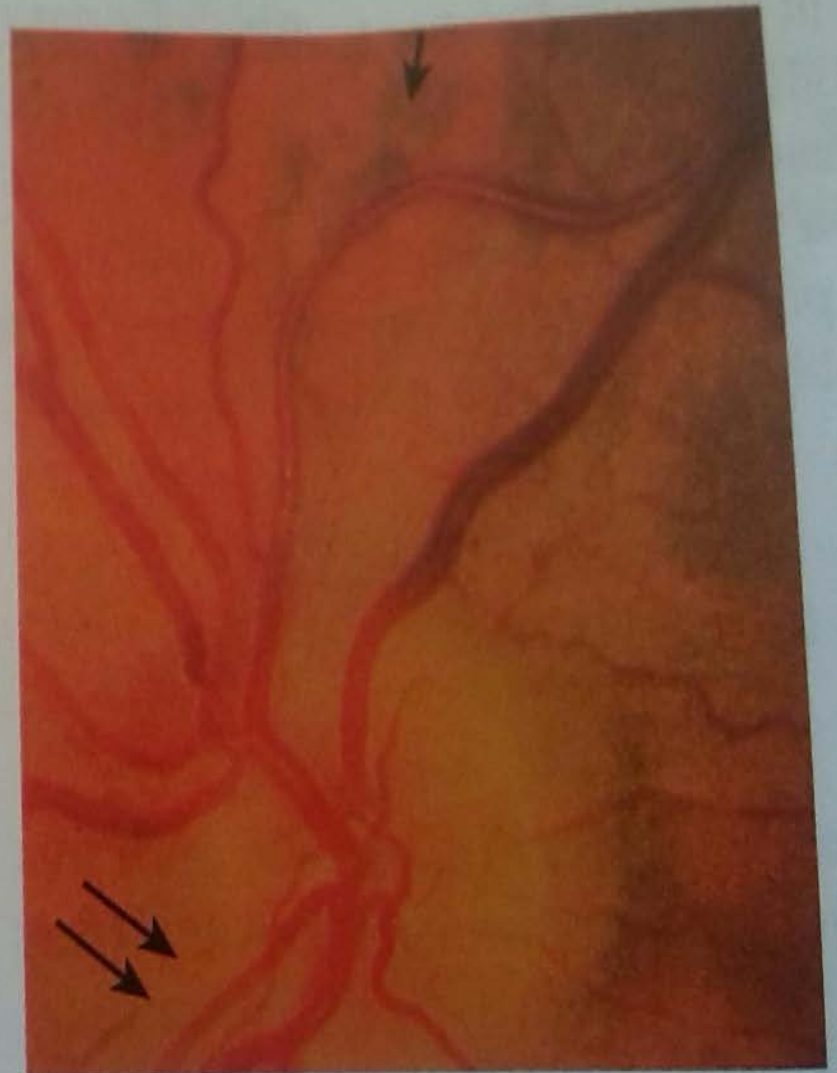




# HPN-RETINOPATHY



A



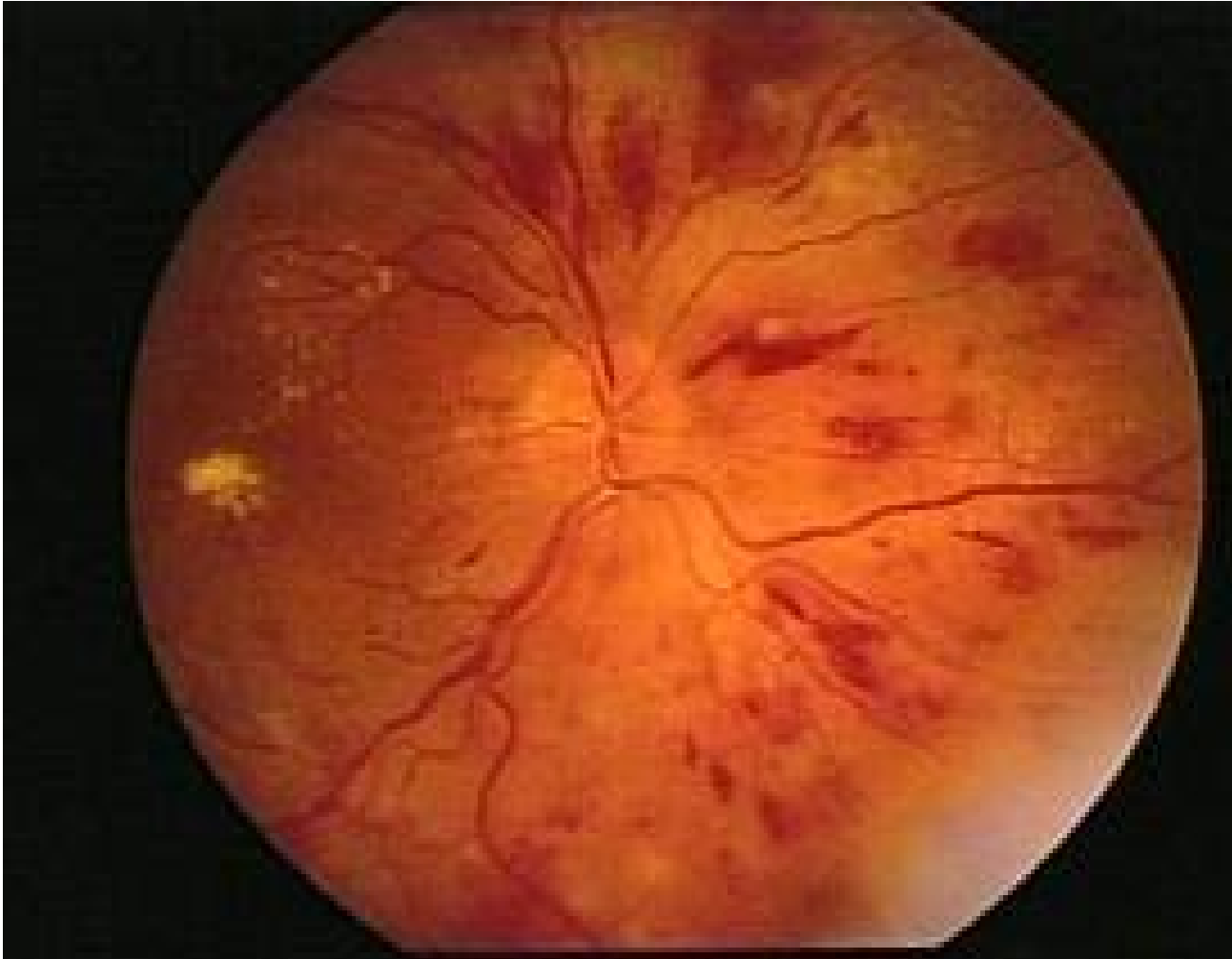
B

# HPN-RETINOPATHY



Figure 14.117 Fundus showing hypertensive changes: Grade 4 retinopathy with papilloedema, haemorrhages and exudates.

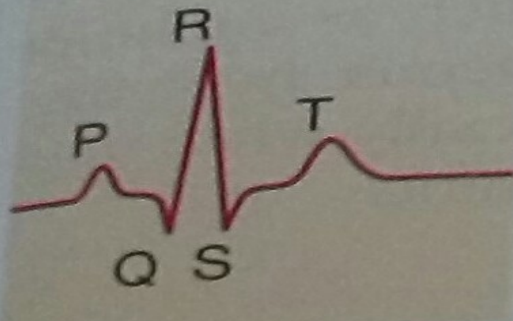
# HPN-RETINOPATHY PAPILLOEDEMA



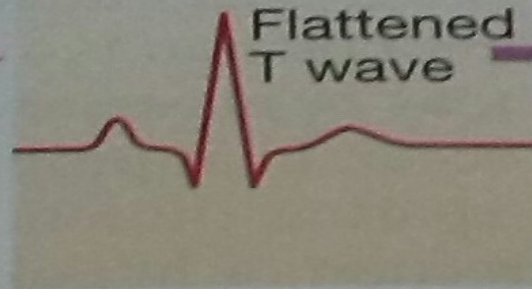
# HYPERKALAEMIA-

## HYPOKALAEMIA

Normal ECG



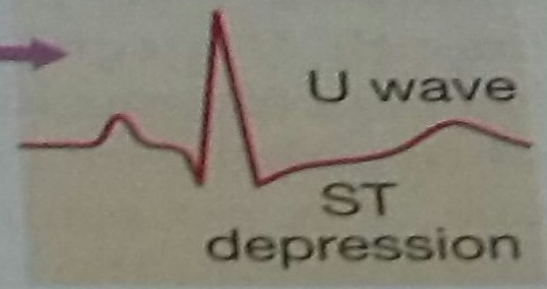
Flattened T wave



Moderate

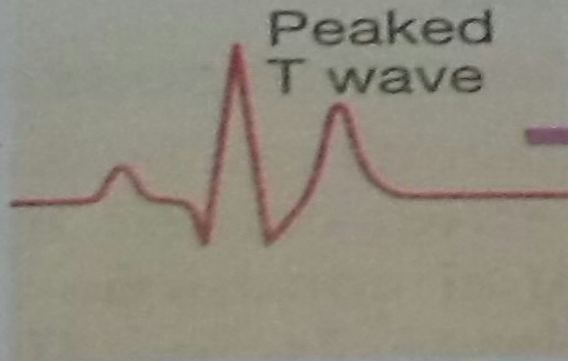
U wave

ST depression



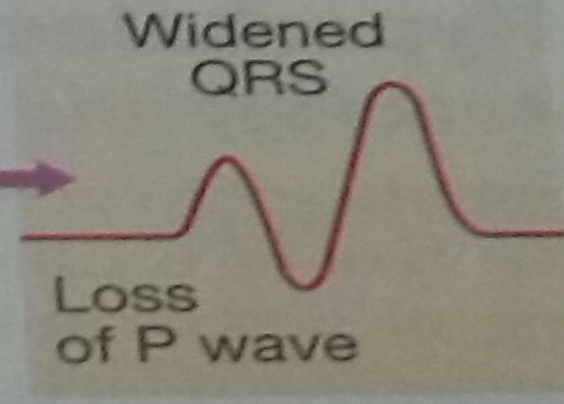
Severe

Peaked T wave



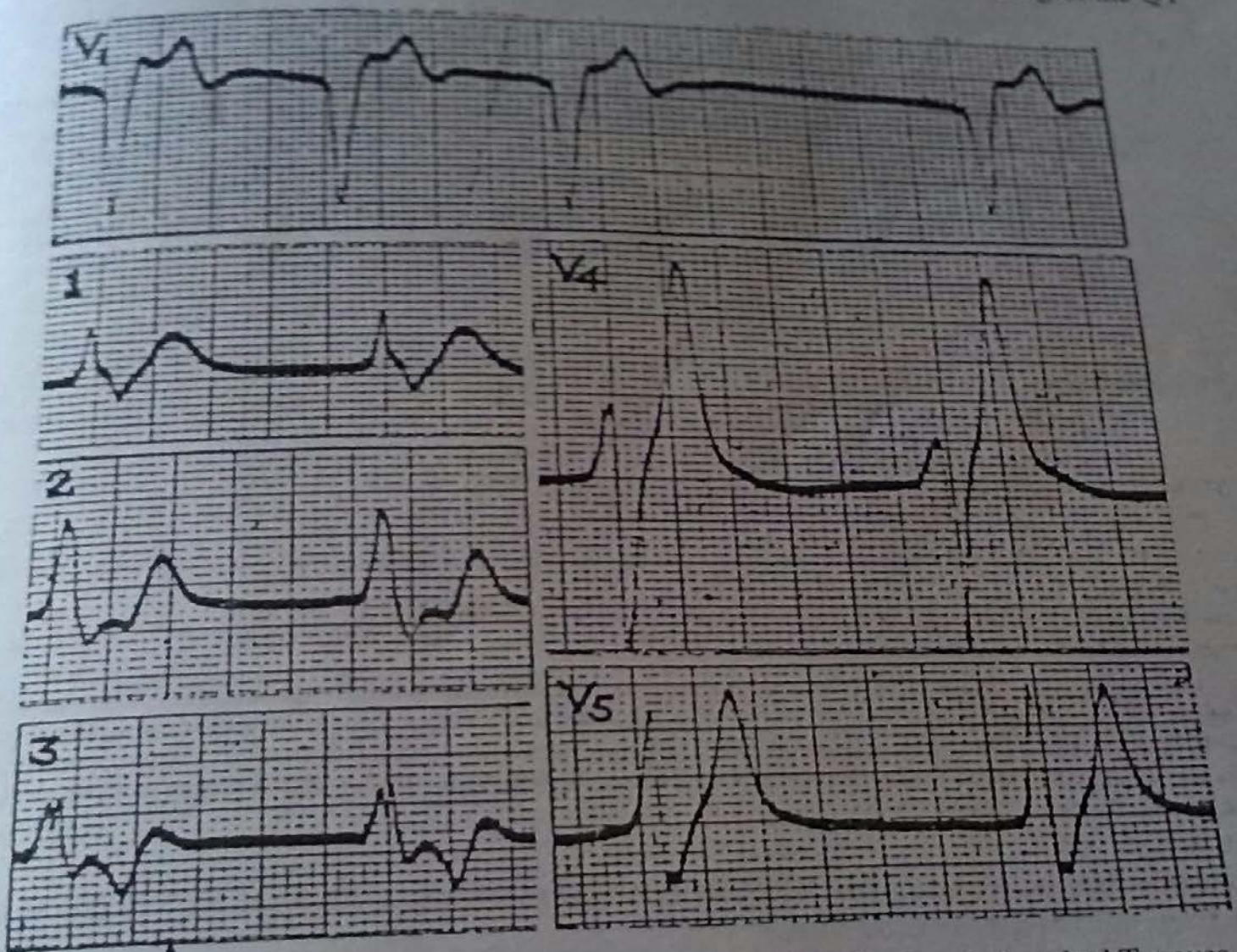
Widened QRS

Loss of P wave



## HYPERKALAEMIA





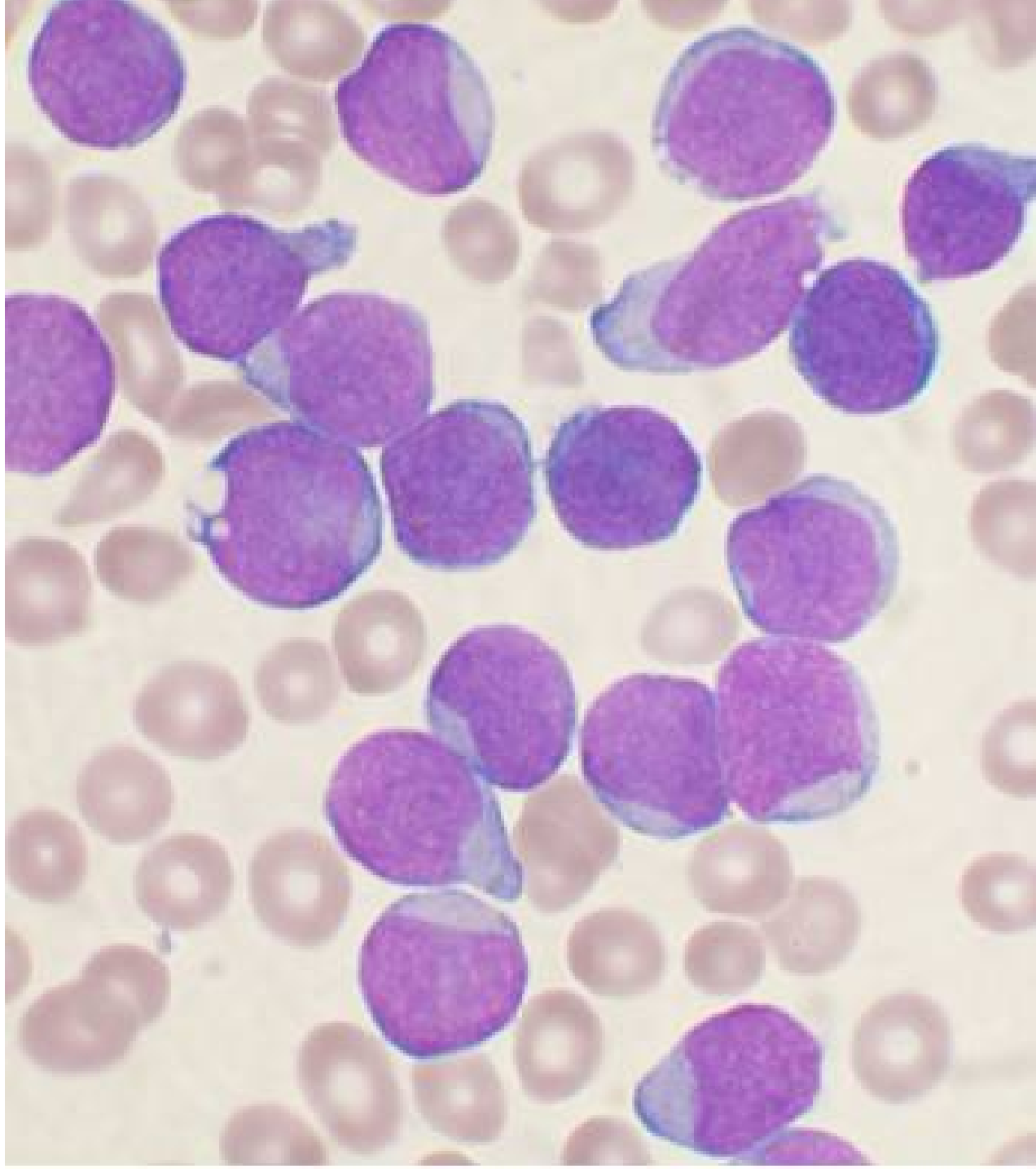
Hyperkalemia. This ECG shows evidence of advanced potassium intoxication: tall peaked T waves, absent P waves, widened QRS complexes, and irregular rhythm. The patient's serum K<sup>+</sup> level was 8.1 mEq/L. (From Marriott HJL: Practical Electrocardiography, 9th ed. Baltimore, Williams & Wilkins, 1994, p 183; with permission.)

# Leukemia

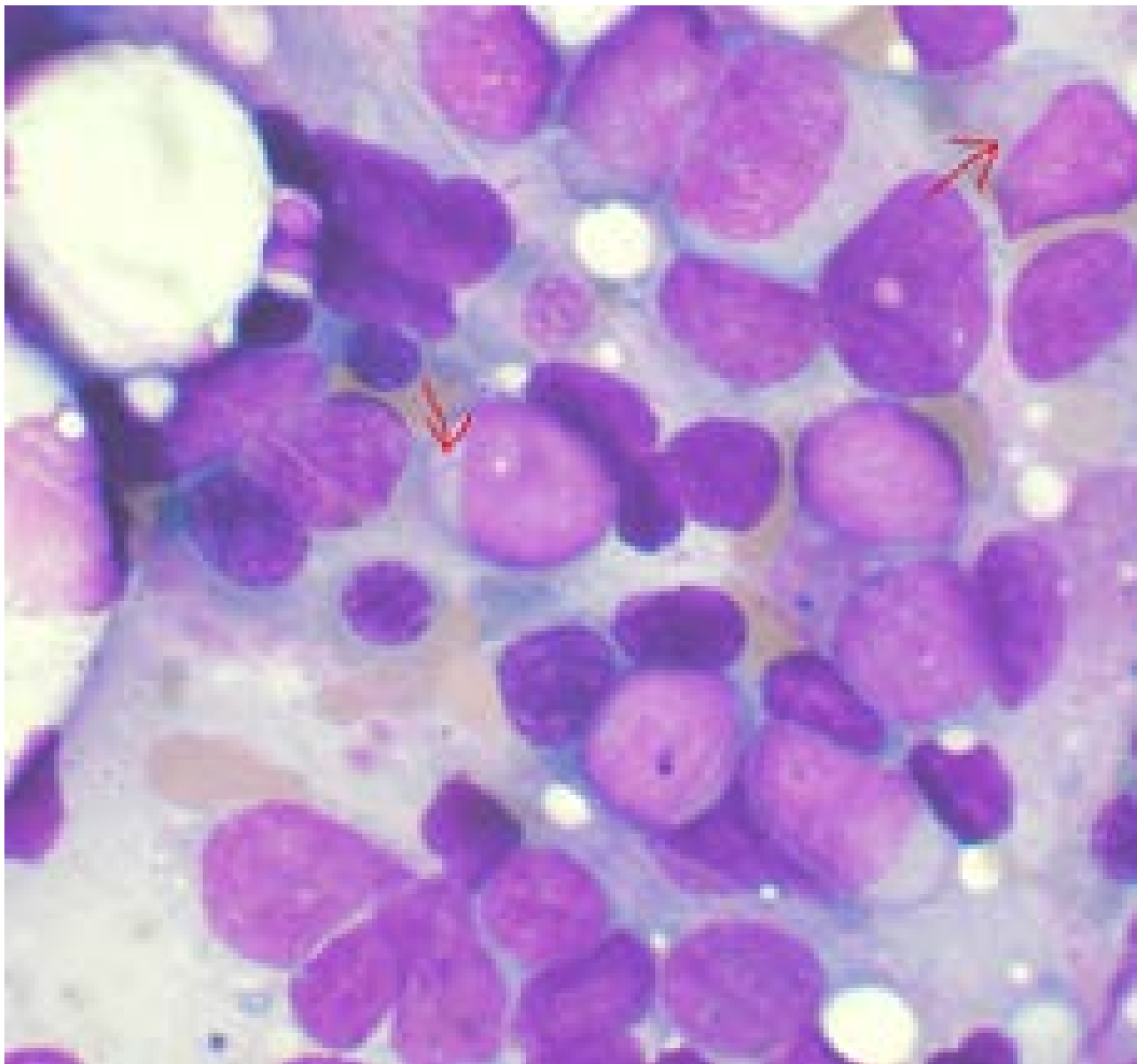
Diffusely swollen gums due to infiltration by leukemic cells in a person with acute myelomonocytic leukemia



ALL --- Bone Marrow

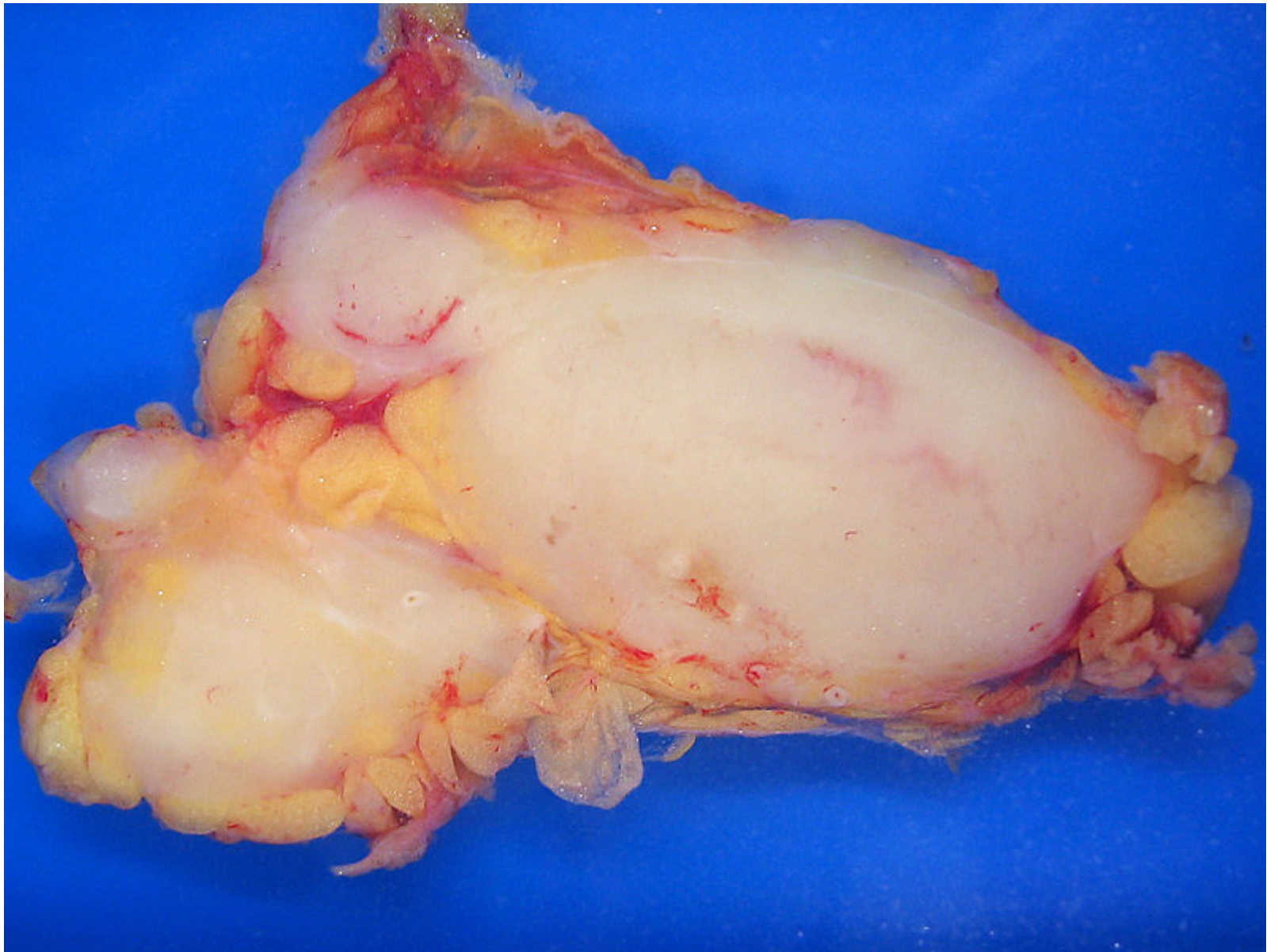




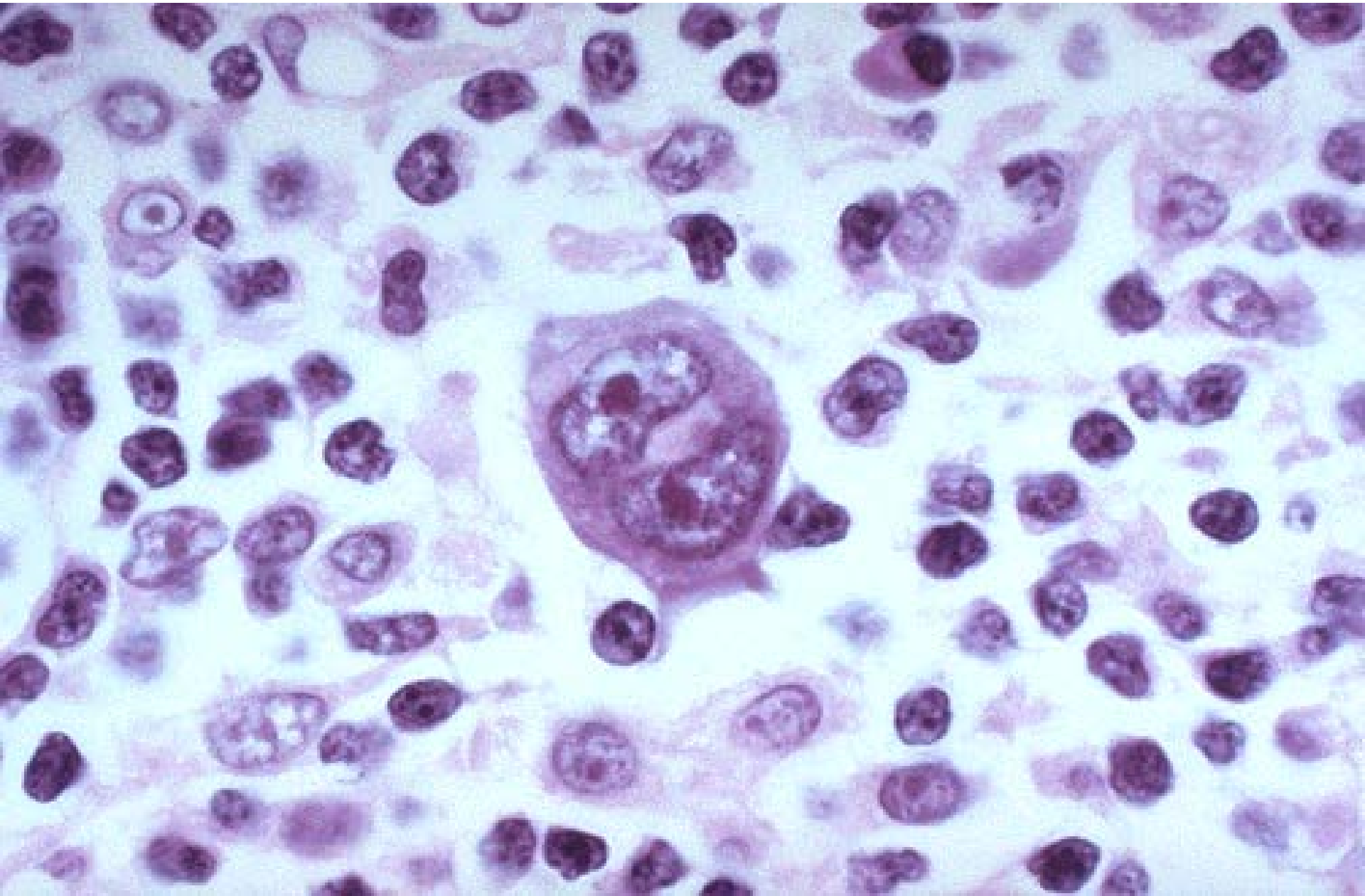


AML Bone Marrow arrows indicates Auer Rods . Elongated needles seen in the cytoplasm of Leukemic blasts.

# Lymphoma

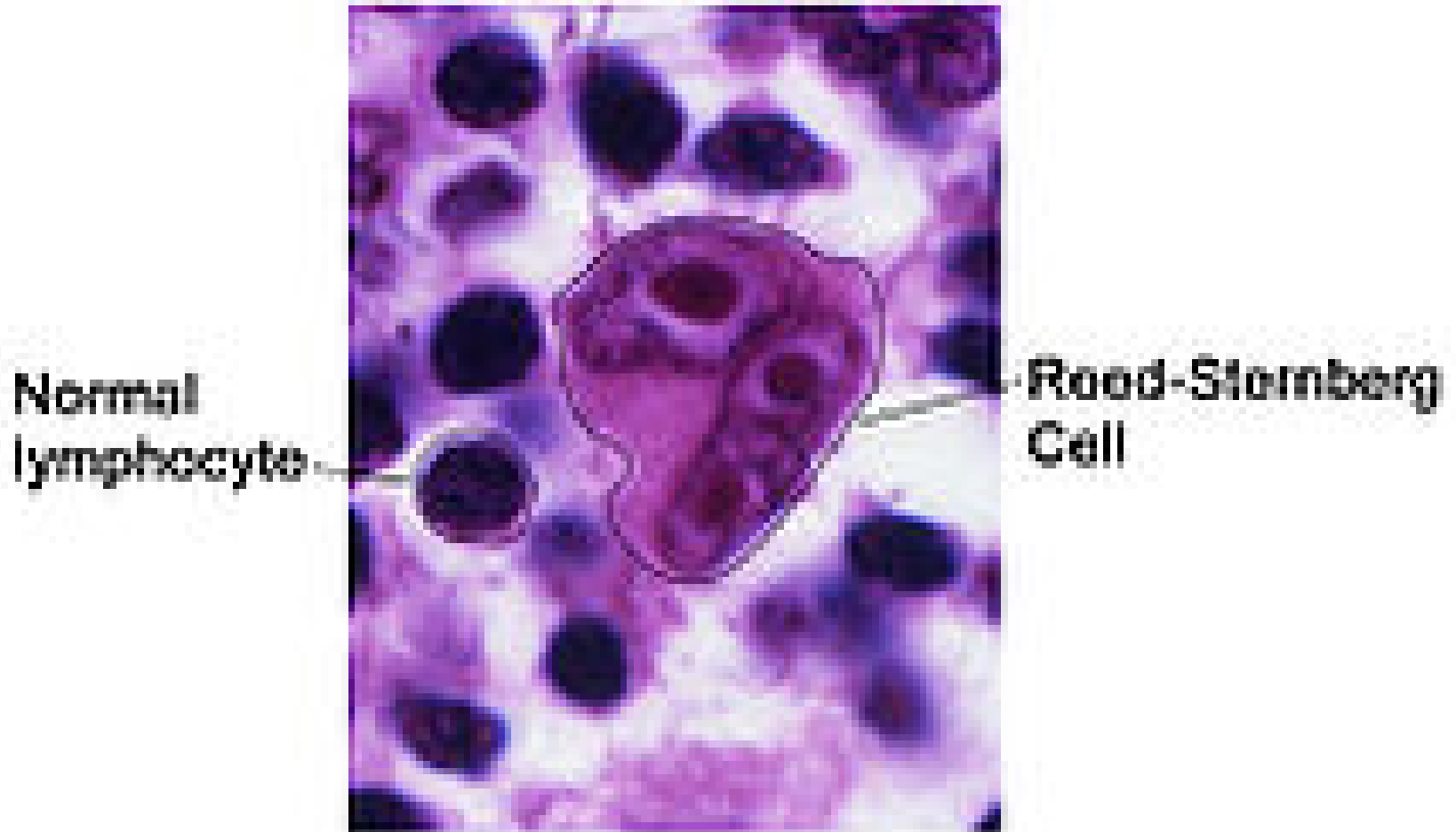


# Reed-Sternberg cell





# Reed-Sternberg Cell



# NEPHROTIC SYNDROME



# NEPHROTIC SY.



# OEDEMA

Subcutaneous pitting edema



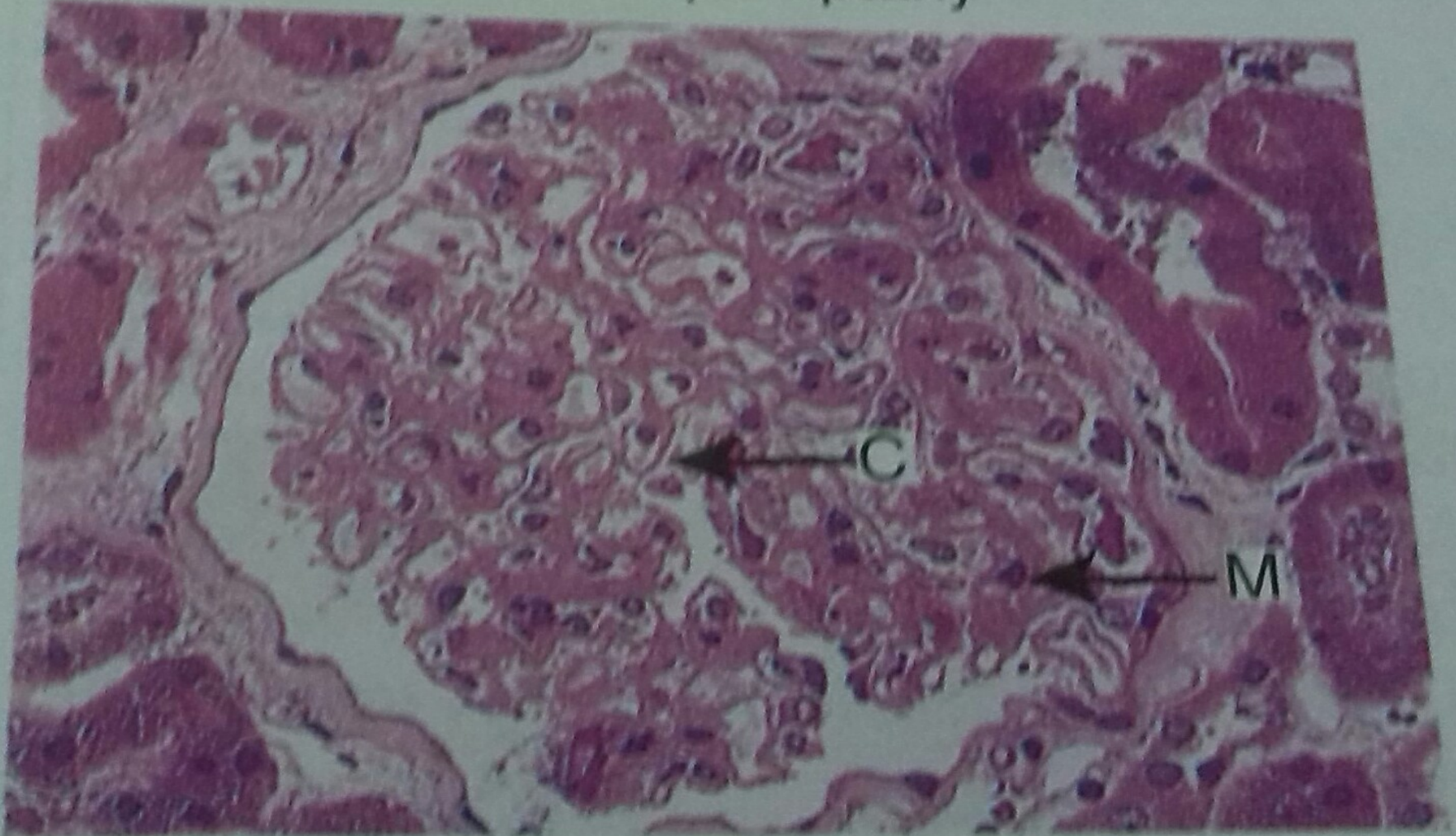
Kidney Cares Community  
[www.kidney-cares.org](http://www.kidney-cares.org)



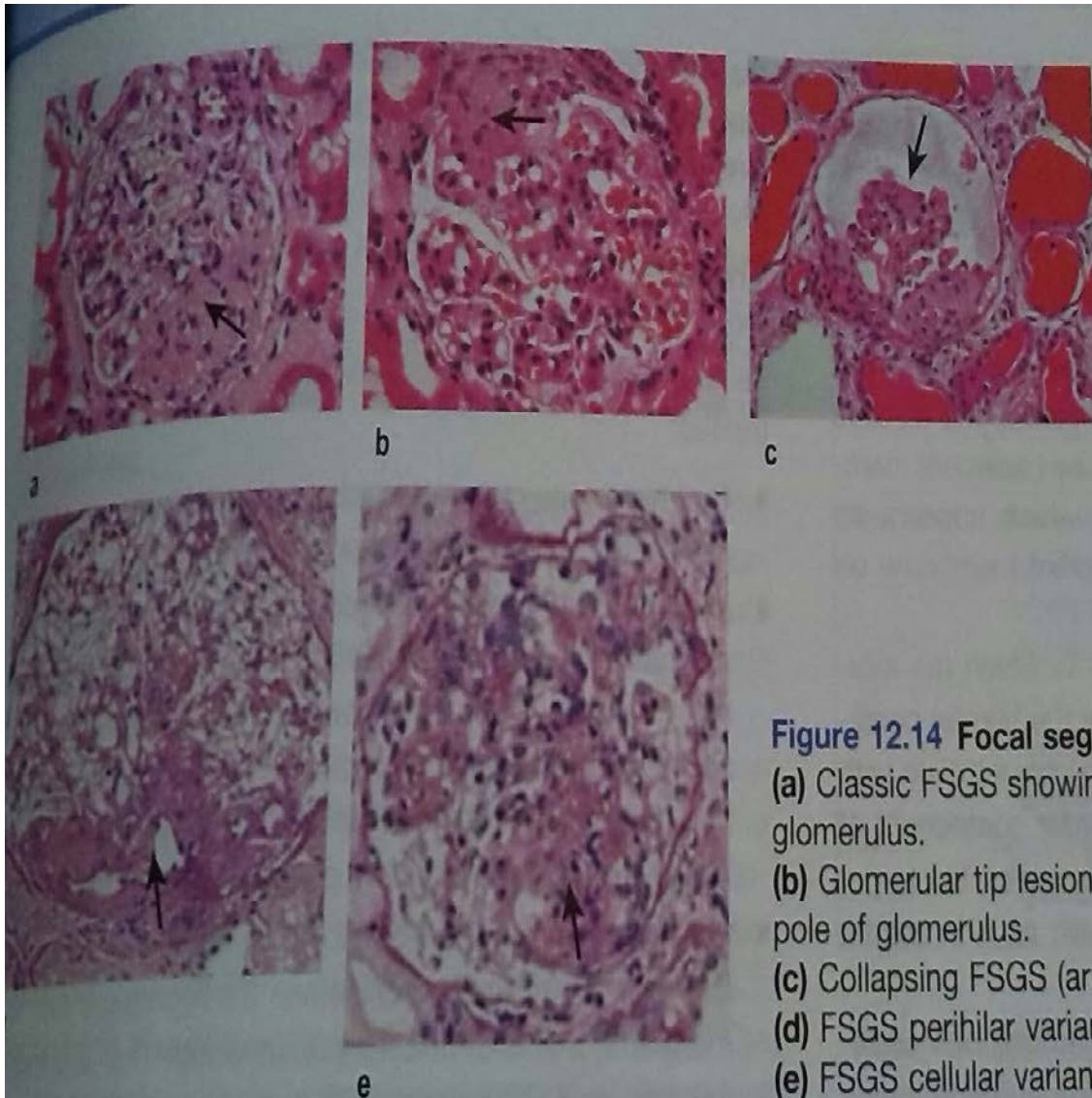


# MEMBRANOUS-NEPHROPATHY

[D] Membranous nephropathy



# Histopathology-



**Figure 12.14 Focal segmental glomerulosclerosis (FSGS).**

**(a)** Classic FSGS showing sclerotic segments (arrow) in glomerulus.

**(b)** Glomerular tip lesions showing segmental sclerosis (arrow) at pole of glomerulus.

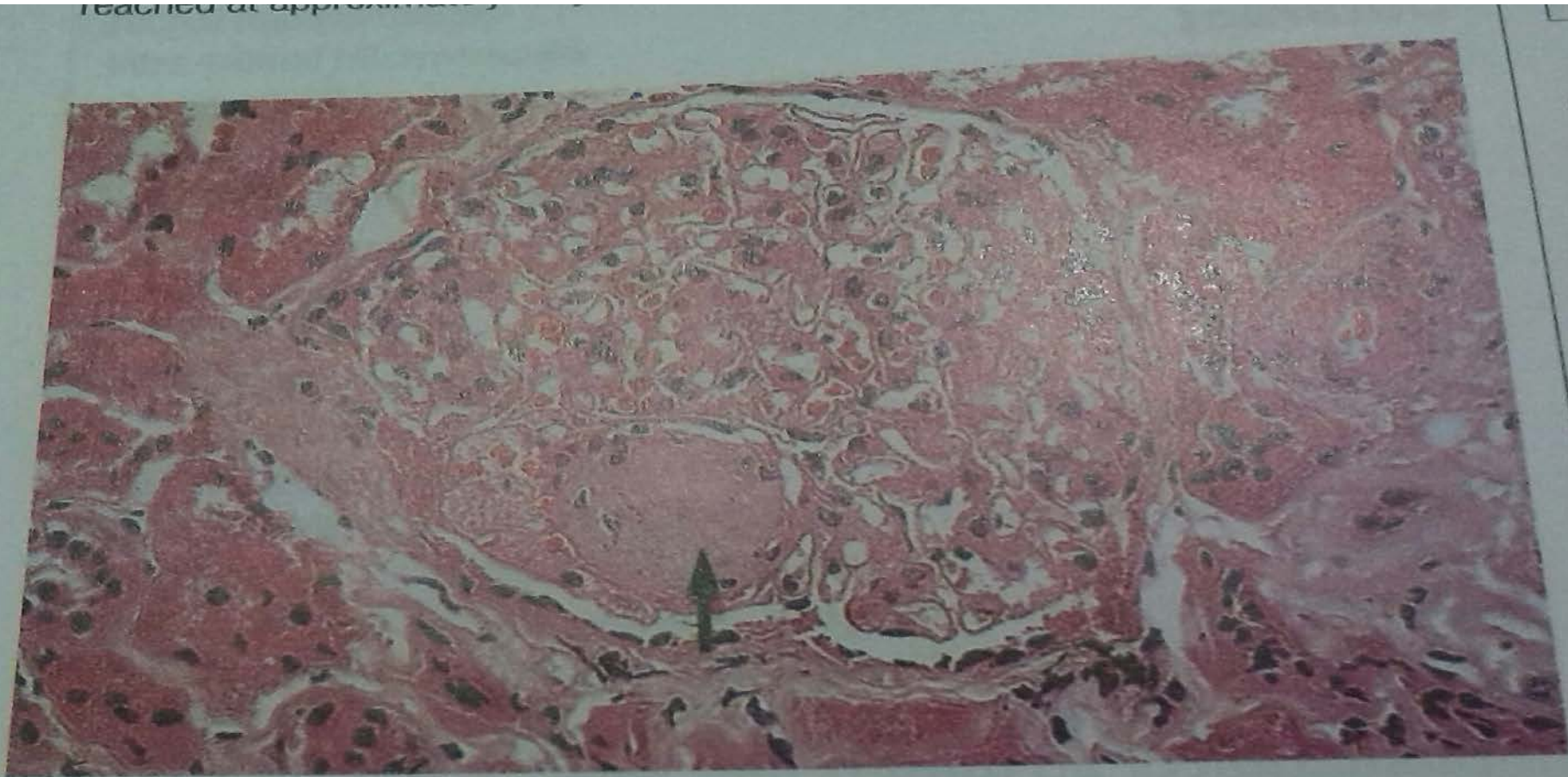
**(c)** Collapsing FSGS (arrow).

**(d)** FSGS perihilar variant.

**(e)** FSGS cellular variant.

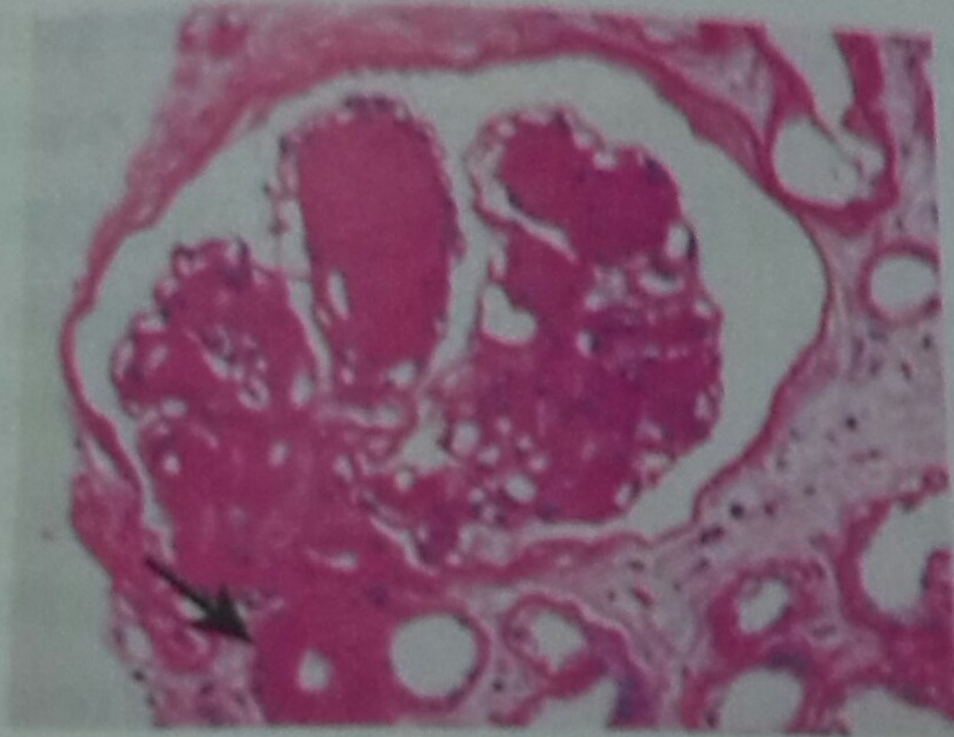


# DIABETIC-NEPHROPATHY



**Fig. 21.18** Nodular diabetic glomerulosclerosis. There is thickening of basement membranes and mesangial expansion, and a Kimmelstiel–Wilson nodule (arrow).

# DIABETIC-NEPHROPATHY



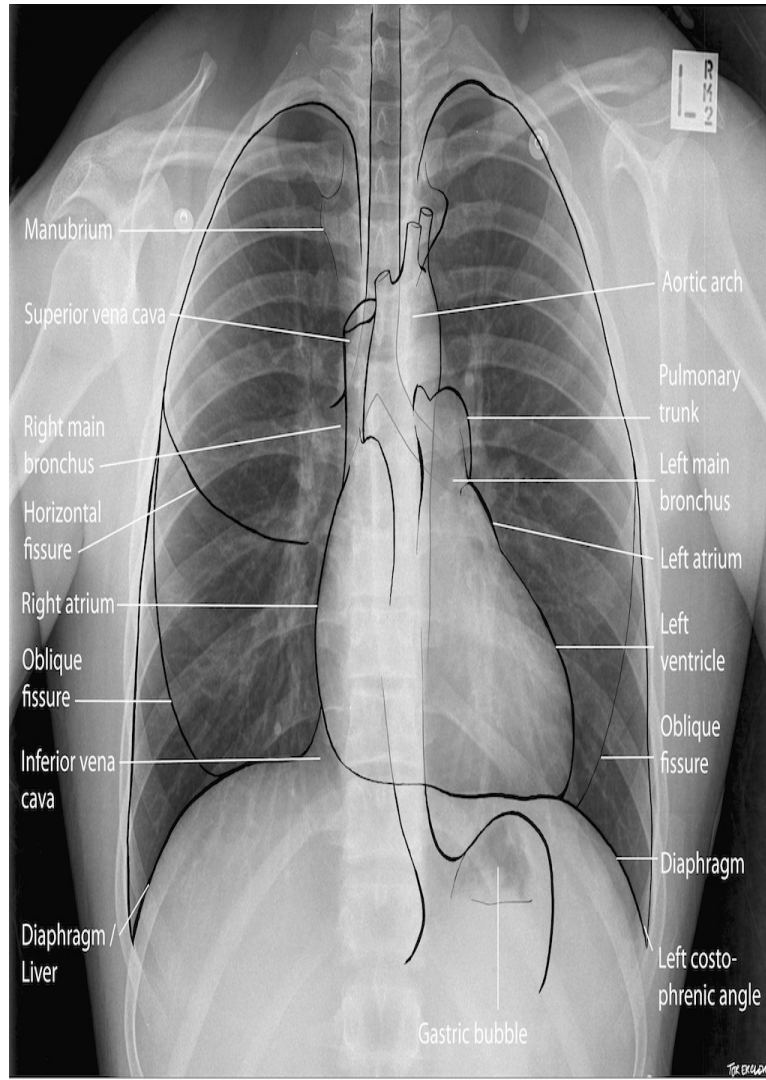
**Figure 12.17** Diabetes mellitus. Advanced diabetic glomerulopathy and arteriolar sclerosis (arrow).



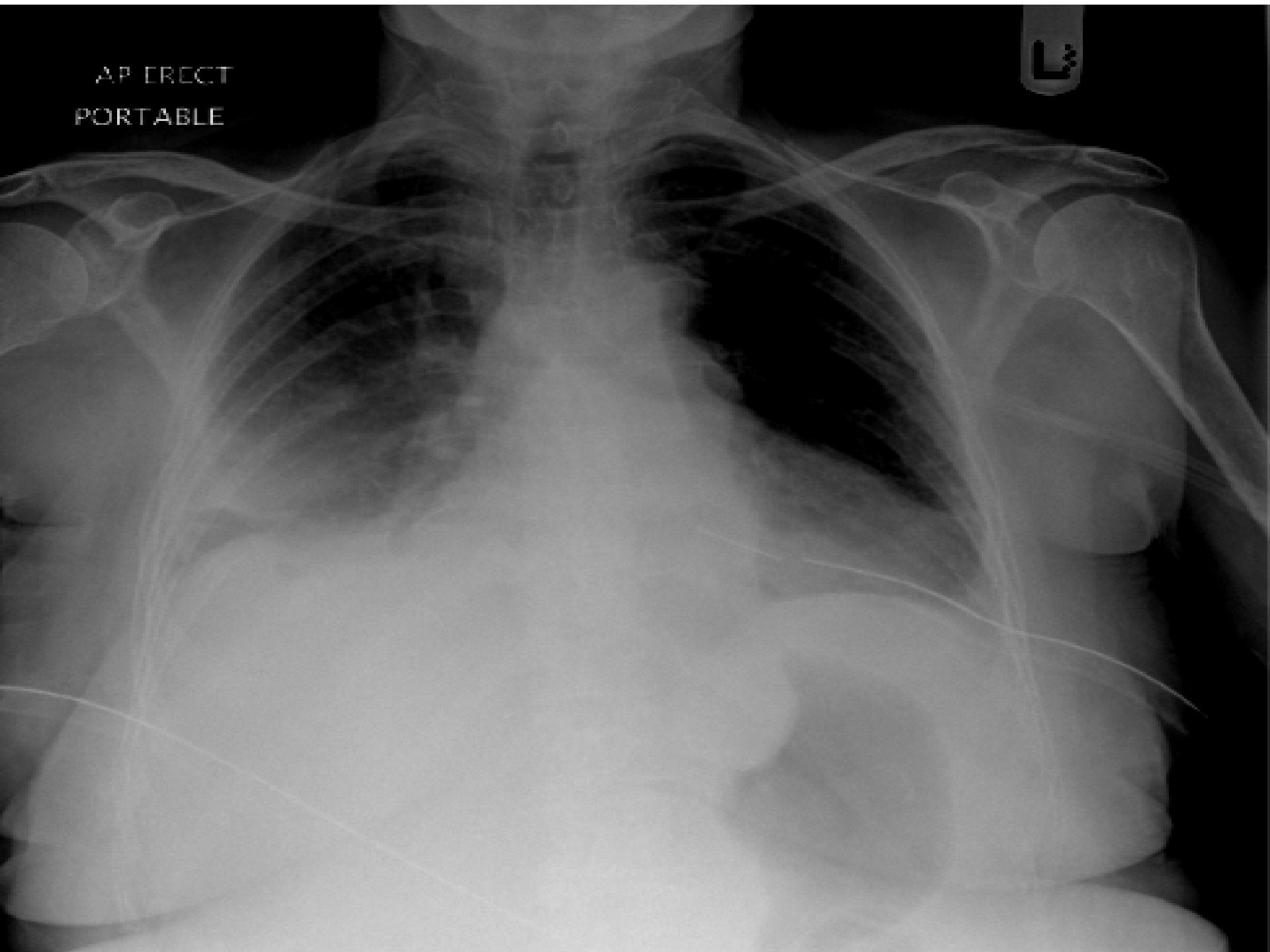
# Pleural effusion

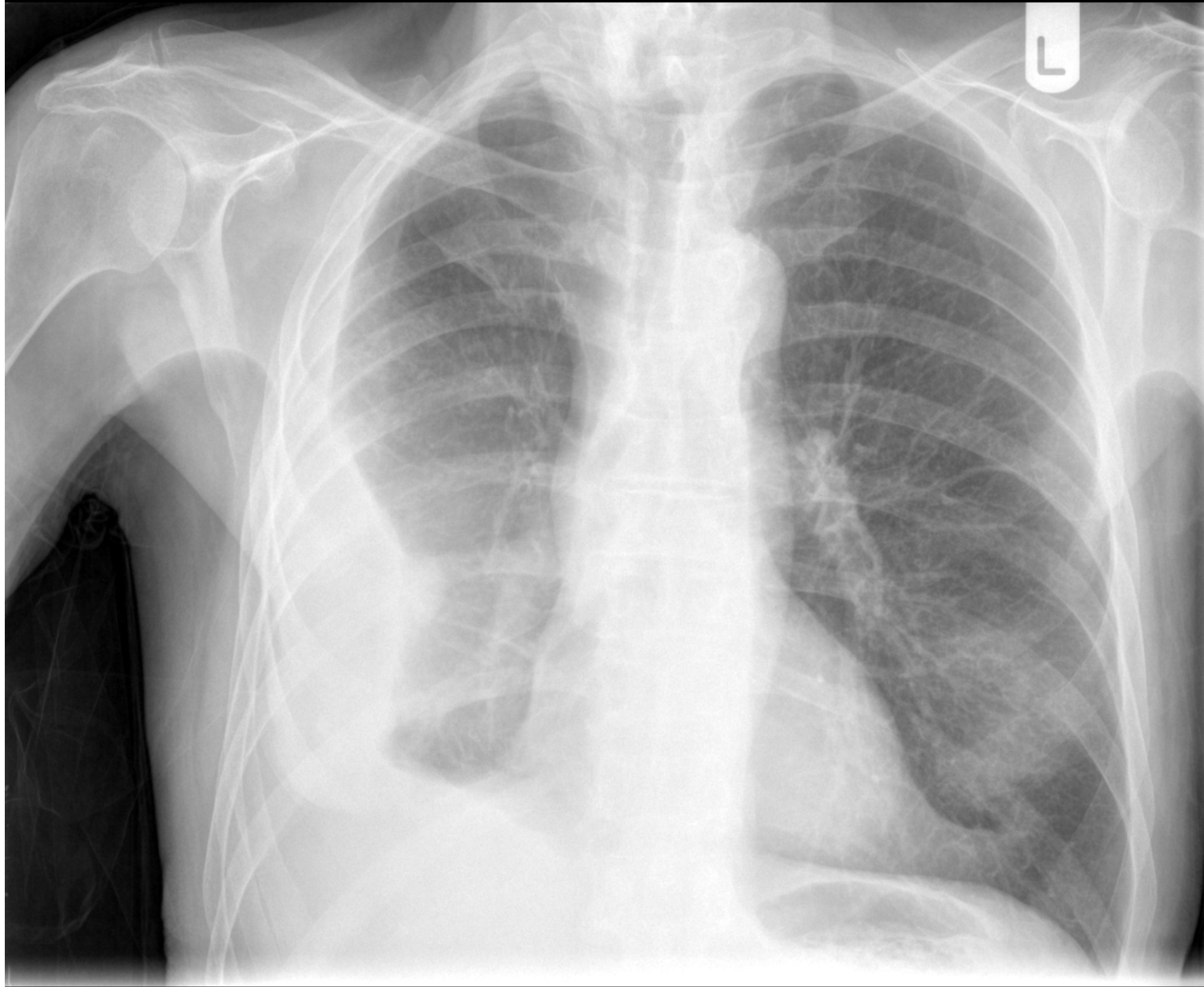
# Pleural effusion CRG

# Normal CRG



AP ERECT  
PORTABLE







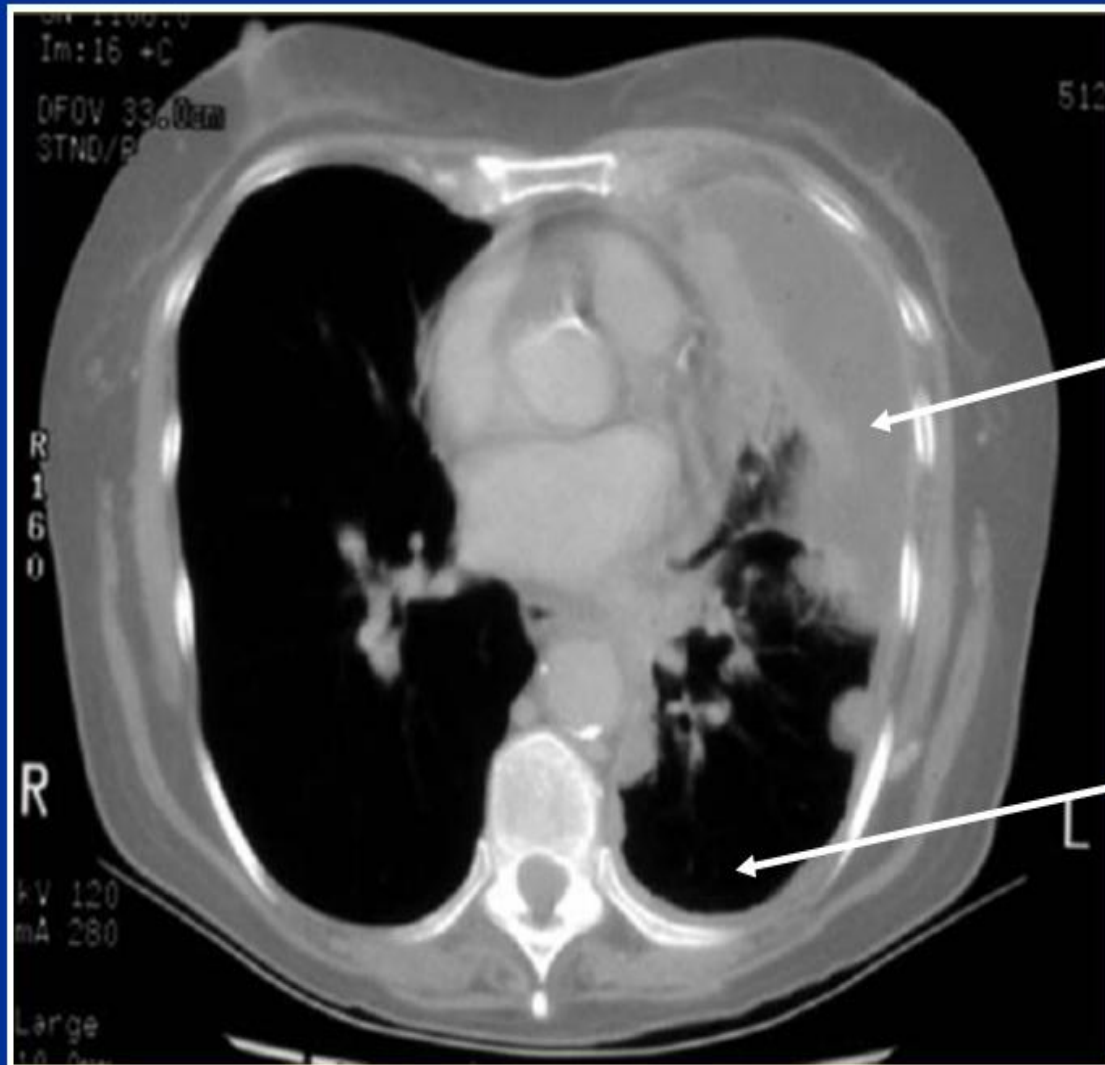
## Normal Right Upper Quadrant / Pleural Exam



Mirror Artifact Reproduces Liver Above Diaphragm



# CT Image with Loculated Pleural Effusion on the Left



Fluid is here, but if not loculated (stuck in a pocket) would be here



...ances of pleural effusion.  
...ed pleural effusion com-  
...rs with pulmonary infarc-  
...malignancy. Rarely are  
... effusions heavily blood-

31



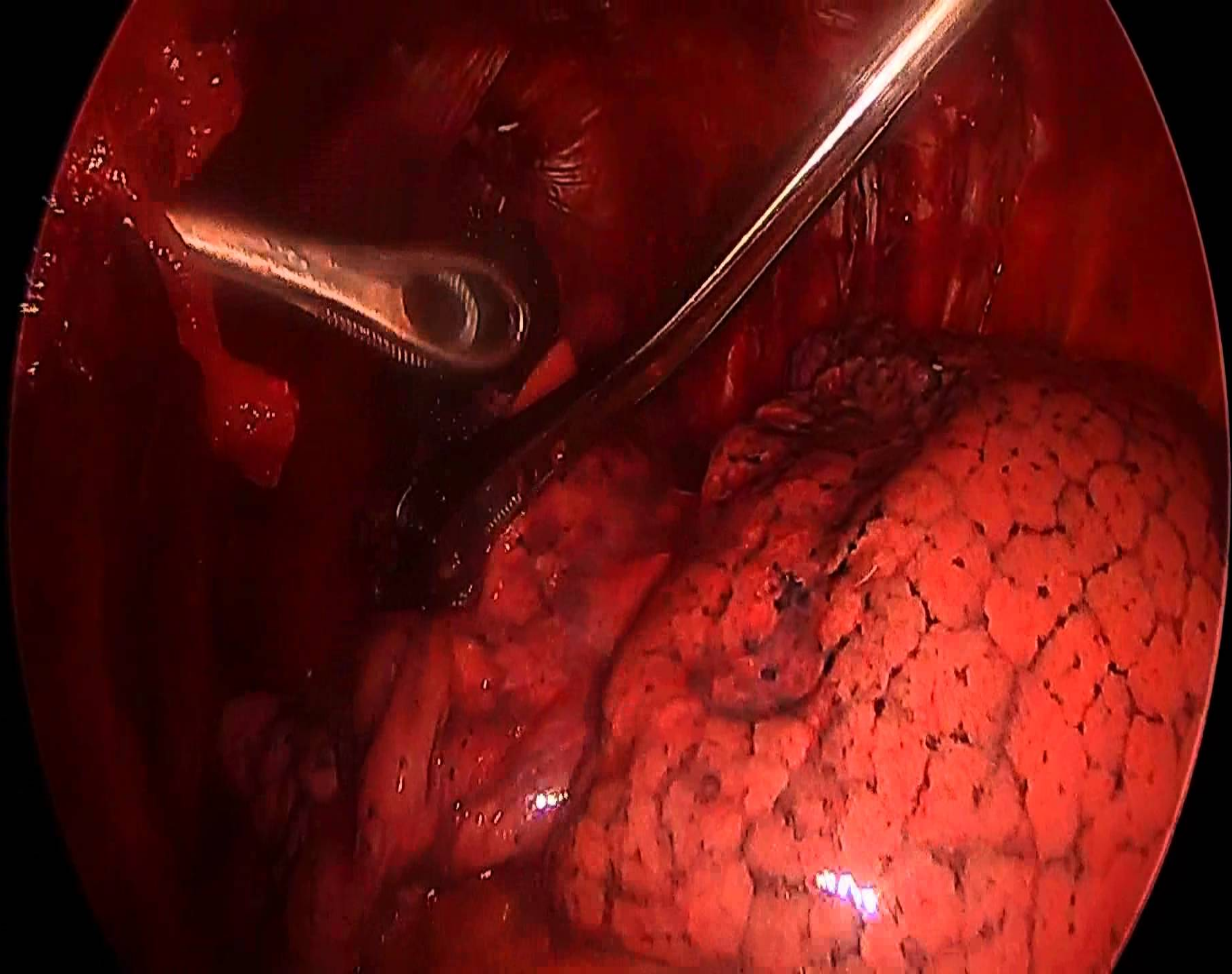
**31 Yellow exudate pleural effusion.**  
The exudates have a high protein  
content ( $>30$  g/litre) and a high  
specific gravity ( $>1.015$ ). The appear-  
ance is similar to plasma and is caused

32



**32 Clear transudated pleural effusions.** Transudates have a low protein  
content ( $<30$  g/litre) and a low  
specific gravity ( $<1.015$ ).







# Large bore

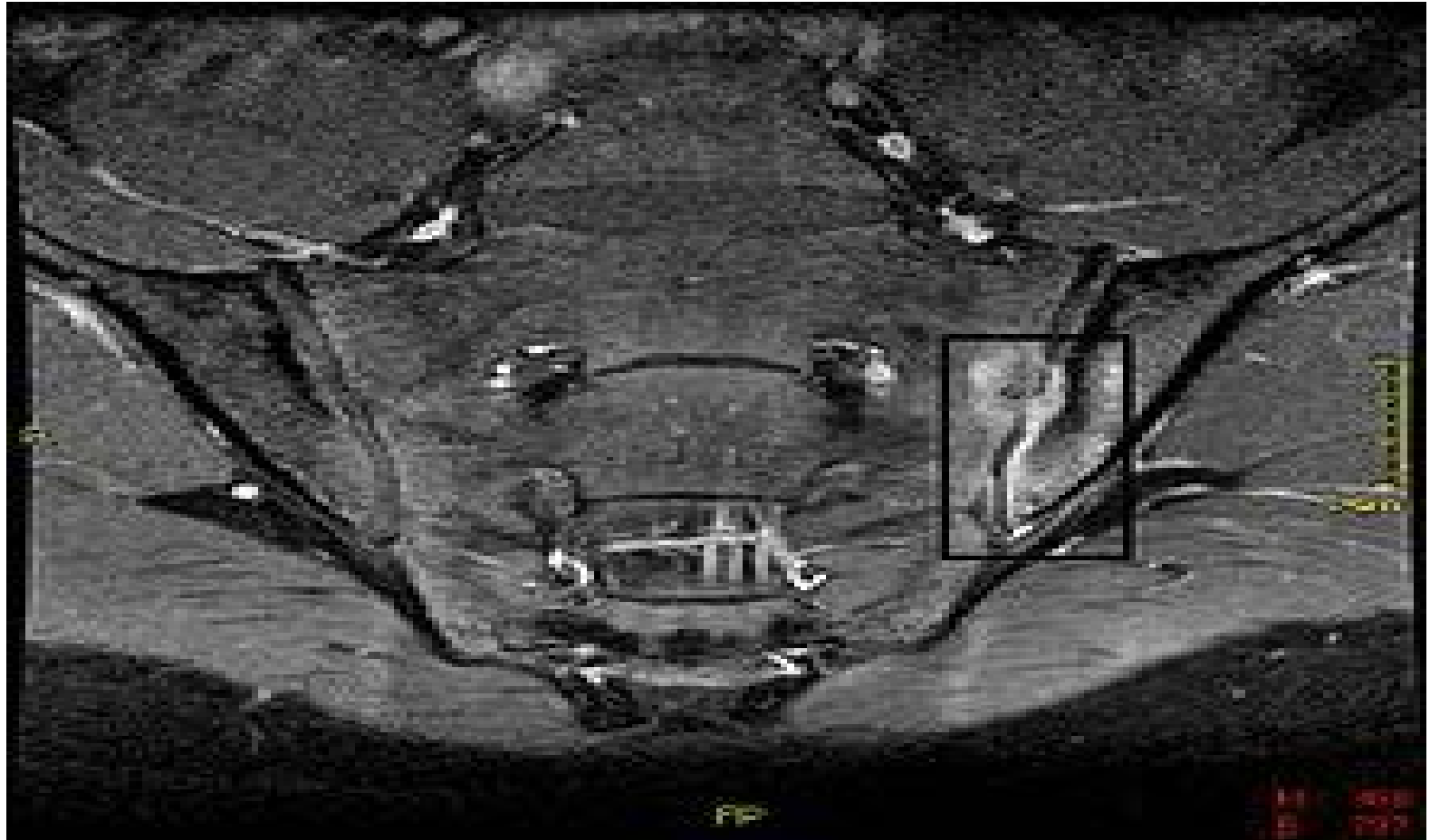


Remember  
suture!

# Lateral lumbar spine X-ray demonstrating ankylosing spondylitis



# MRI showing sacroiliitis in a patient with ankylosing spondylitis



X-ray showing bamboo spine in a patient with ankylosing spondylitis.





# CT scan showing Bamboo spine in ankylosing spondylitis



# Reactive Arthritis

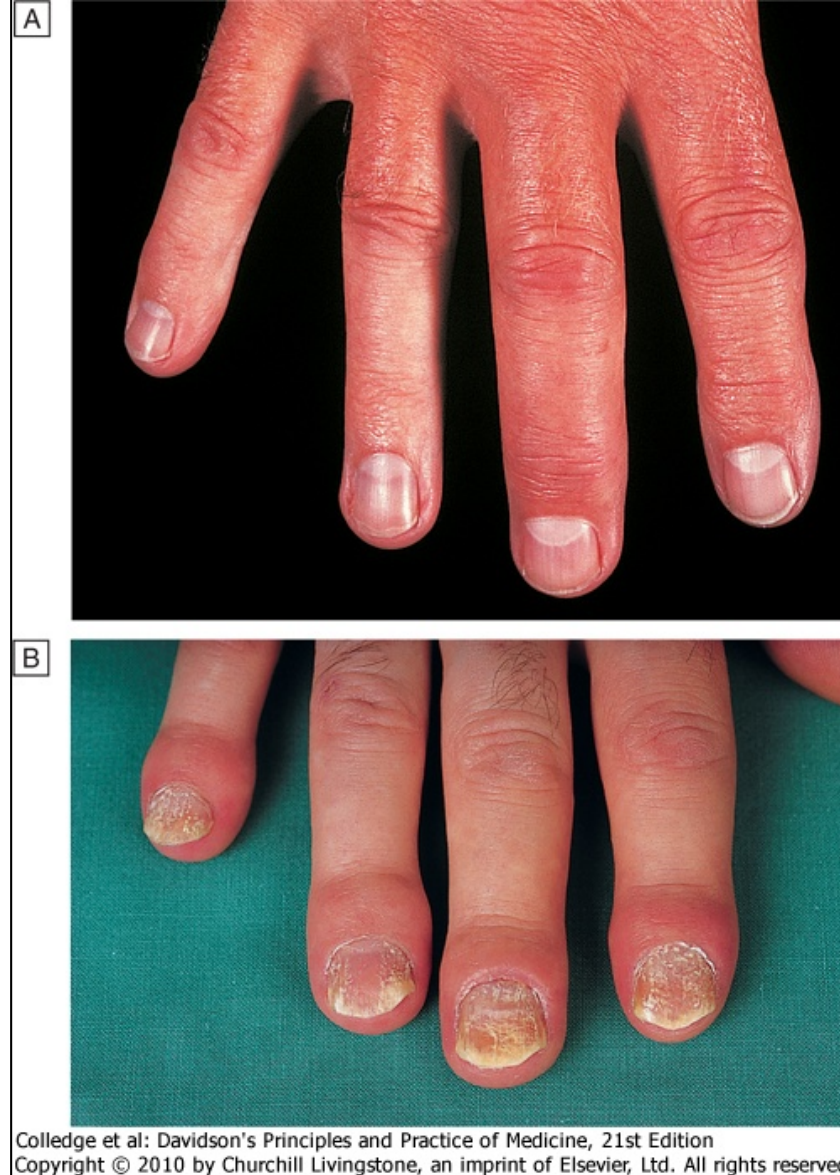


# Reactive arthritis (heel spurs)









Colledge et al: Davidson's Principles and Practice of Medicine, 21st Edition  
Copyright © 2010 by Churchill Livingstone, an imprint of Elsevier, Ltd. All rights reserved.

### Psoriatic arthropathy.

A. 'Sausage' middle finger of a patient with psoriatic arthritis.

B. B. Typical distal interphalangeal joint pattern with accompanying nail dystrophy (pitting and onycholysis).



**Hand showing psoriatic arthritis mutilans.**  
All the fingers are shortened and the joints unstable, owing  
to underlying osteolysis.

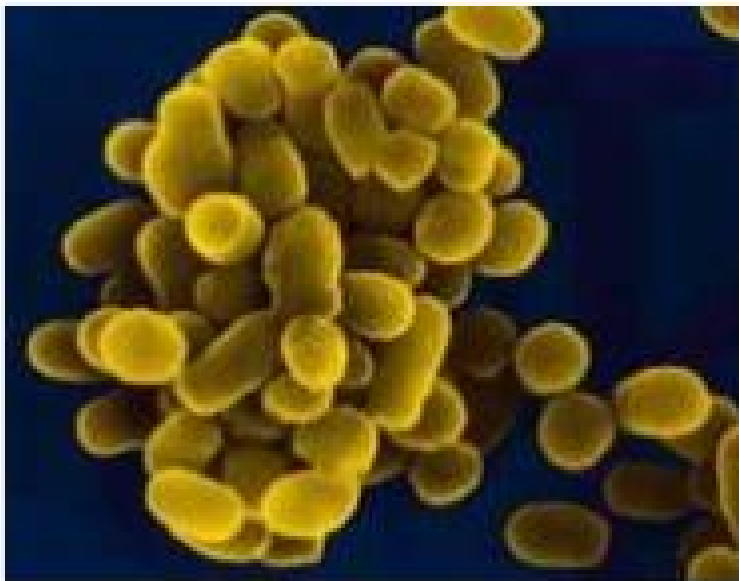


### **X-ray of psoriatic arthritis.**

There is osteolysis of the metatarsal heads and central erosion of the proximal phalanges to produce the 'pencil in cup' appearance (circle). All the lesser toes are subluxed.

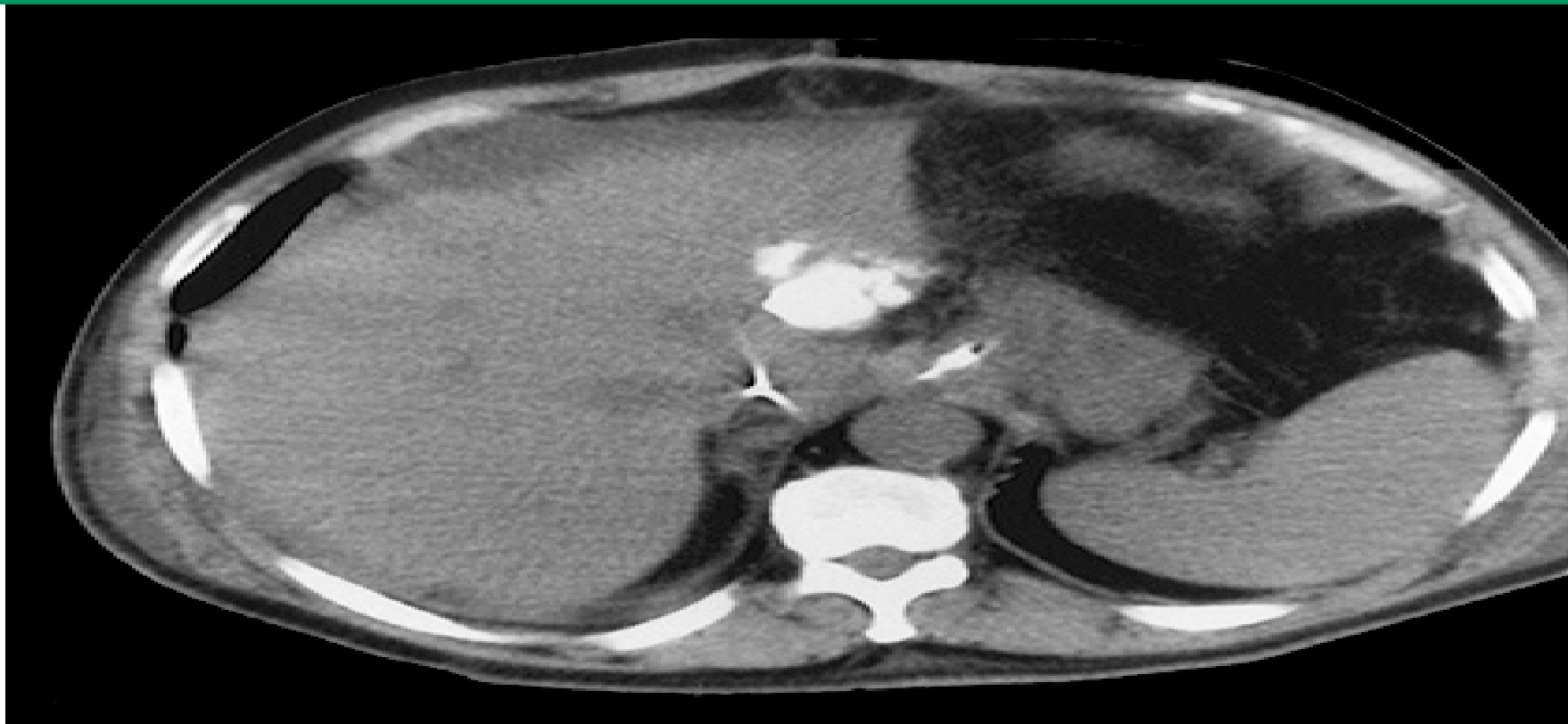
# ETIOLOGY

- Small, Gram (-), aerobic coccobacilli, Intracellular organisms (survive in the reticulo-endothelial system for a long period), non motile, Non spore forming,
- lacking a capsule, flagella, endospores.
- Oxidase and catalase tests (positive).



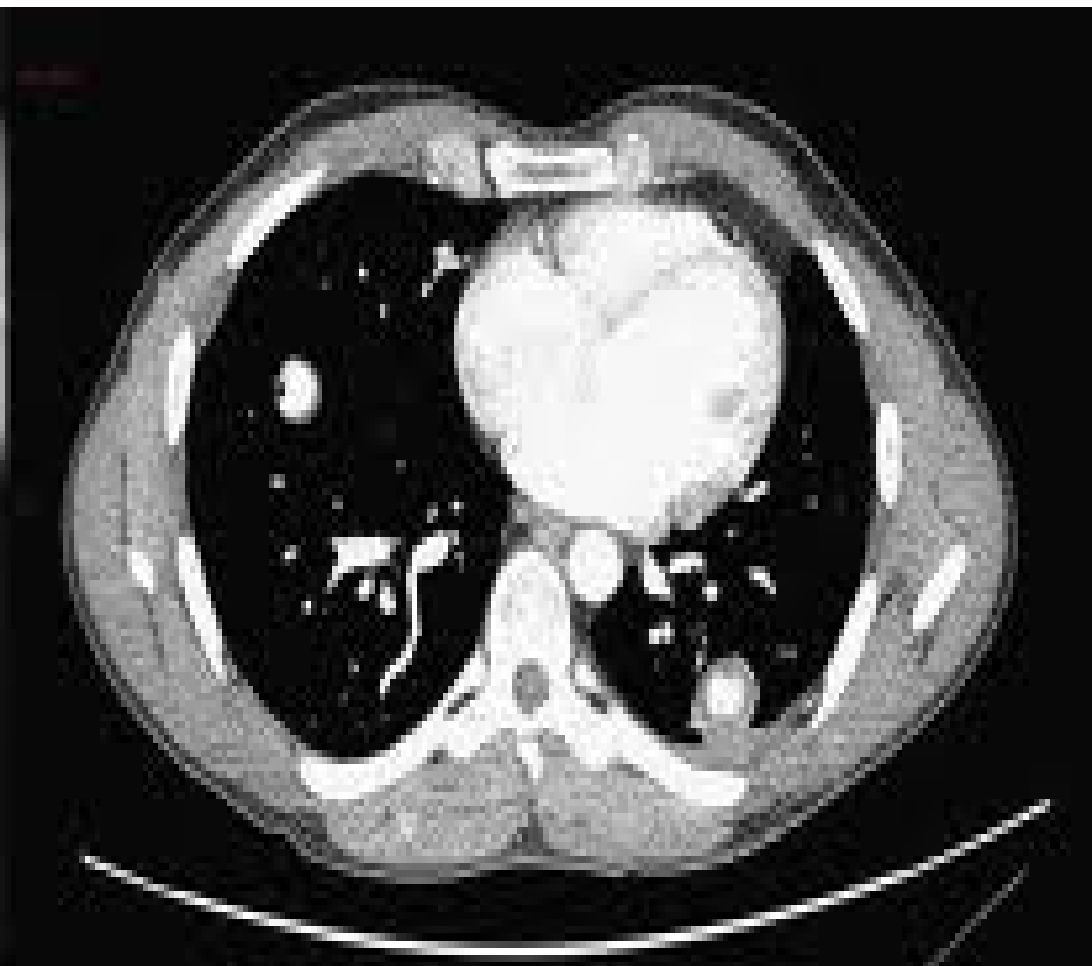


## Snowflake calcification in chronic hepatosplenic brucellosis



Noncontrast CT of the liver of patient at the time of admission to the hospital, showing large calcium density without surrounding hypodensity. Serological test results at this time were as follows: rose bengal, negative; agglutination, negative; and Coombs' test, 1/80. Diagnoses of liver abscess and brucellosis were delayed.

Reproduced with permission from: Ariza, J, Pigrau, C, Cañas, C, et al. *Current understanding and management of chronic hepatosplenic suppurative brucellosis. Clin Infect Dis* 2001; 32:1024. Copyright © 2001 University of Chicago Press. <http://www.journals.uchicago.edu/>



### Radiograph and CT with bilateral pulmonary nodules

showing 3 on the right side and 2 on the left. Their sizes ranged from 2 to 3.5cm, with well-defined edges, concentric linear calcifications and in contact with the pleura.

Ecthyma gangrenosum caused by *Pseudomonas aeruginosa*  
NP fever



# Addison's disease clinical features

- Decreased body hair
- Loss of libido especially in females

These symptoms are due to adrenal androgen insufficiency







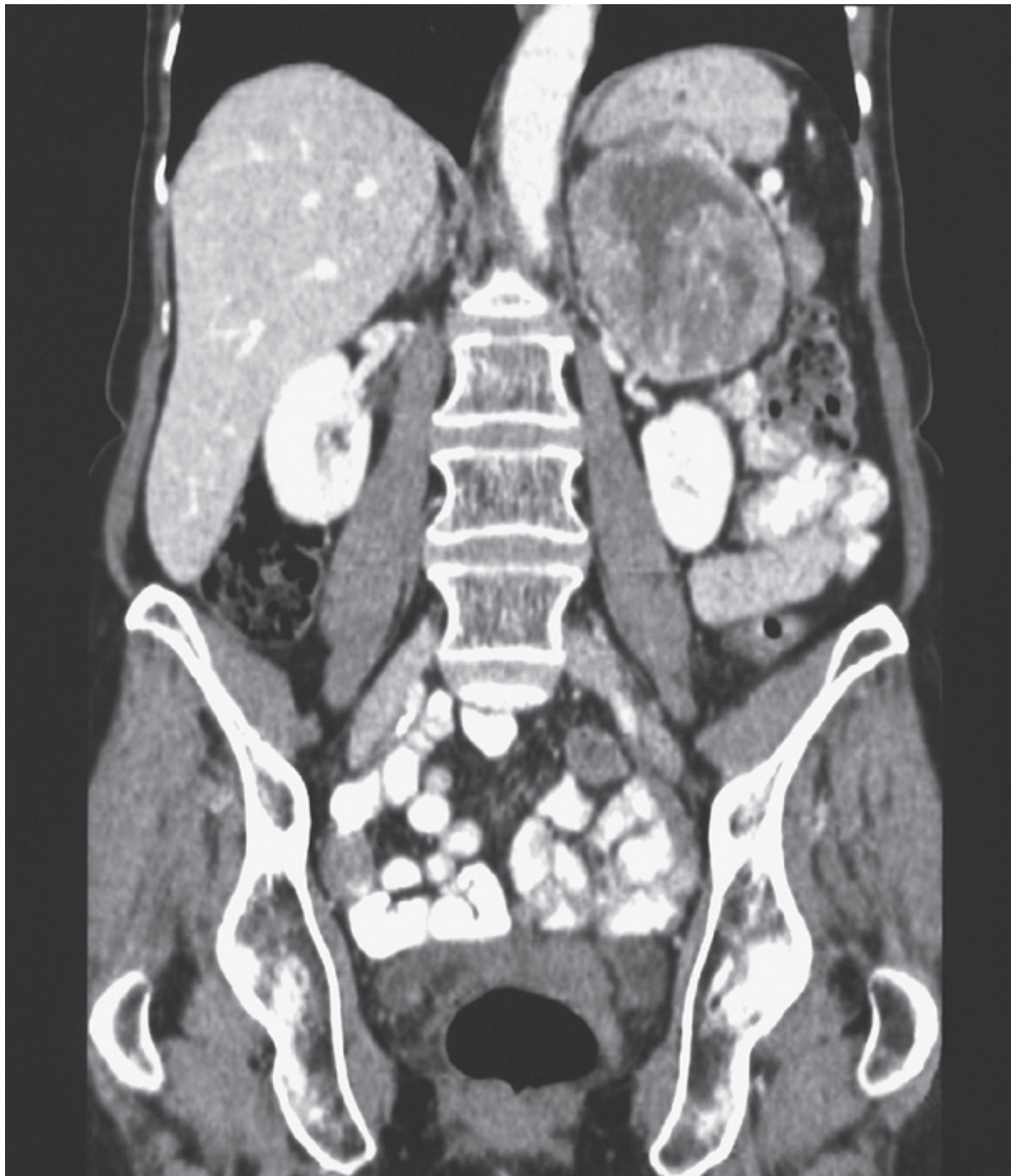
**Hyperpigmentation in primary adrenal insufficiency** Thirty-two year-old man with Addison's disease caused by tuberculosis with generalized hyperpigmentation, most marked on areas exposed to sunlight, such as face and neck. Courtesy of David N Orth, MD.

# Localization of the tumour

After diagnosis a pheochromocytoma, localization of the tumour is done by:

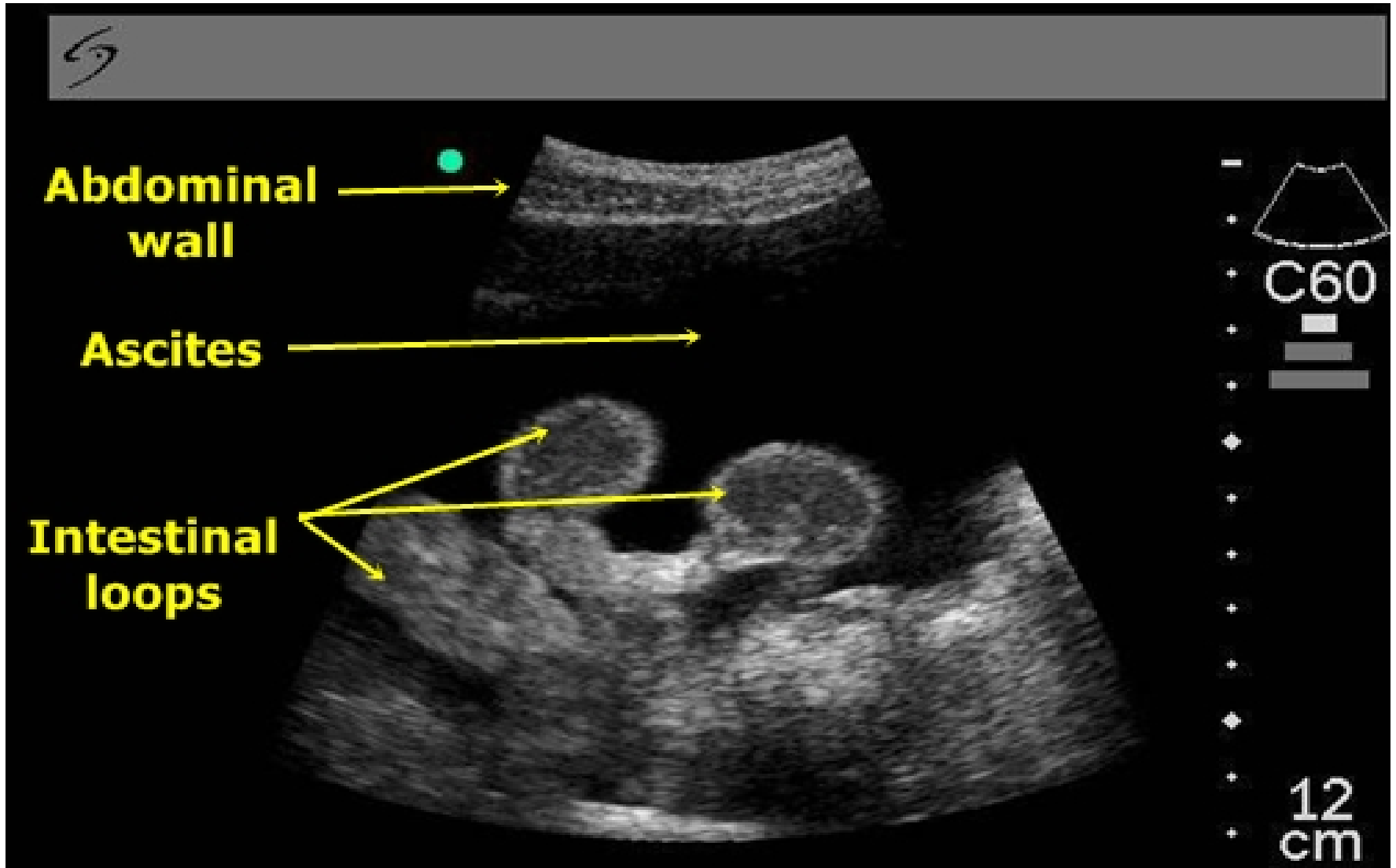
- 1) Abdominal CT (detect 85-95% of tumours)
- 2) MRI (can detect up to 100% of tumours)

If not detected, scintigraphy and PET scanning can be useful.

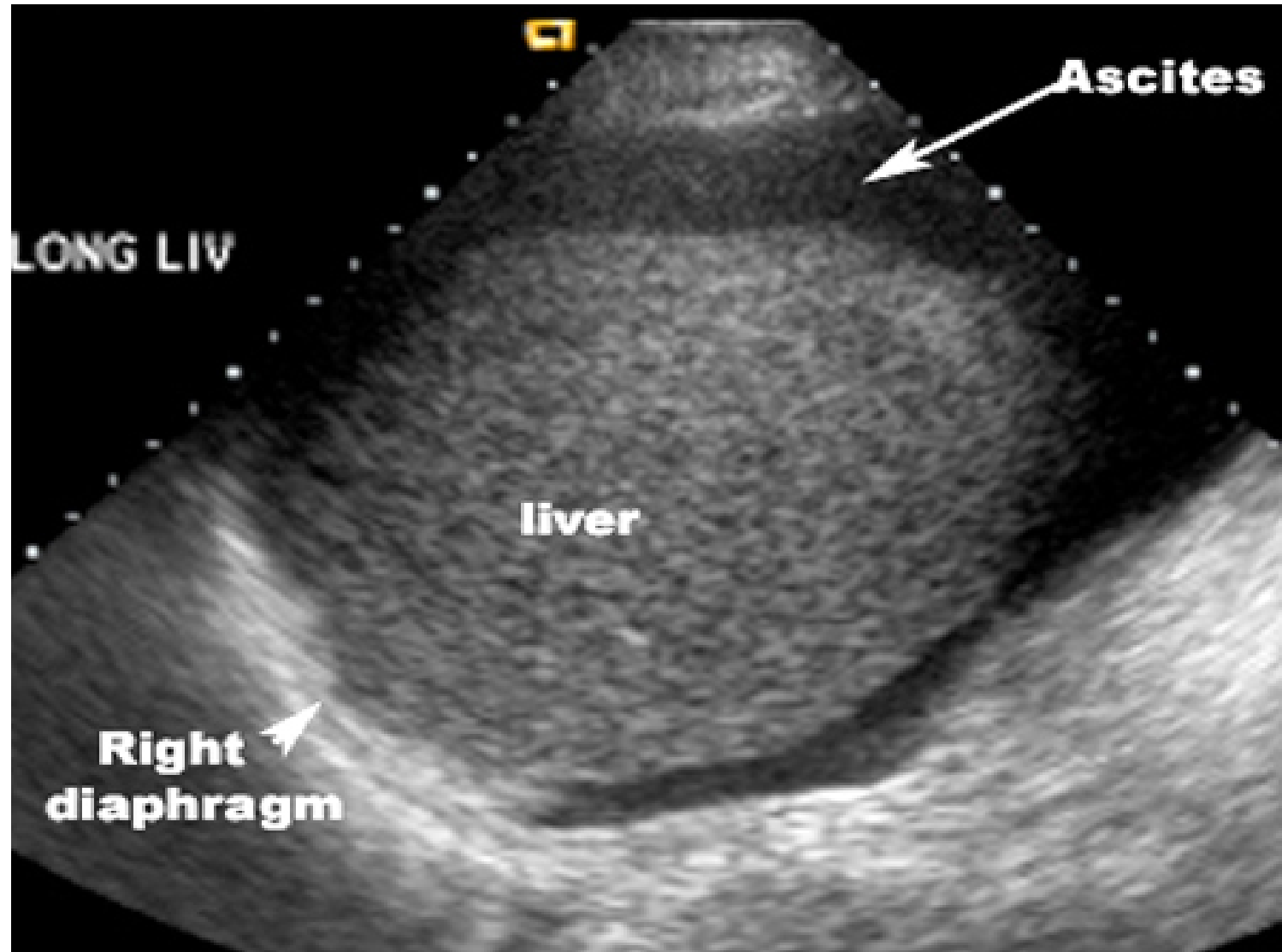




# Intra-abdominal Fluid - Sonography



# Imaging findings of ascites in ultrasound and CT



# Bulging Flanks

- With the patient supine, the examiner visually observes whether the flanks are pushed outward (presumably by large amounts of ascitic fluid)
- Positive test: simply the presence of bulging flanks
- Note: A patient with an obese abdomen may also have flanks that bulge, although the fat of obesity extends further posterior than fluid in the peritoneum.



**spider nivae**



**Capput medusae**



Venous hum over the distended veins around umbilicus in cirrhosis with portal hypertension by auscultation .





**PURPURA FULMINANS**



**CHRONIC DIC**

# Diffuse Esophageal Spasm

**Pathogenesis:** Diffuse esophageal spasm is a motility disorder of smooth muscle, in which non-peristaltic spontaneous contractions occur. This occurs usually from the degeneration of nerve processes.

**Clinical presentation:** Chest pain and dysphagia are the most common symptoms.

## **Diagnosis:**

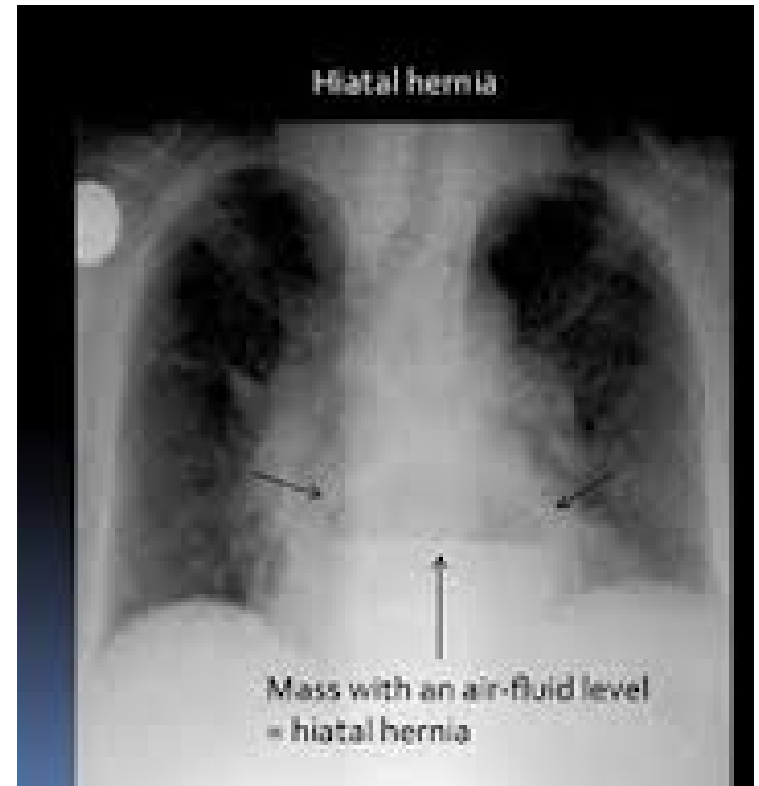
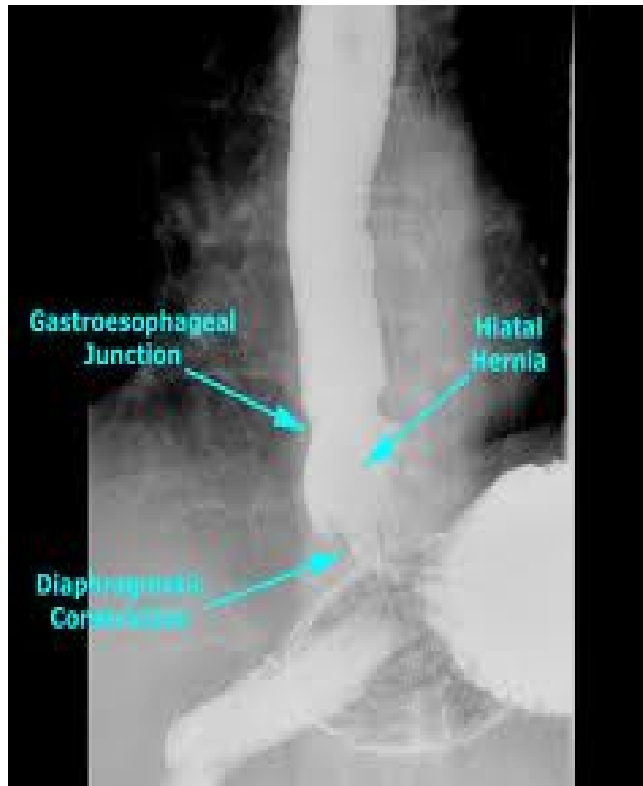
1. The "corkscrew" pattern is seen on barium swallow and is caused by simultaneous uncoordinated esophageal contractions
2. Diffuse esophageal spasm is confirmed by manometric studies that show non-peristaltic uncoordinated contractions.

**Treatment:** Calcium-channel blockers (nifedipine) and nitrates are commonly used



# Diagnosis

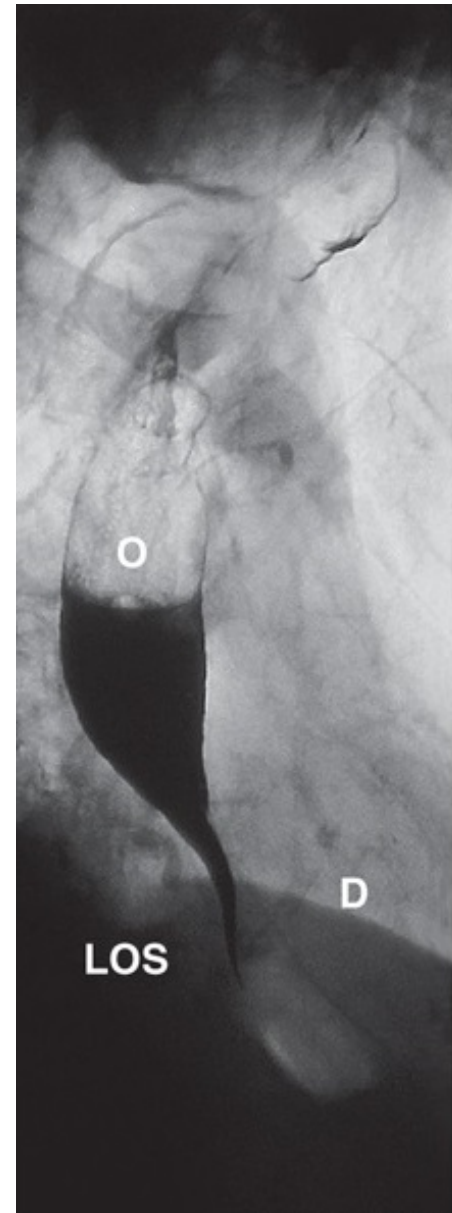
A hiatal hernia can be diagnosed with a specialized X-ray (using a barium swallow) that allows a doctor to see the esophagus





# Barium swallow

X-ray showing a dilated, barium-filled oesophagus (O) with fluid level and distal tapering, and a closed lower oesophageal sphincter (LOS)

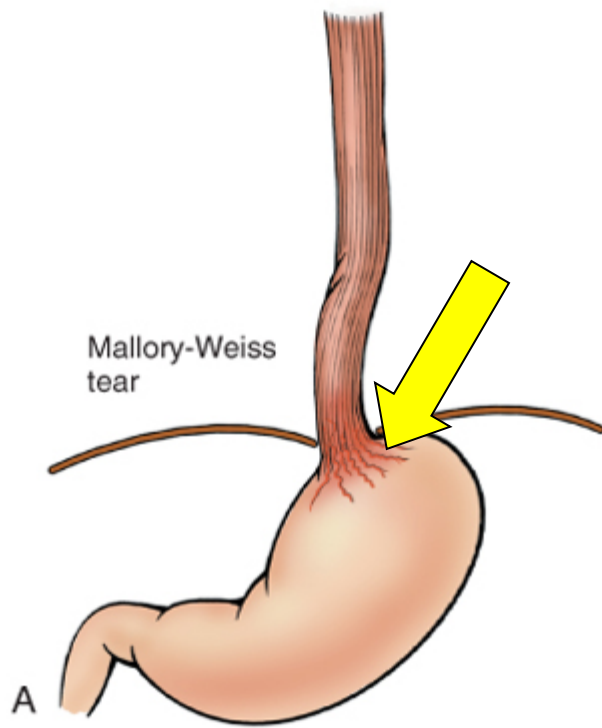


**Preoperatively**



**Postoperatively**

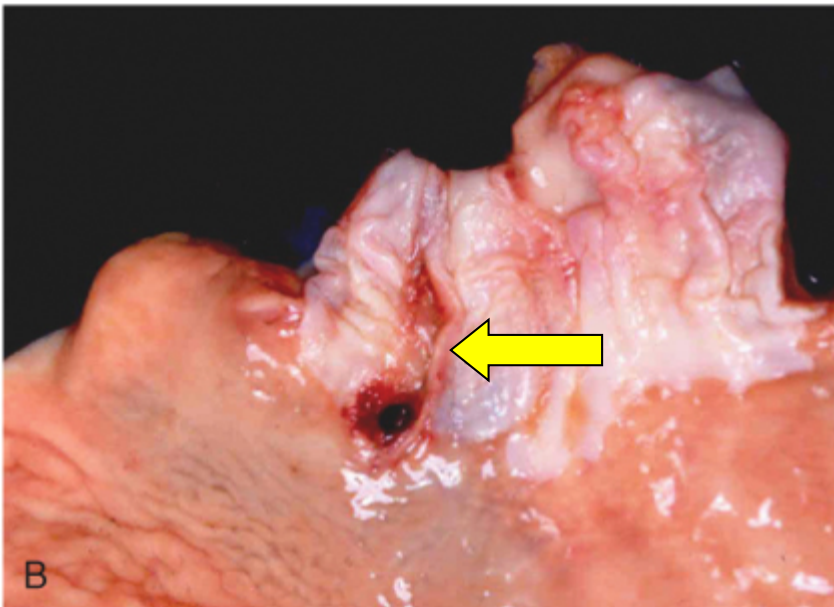




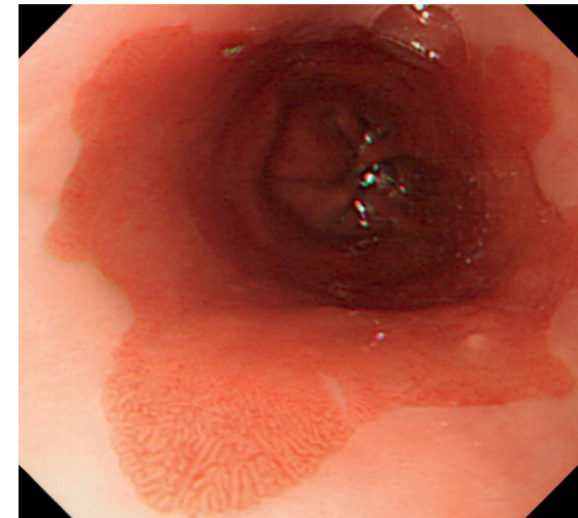
## Esophageal lacerations (Mallory-Weiss syndrome).

**A**, Longitudinal tears in the esophagogastric junction.

**B**, Gross photograph demonstrating longitudinal laceration oriented in the axis of the esophageal lumen (arrow), extending from the esophageal mucosa to the stomach mucosa.



**Eosinophilic esophagitis** is inflammation of the esophagus due to an increase in the number of a type of white blood cells (**eosinophils**) in the lining of the esophageal wall. This leads to **dysmotility** of the esophagus (the muscles do not work properly to move food through) and **difficulty in swallowing**. Causes of eosinophilic esophagitis include **food allergies**, gastroesophageal reflux disease (**GERD**), **parasitic diseases**, or **inflammatory bowel diseases**.



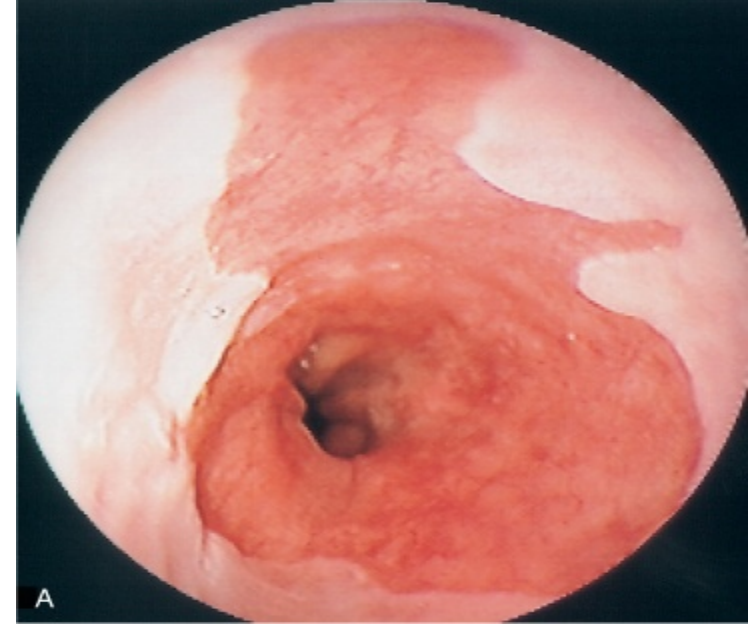
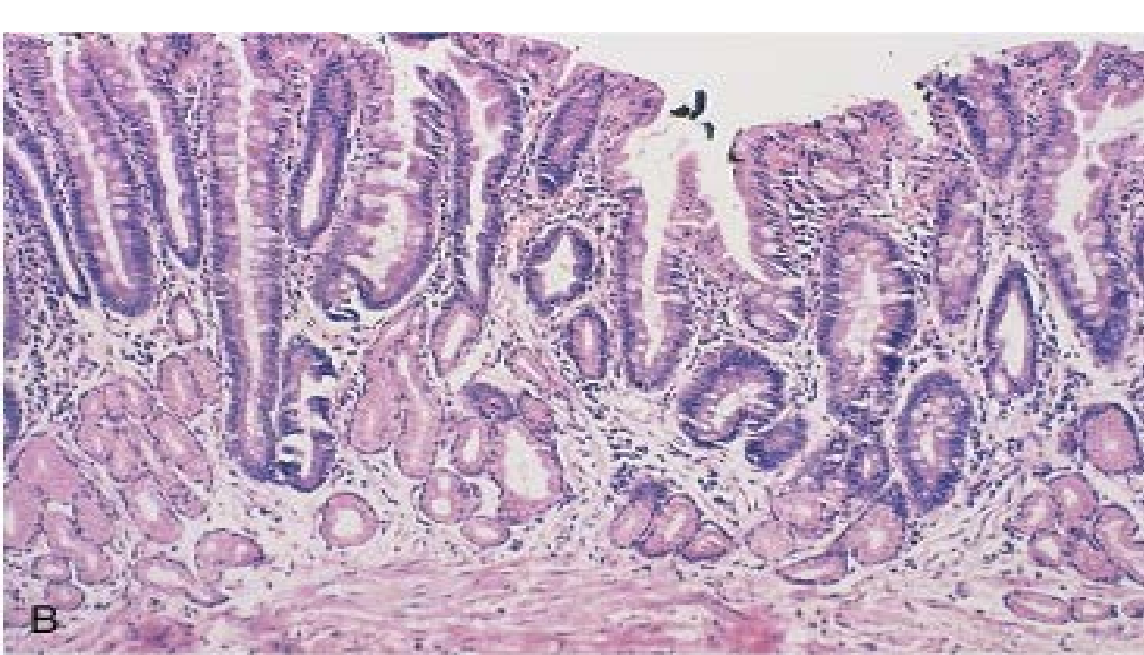


**Esophagitis** presents with progressive **odynophagia**, although the swallowing is painful, food is still able to pass until the disease is extremely advanced, other symptoms : **heartburn** (pain in chest/abdomen and may radiate to neck/jaw)

**Nausea** and **postprandial worsening of symptoms.**

**Candidal esophagitis**



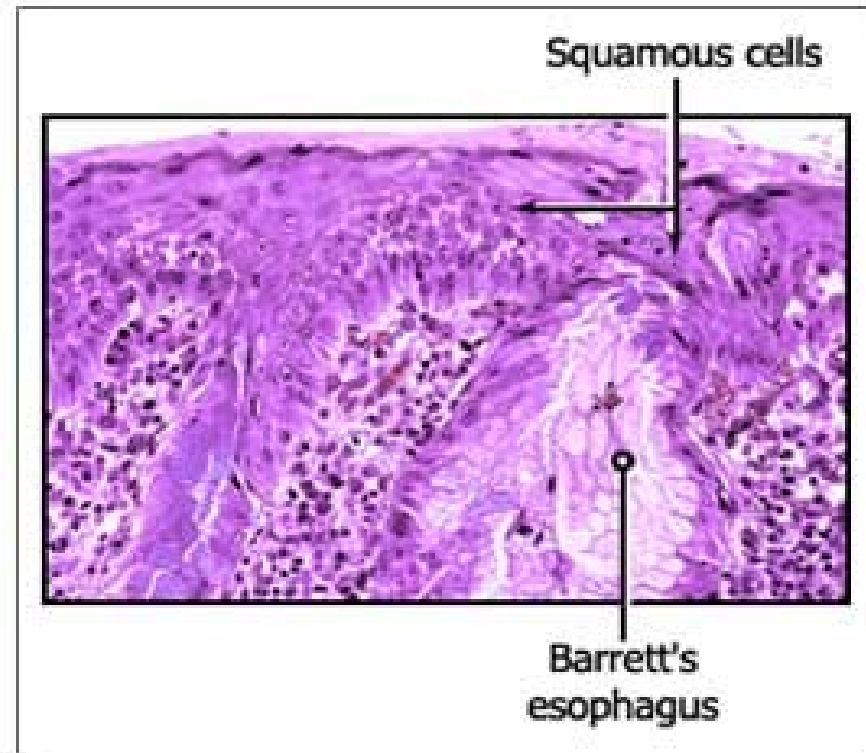


## Barrett esophagus.

**A, Endoscopic view showing red velvety gastrointestinal-type mucosa extending from the gastroesophageal orifice. Note paler squamous esophageal mucosa.**

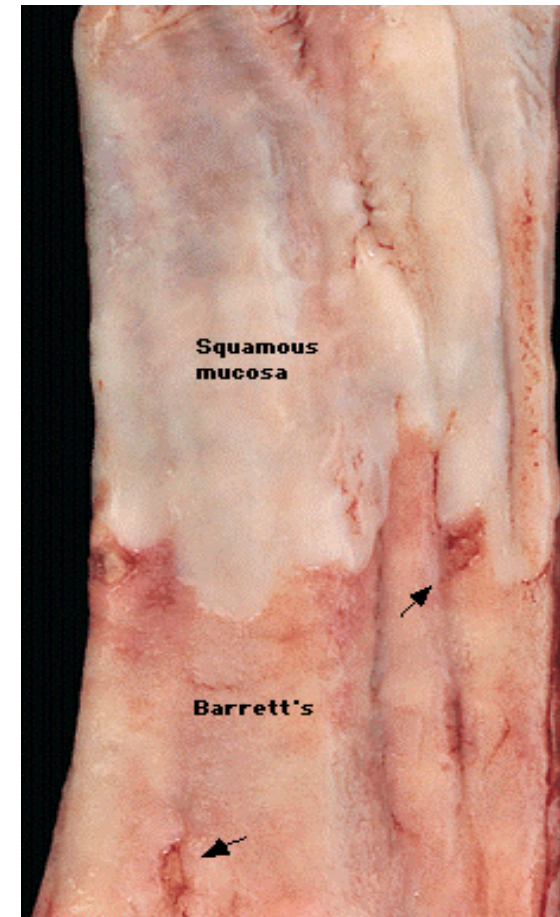
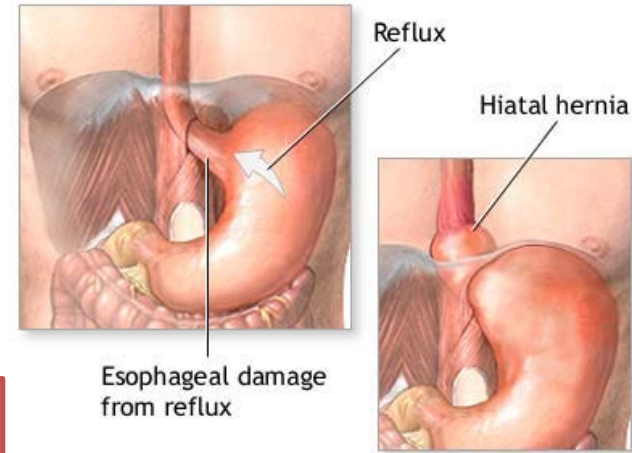
**B, Microscopic view showing mixed gastric- and intestine-type columnar epithelial cells in glandular mucosa.**

11/10/2017



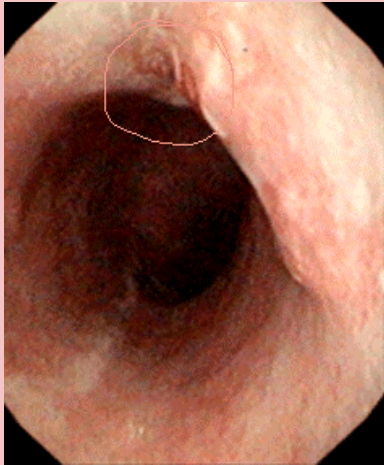
# Risk Factors: Adenocarcinoma

- Associated with **Barretts's esophagus, GERD & hiatal** hernia.
- Obesity (3 to 4 fold risk)
- Smoking (2 to 3 fold risk)
- Increased esophageal acid exposure such as Zollinger-Ellison syndrome.

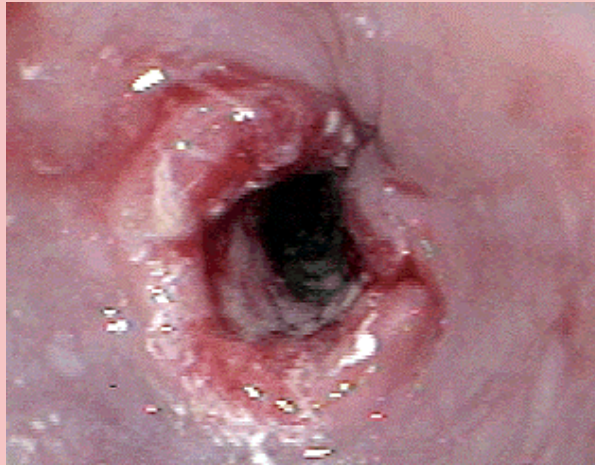


# Diagnostic Workup

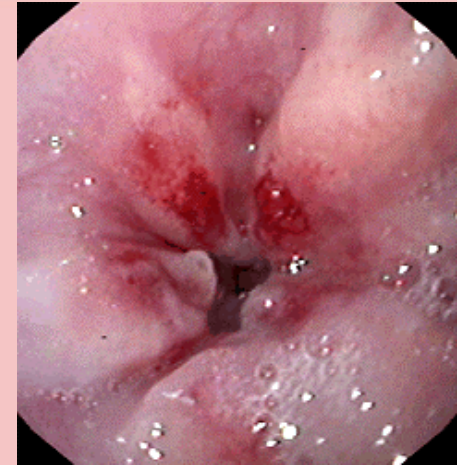
- Detailed history & Physical examination: Dysphagia, odynophagia, hoarseness, wt. loss, use of tobacco, nitrosamines, history of GERD. **Examine for cervical or supraclavicular adenopathy.**
- Confirmation of diagnosis:
  - The investigation of choice is : upper gastrointestinal endoscopy (EGD) with **Biopsy** and **cytology**.



Early, superficial cancer



Circumferential ulceration esophageal cancer

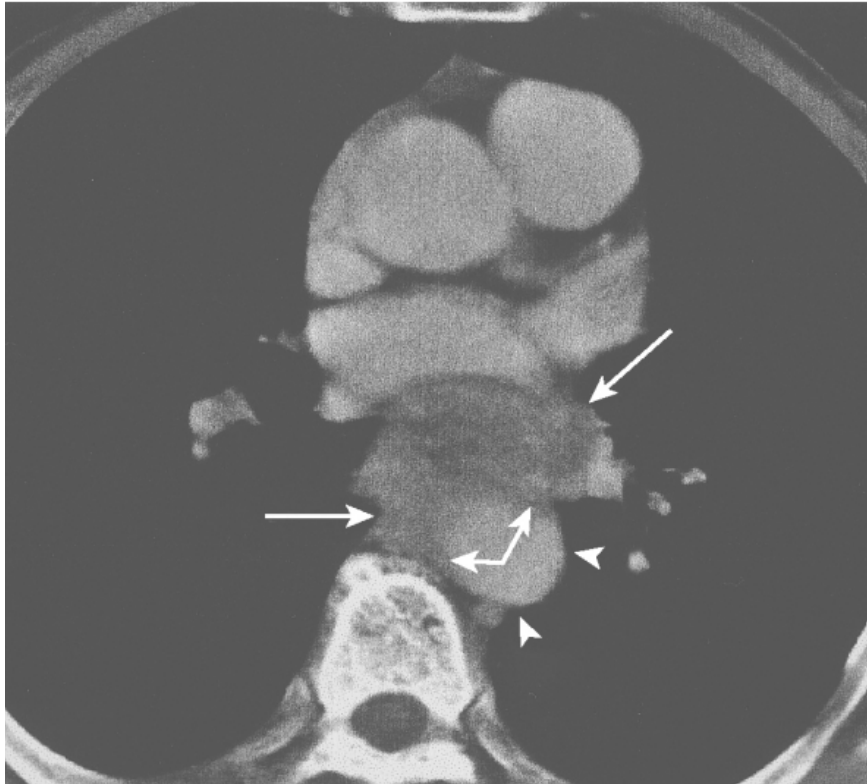


Malignant stricture of esophagus

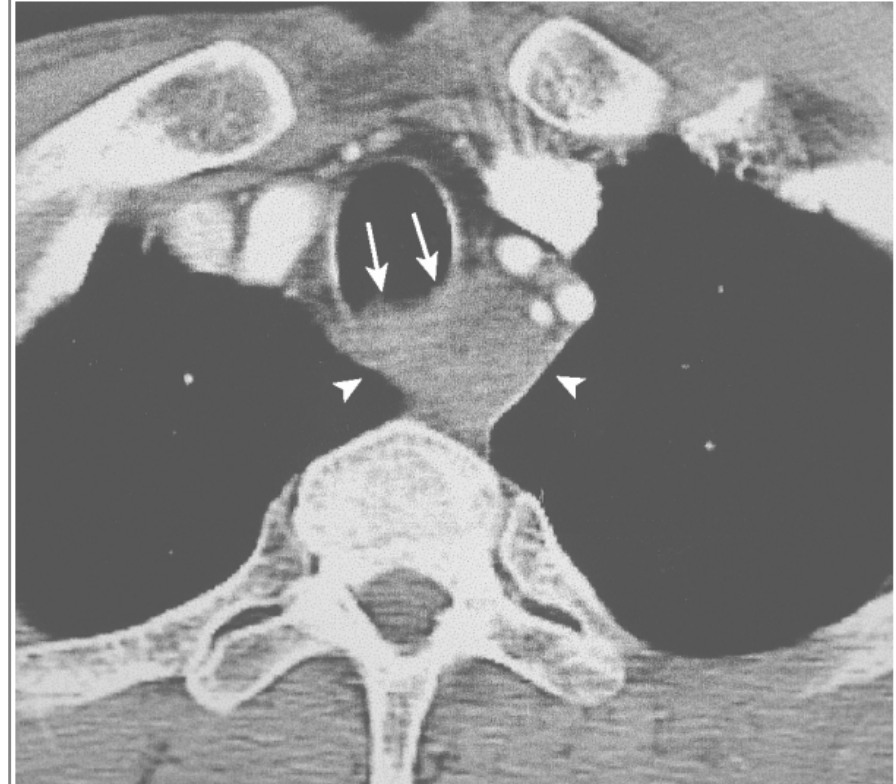


- **Staging:**

- **CT chest and abdomen:** Essential for staging because it can identify extension beyond the esophageal wall, enlarged lymph nodes and visceral metastases.



**Figure** Esophageal cancer with **aortic invasion**. An arc (*bent arrow*) of the contact between the esophageal cancer (*arrows*) and the aorta (*arrowheads*) is more than 90 degrees, indicating aortic invasion.

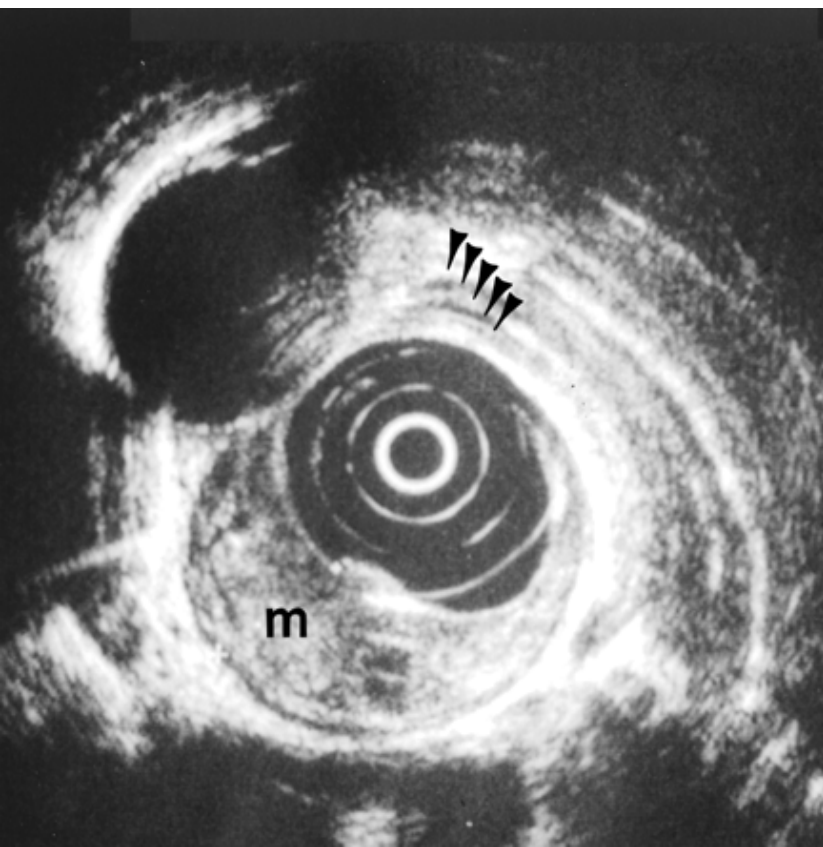


**Figure** Esophageal cancer with **tracheal invasion**. CT scan shows circumferential wall thickening of the proximal esophagus (*arrowheads*), which shows irregular interface with the posterior wall of the trachea (*arrows*), indicating direct extension into the lumen

# Endoscopic Ultrasonography

- EUS:

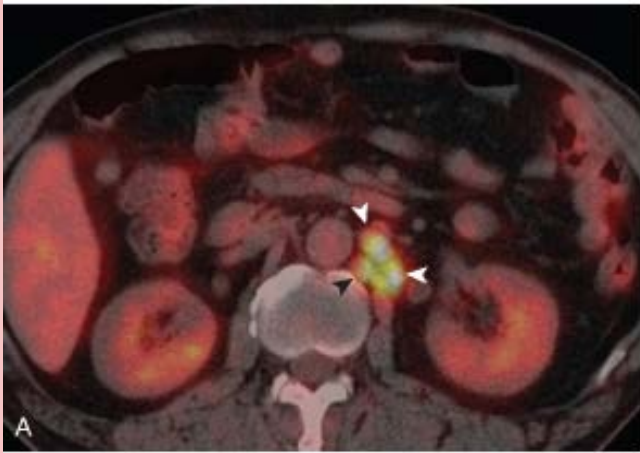
- assess the depth of penetration of the tumor into the esophageal wall and LN involvement.
- Compared with EUS, CT is not a reliable tool for evaluation of the extent of tumor in the esophageal wall.



**Fig.** —55-year-old man with T2 esophageal tumor (m) shown on endoscopic sonogram. Note alternating hyperechoic and hypoechoic layers (*arrowheads*) of normal esophageal wall as seen on sonography. Innermost layer is hyperechoic and corresponds to superficial mucosa. Second layer is hypoechoic and corresponds to deep mucosa and muscularis mucosae. Third layer is again hyperechoic and corresponds to submucosa and its interface with muscularis propria. Fourth layer is hypoechoic and corresponds to muscularis propria, and outer fifth layer is hyperechoic and corresponds to adventitia.

# PET Scan

- most recently, proven to be valuable staging tool
- **can detect up to 15–20% of metastases not seen on CT and EUS**
- low accuracy in detecting local nodal disease compared to CT / EUS
- **Value in evaluating response to Chemo Therapy & Radio Therapy**
- addition of PET to CT can improve specificity and accuracy of non-invasive staging



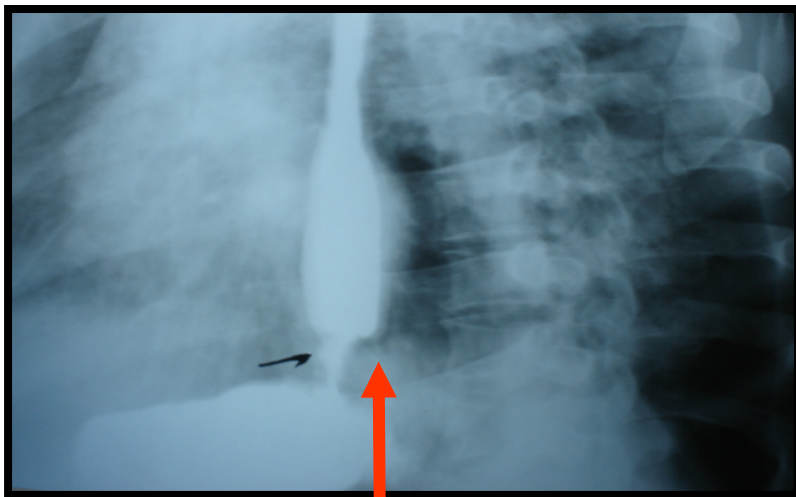
**Figure** Distant lymph node metastases of esophageal cancer detected by integrated CT PET. **A**, Integrated CT PET demonstrates para-aortic lymph node metastases showing increased FDG uptake (*arrowheads*). **B**, Corresponding CT image shows lymph nodes (*arrowheads*) measuring 5 to 8 mm in diameter. Based on size criteria, these lymph nodes may be considered benign on CT scan

- **Barium swallow:**

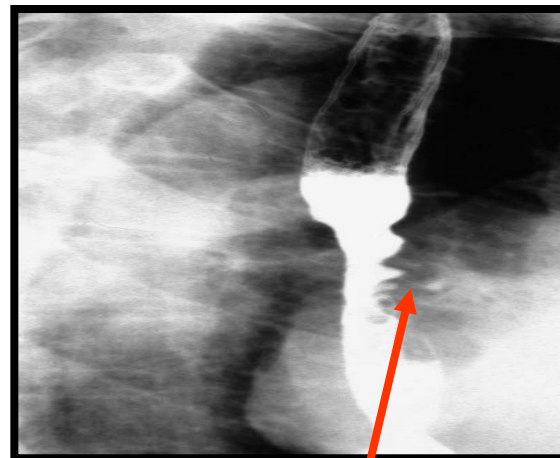
Demonstrates the site and length of the stricture but adds little useful information.

– **Bronchoscopy:** rule-out fistula in midesophageal lesions.

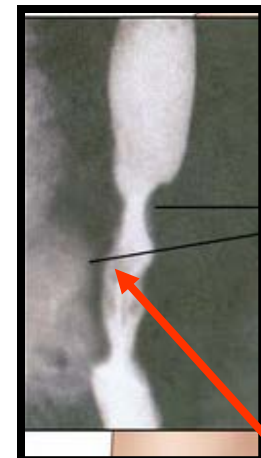
- **Routine Investigations:** CBC, chemistries, LFTs.



Rat tail appearance



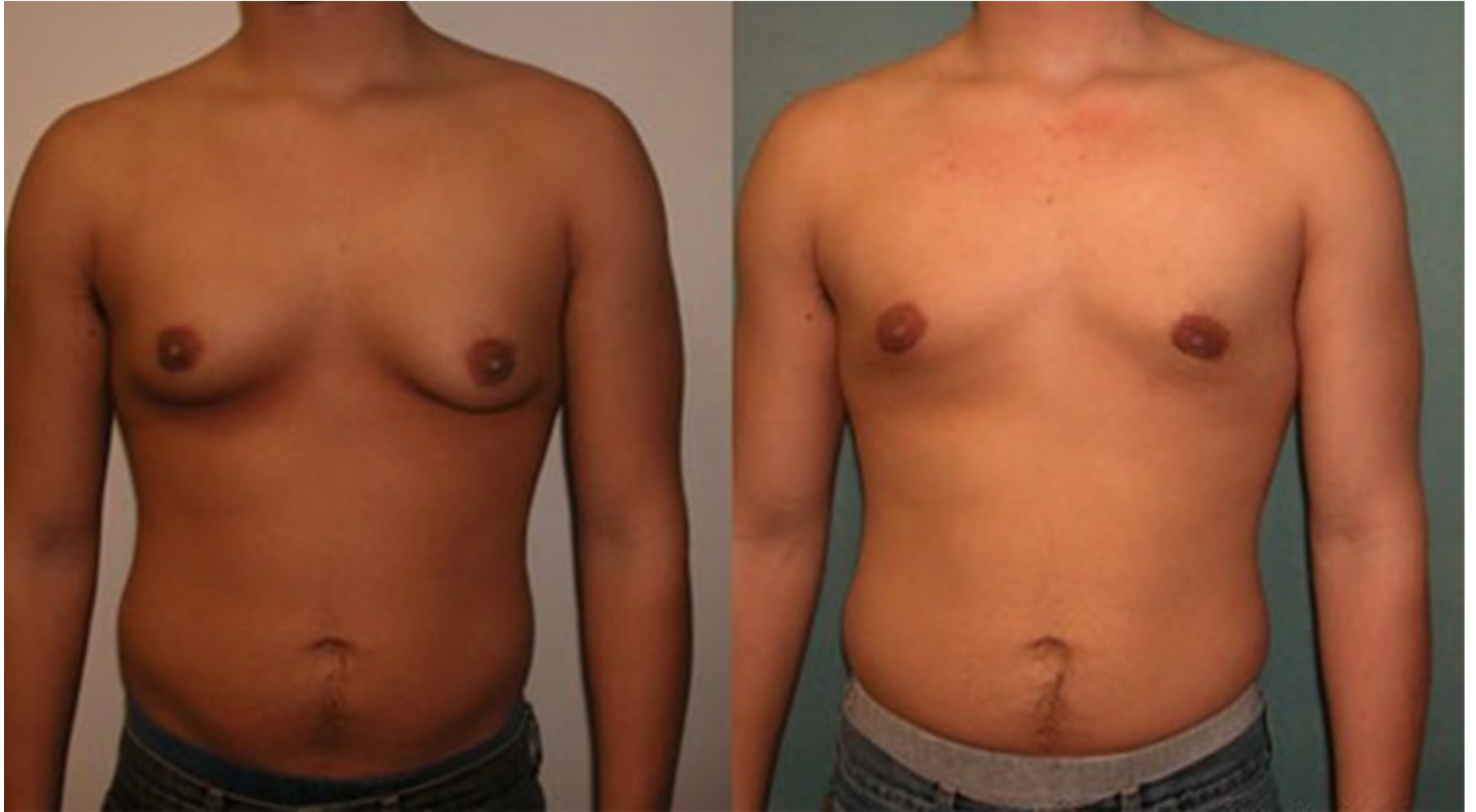
Cancer lower 1/3  
Filling defect (ulcerative type)



Apple core appearance



# gynecomastia

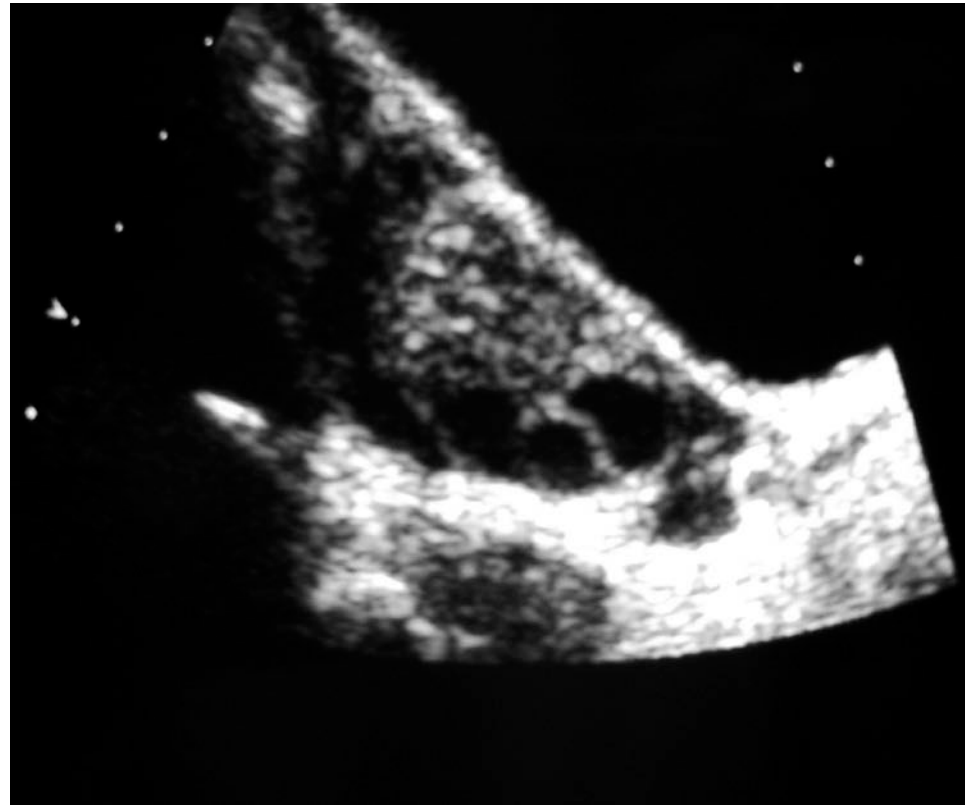
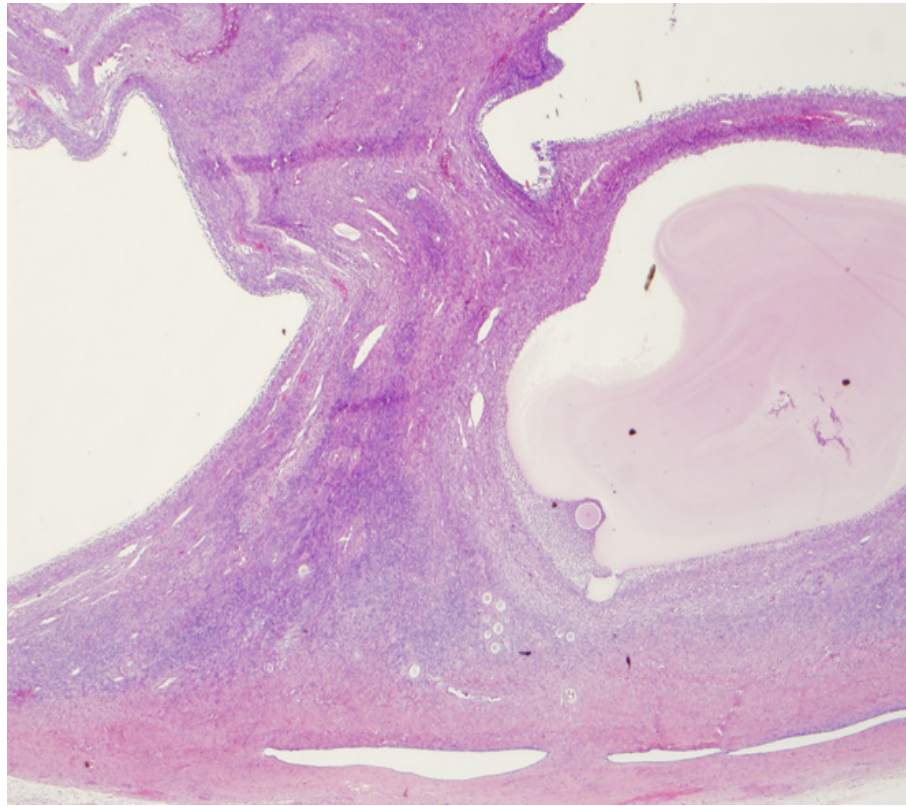




# Acanthosis nigricans



# Polycystic ovary

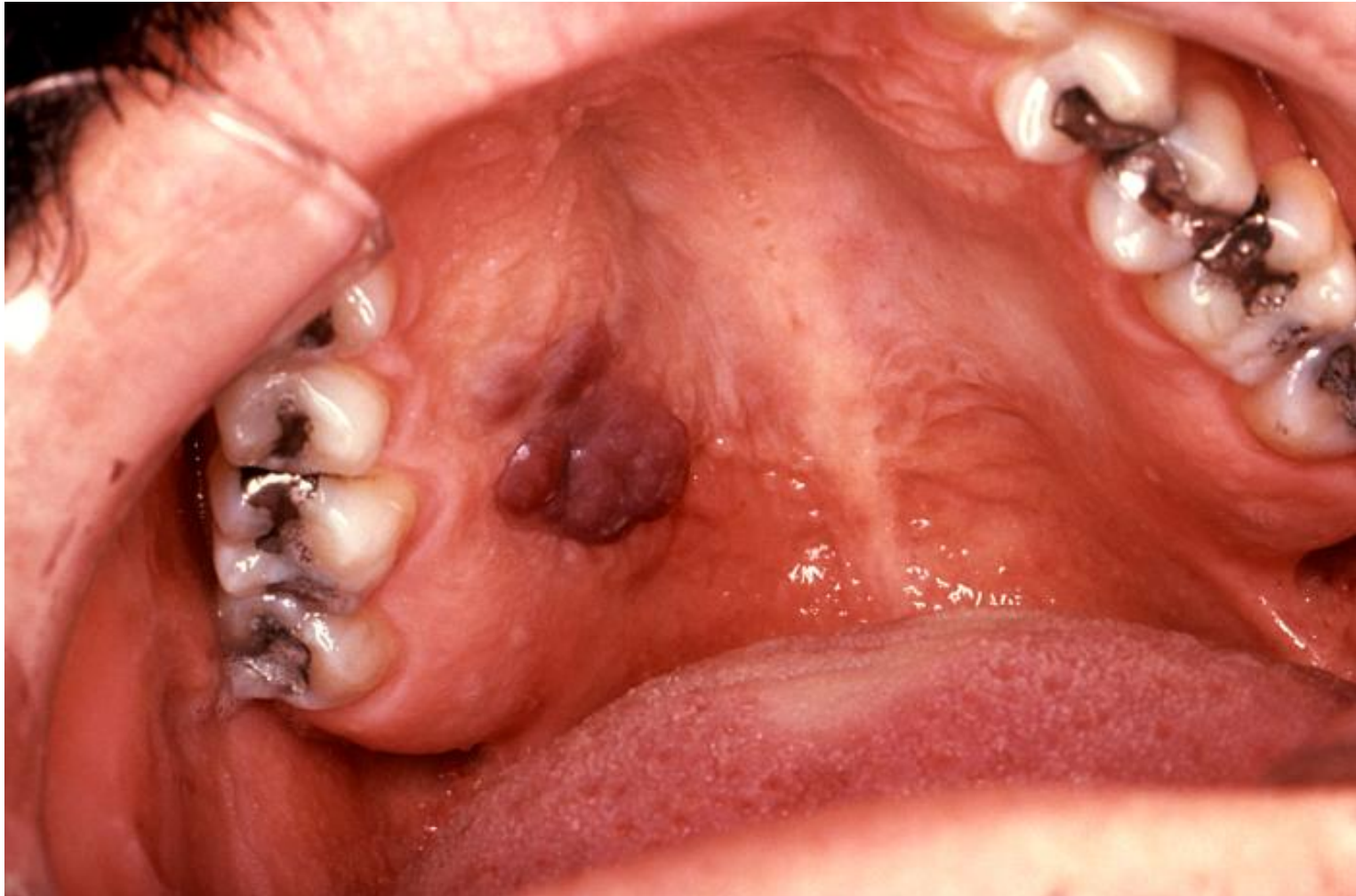




# AIDS Patients



# Oral Kaposi's sarcoma



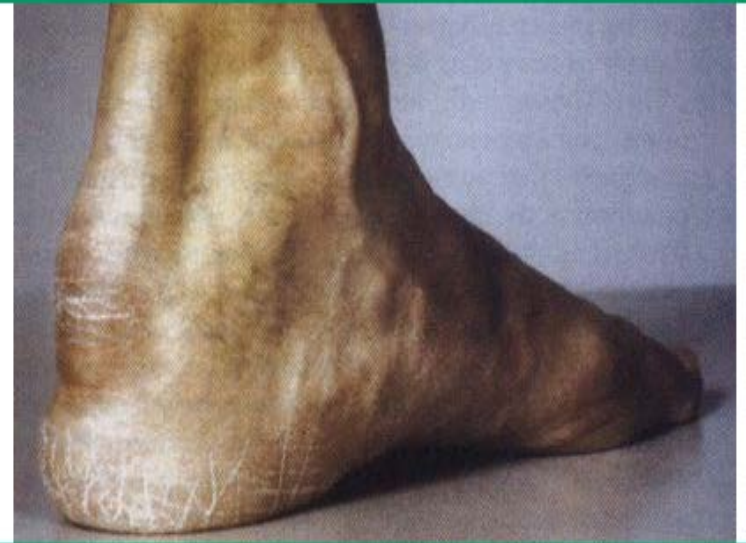
# SIGNS

**Xanthelasma**



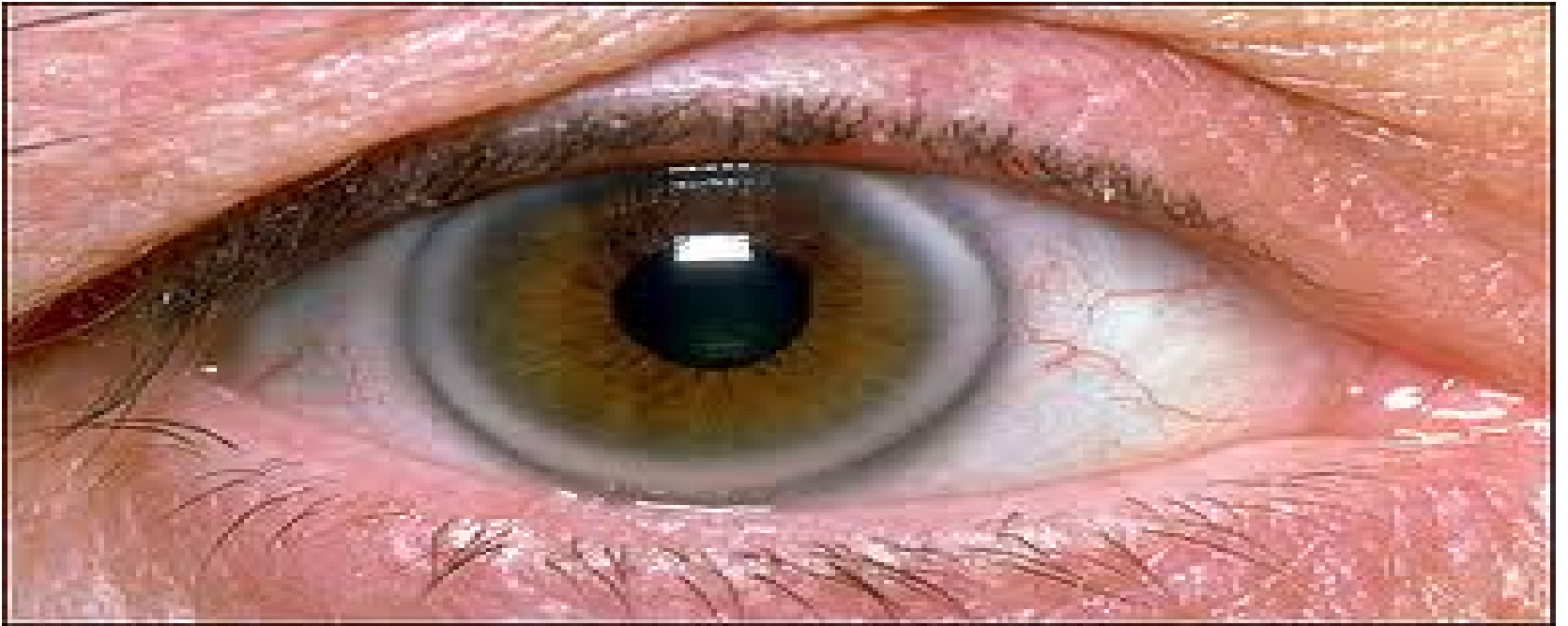
Yellow plaques are present bilaterally.

**Achilles tendon xanthoma**



A xanthoma of the Achilles tendon in a patient with heterozygous familial hypercholesterolemia.

# CORNEAL ARCUS



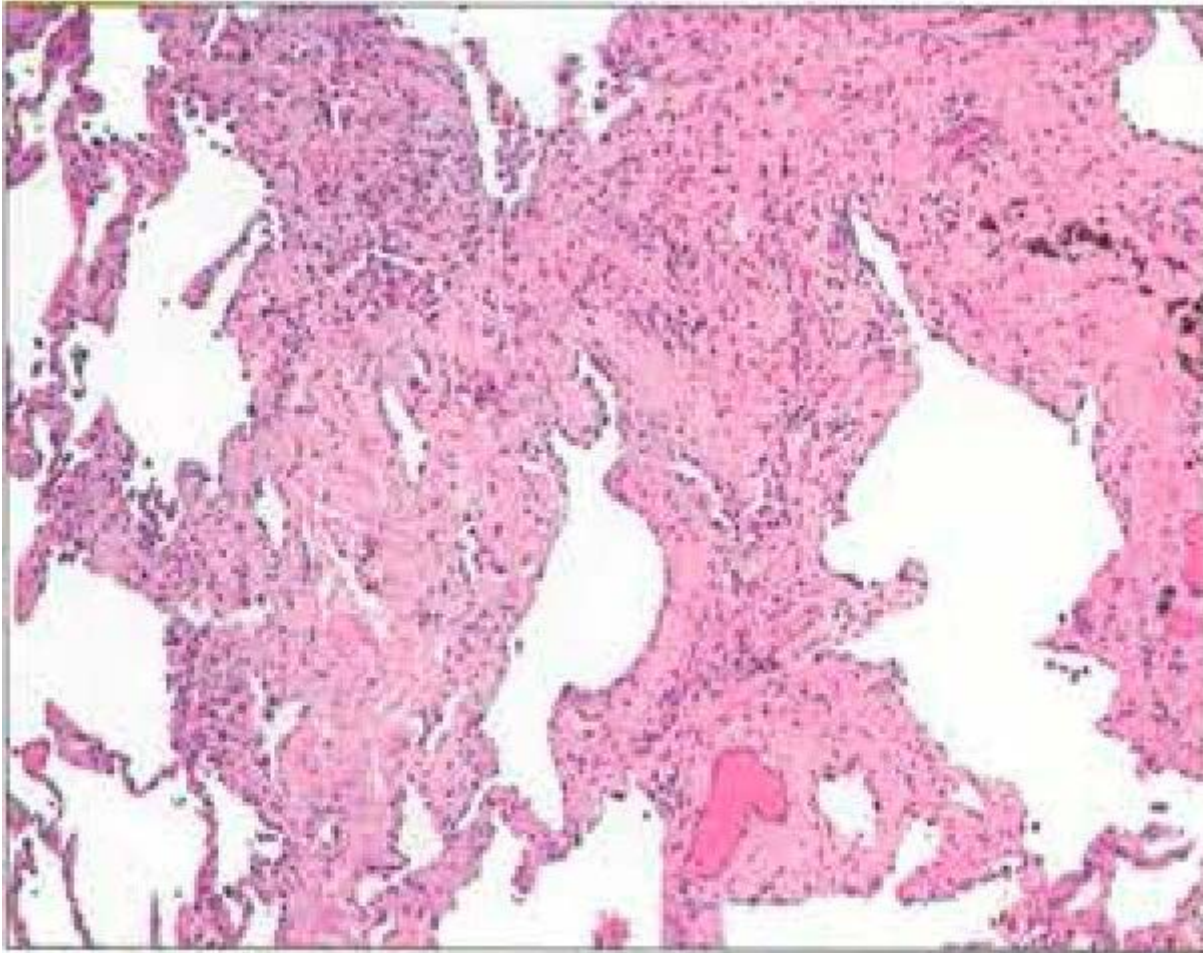


# CLINICAL PRESENTATION

- **Lab Tests:**

- ↑ TC
- ↑ LDL
- ↑ TG
- ↑ apolipoprotein B
- ↑ C-reactive protein
- ↓ HDL

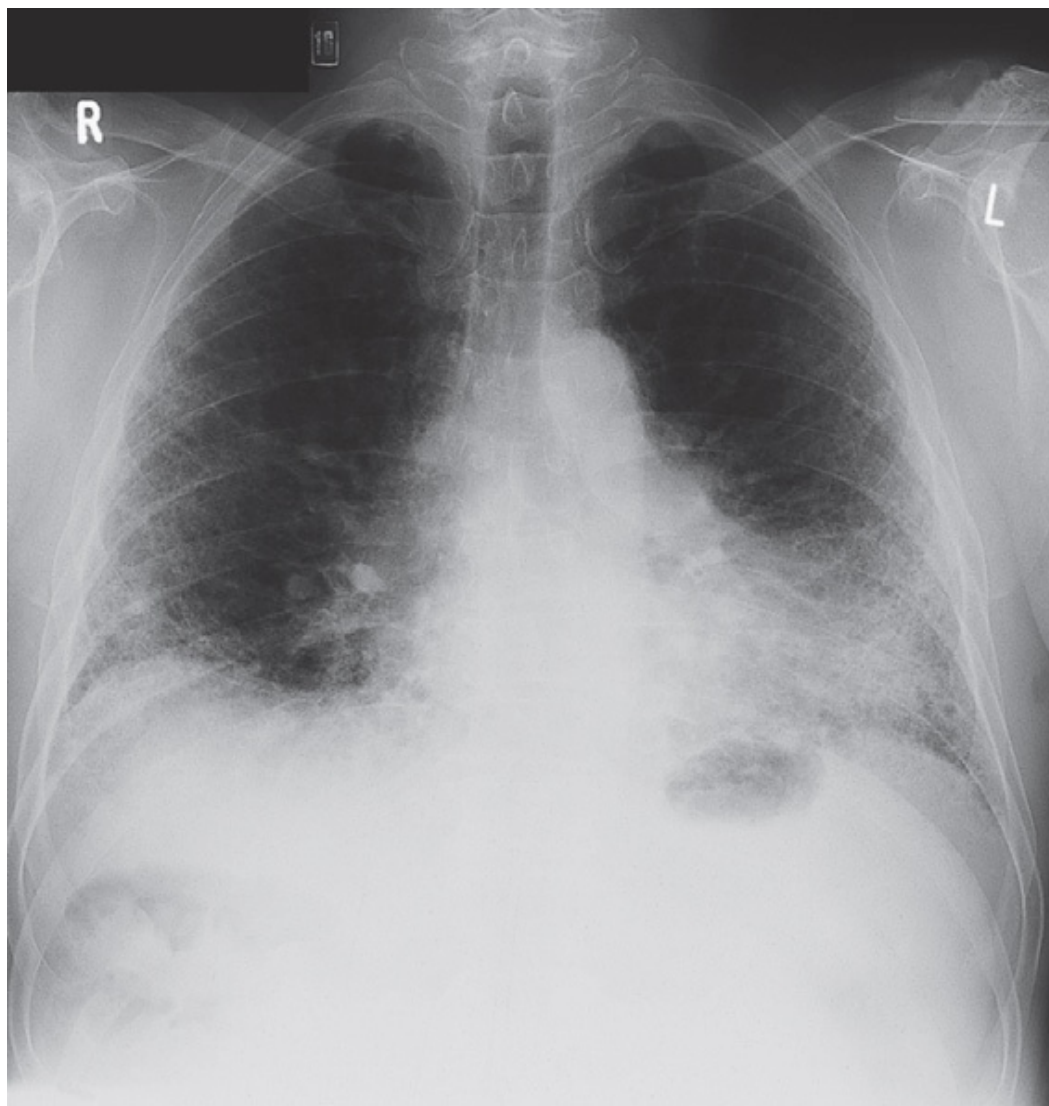




**interstitial fibrosis, idiopathic  
pulmonary fibrosis.**

# Established IPF will be apparent on chest X-ray as bilateral lower lobe and subpleural reticular shadowing

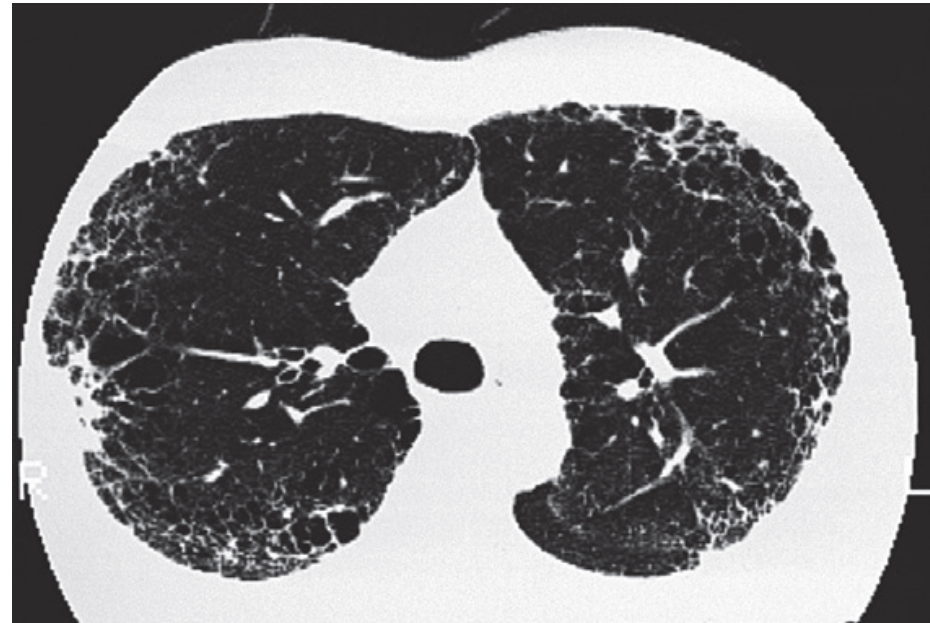
Chest X-ray showing bilateral, predominantly lower-zone and peripheral coarse reticulonodular shadowing and small lungs.



## Fibrosis on lung CT !

# HRCT typically demonstrates a patchy, predominantly peripheral, subpleural and basal reticular pattern and, in more advanced disease, the presence of **honeycombing cysts** and traction bronchiectasis

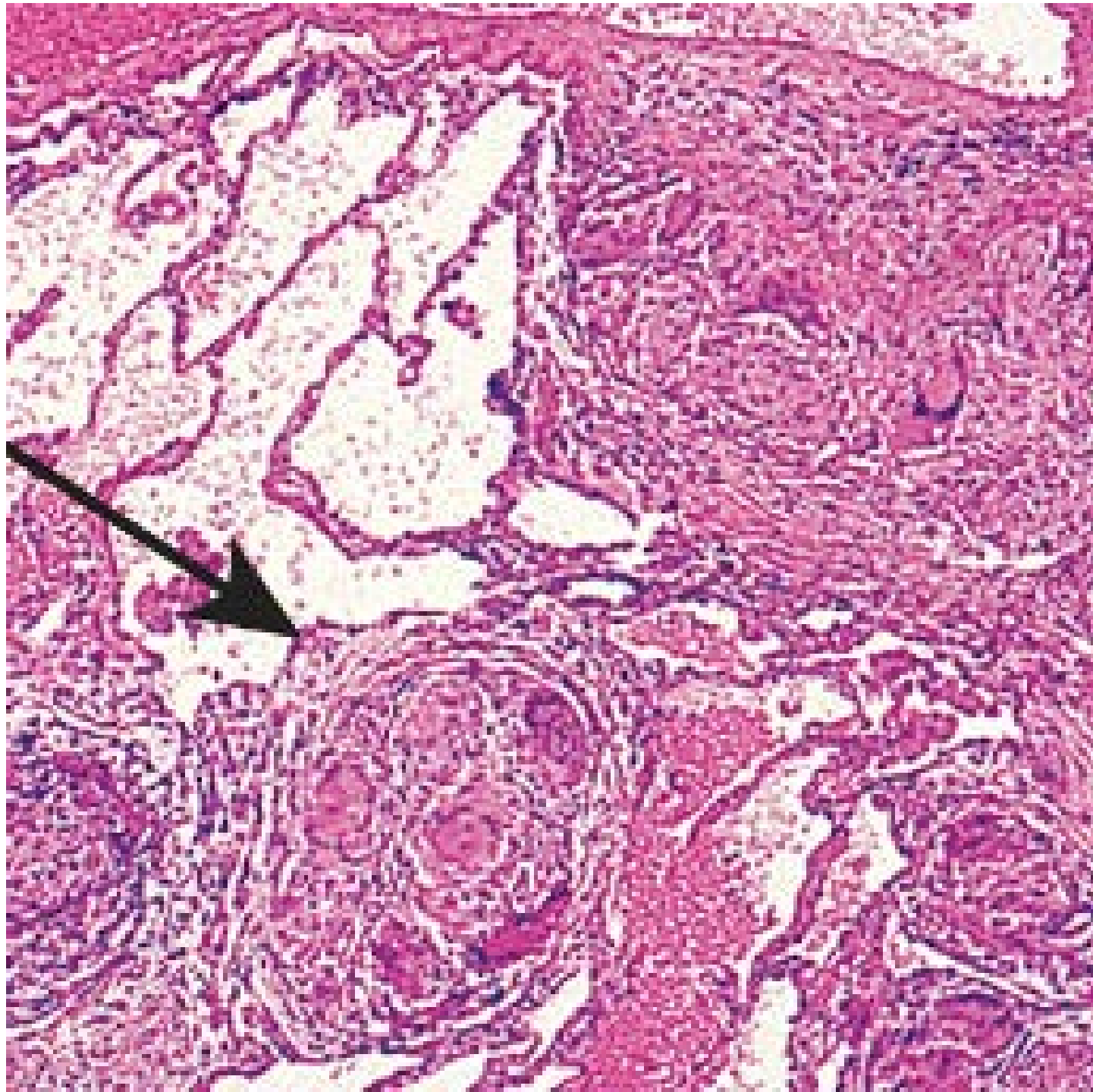
The CT scan shows **honeycombing** and scarring which is most marked peripherally



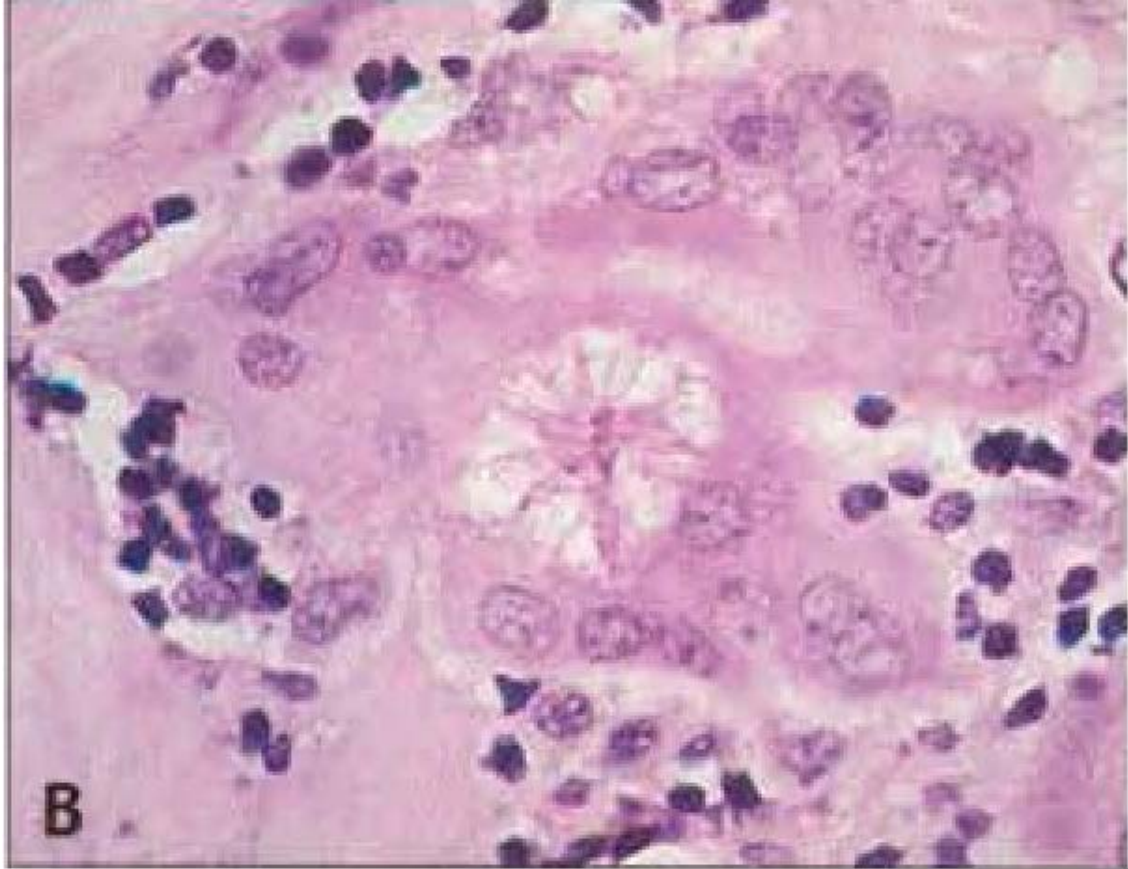
When these features are present, HRCT has a high positive predictive value for the diagnosis of IPF... and recourse to biopsy is seldom necessary. Lung biopsy should be considered in cases of diagnostic uncertainty or with atypical features



Sarcoidosis  
of the lung.  
Histology  
showing  
**non-  
caseating  
granulomas**  
(arrows).



Characteristic stellate inclusions ('**asteroid bodies**') are often seen within **giant cells** of the granulomas



What is Asteroid body ?!  
It's funny configuration of some giant cell

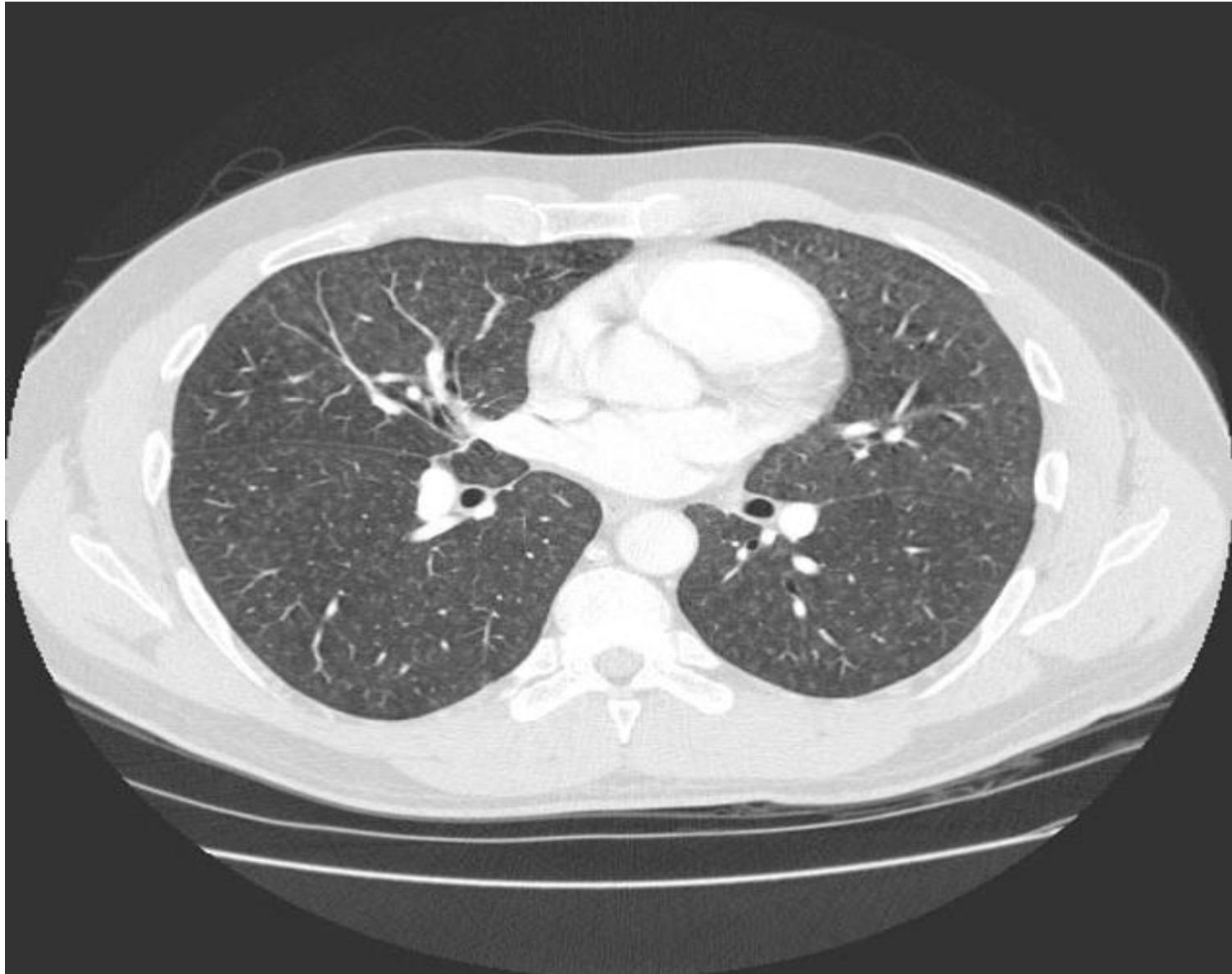
# INVESTIGATION

Chest X-RAY :

UPPER ZONE diffuse Micro nodular shadowing



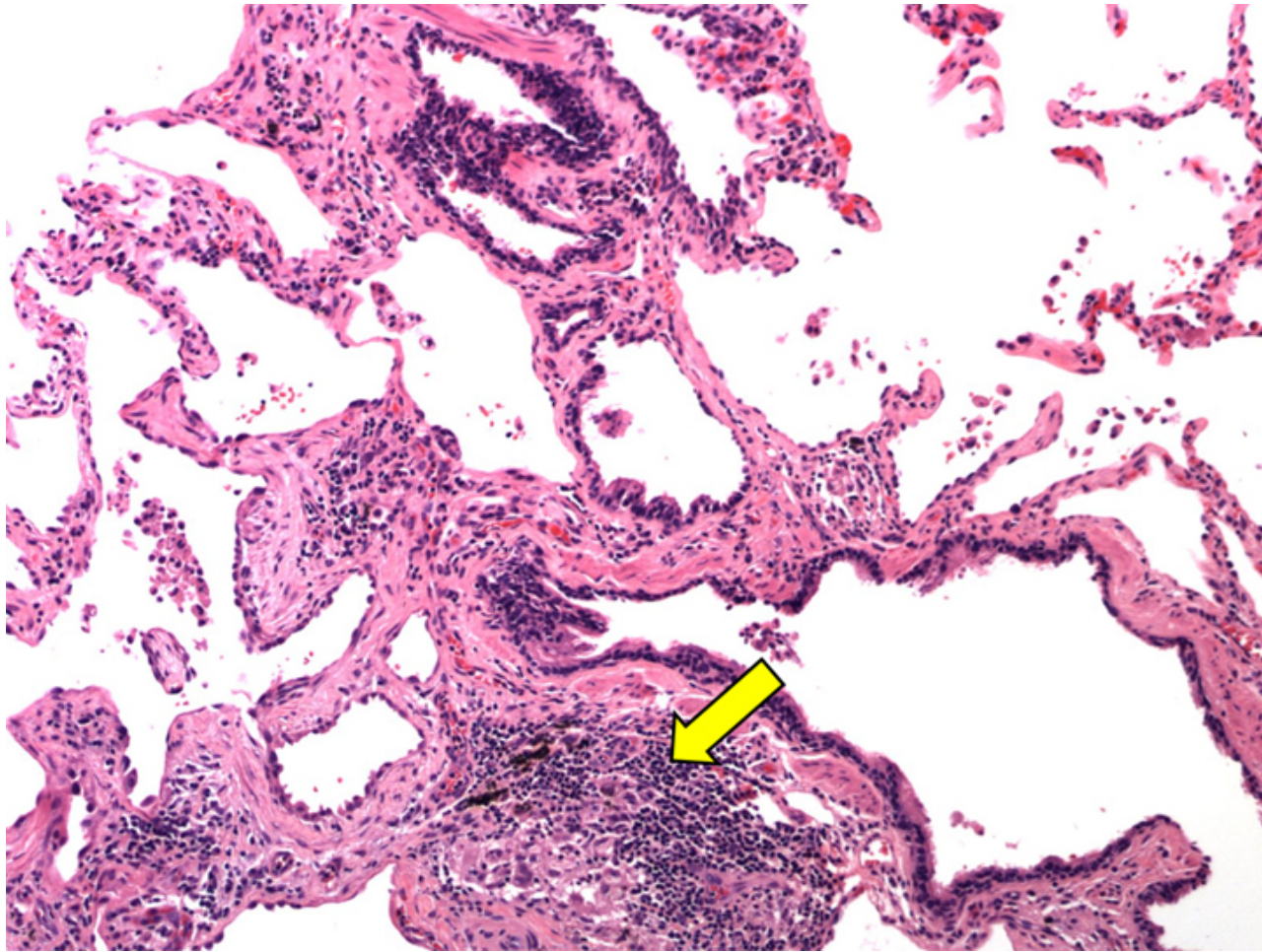
**HRCT** --- > MORE SENSITIVE AND PROVIDE  
INFORMATION ON THE **STAGE** OF DISEASE







Chest high resolution CT of a patient with **chronic hypersensitivity pneumonitis** due to metal-working fluid (machine operator's lung). This coronal view shows traction bronchiectasis and interlobular septal thickening. In addition, the fibrotic changes follow mainly a peribronchovascular distribution, with no zonal predominance.

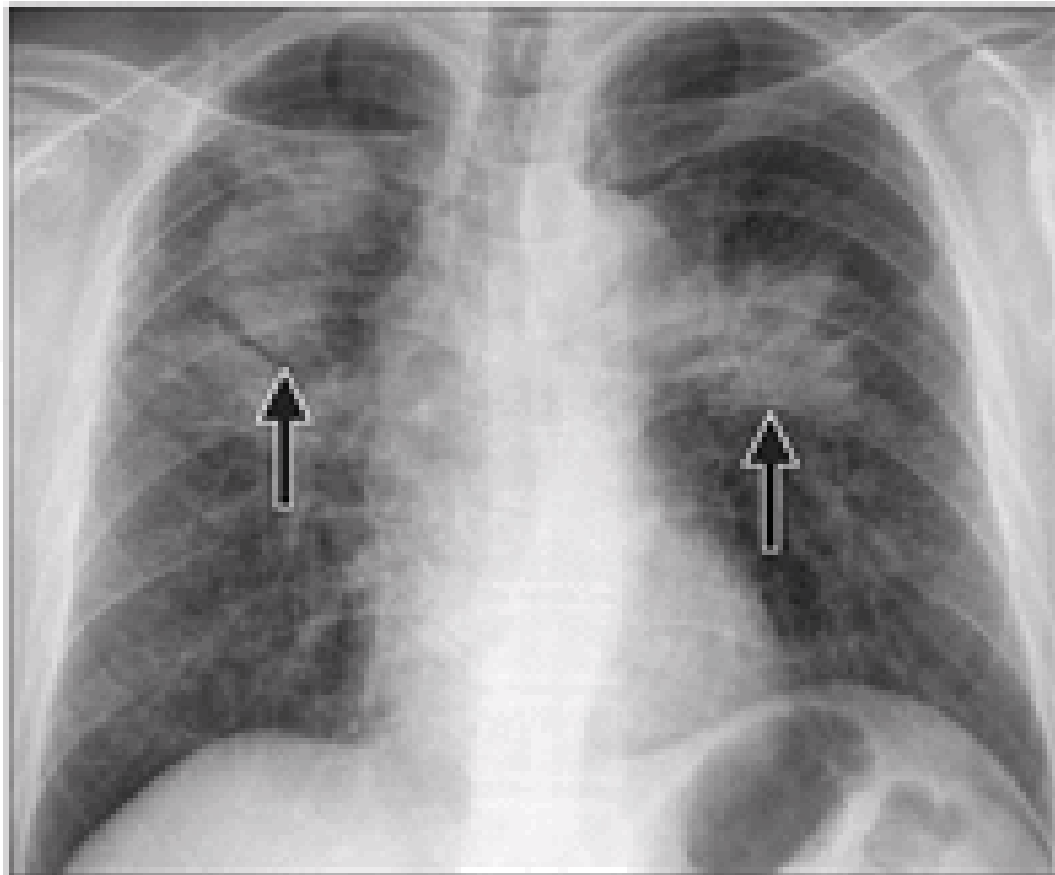


. Surgical lung biopsy of a patient with **subacute hypersensitivity pneumonitis** from hot tub exposure (hematoxylin and eosin stain).

The pathology shows giant cells and granulomas (thick arrow).

#Chest radiograph in a 60-year-old coal worker showing **bilateral** Small round densities in parenchyma,,, usually involving upper half of lung

# The **“angel’s wing”** appearance suggests **progressive massive fibrosis**



# silicosis

An occupational lung disease caused by inhalation of silica dust .

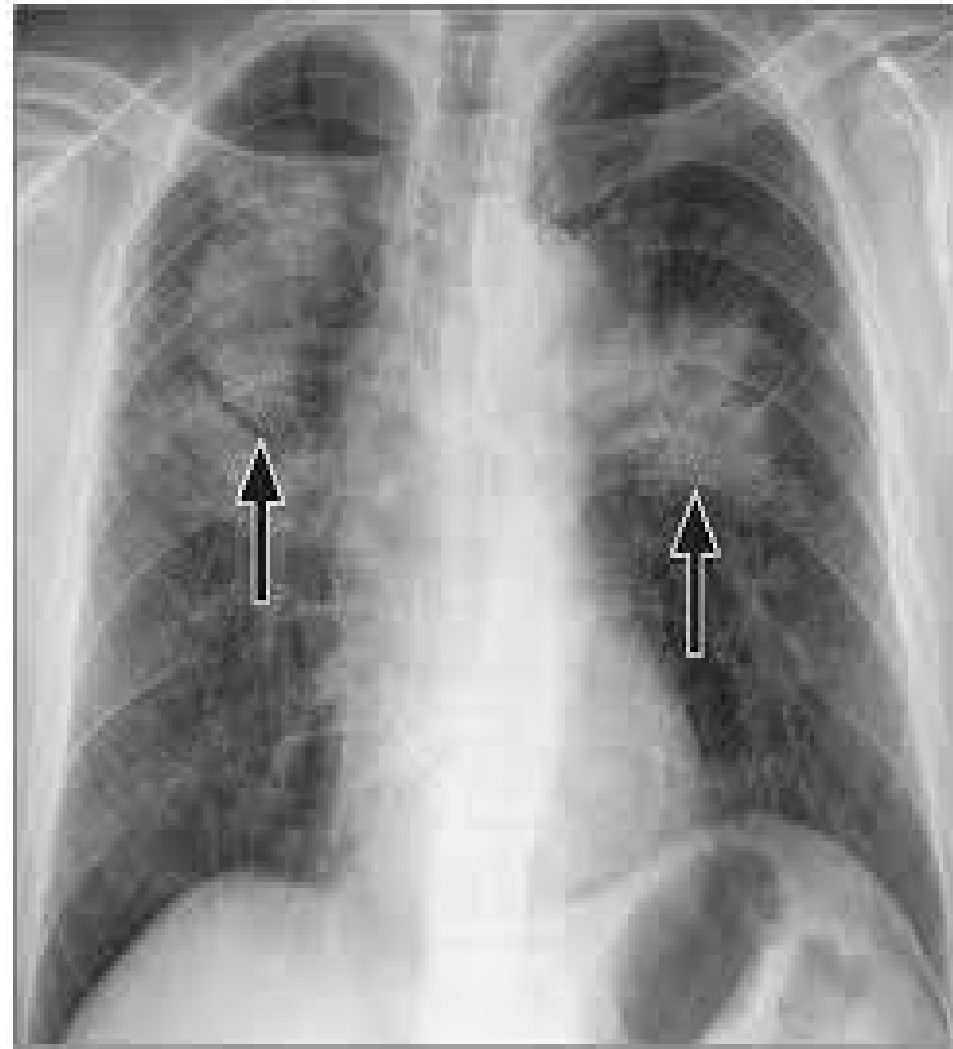
It's seen in individuals works in contact with silica like workers in glass and pottery making and sandblasting .



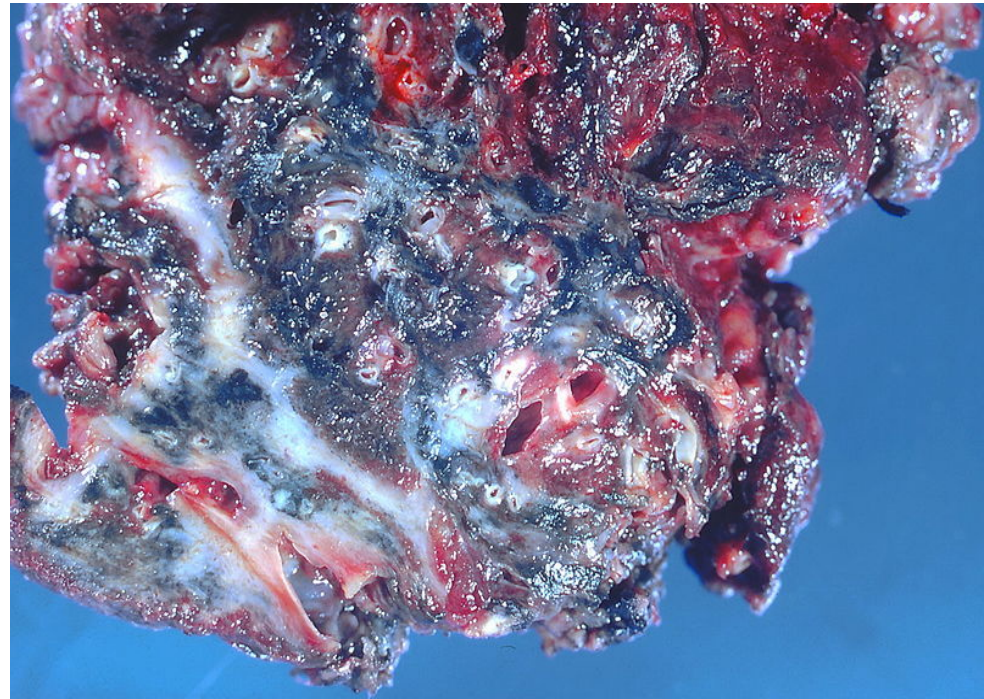
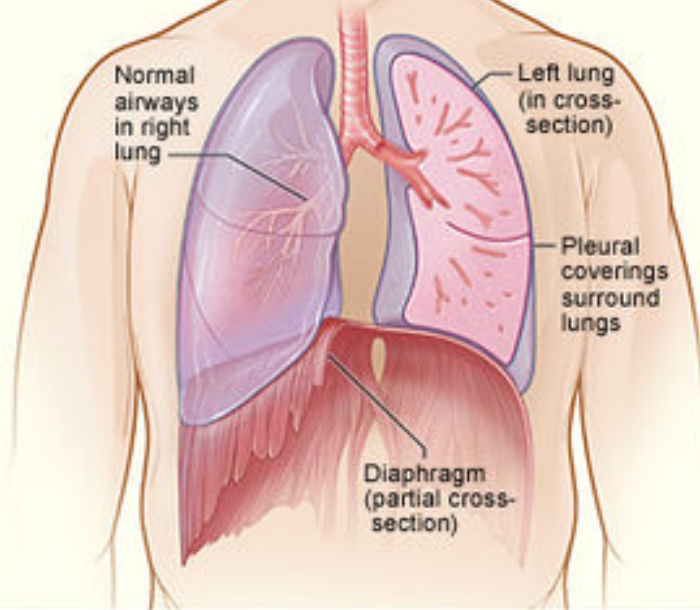


## Chest X ray

There are three nodules (1-10mm ) seen throughout the lungs that are most prominent in the upper lobes. Rarely a characteristic finding is **eggshell calcification** . In progressive massive fibrosis , densities are 10 mm or more and form large masses .



**A** Normal lungs



**B**

**Lungs with asbestos-related disease**

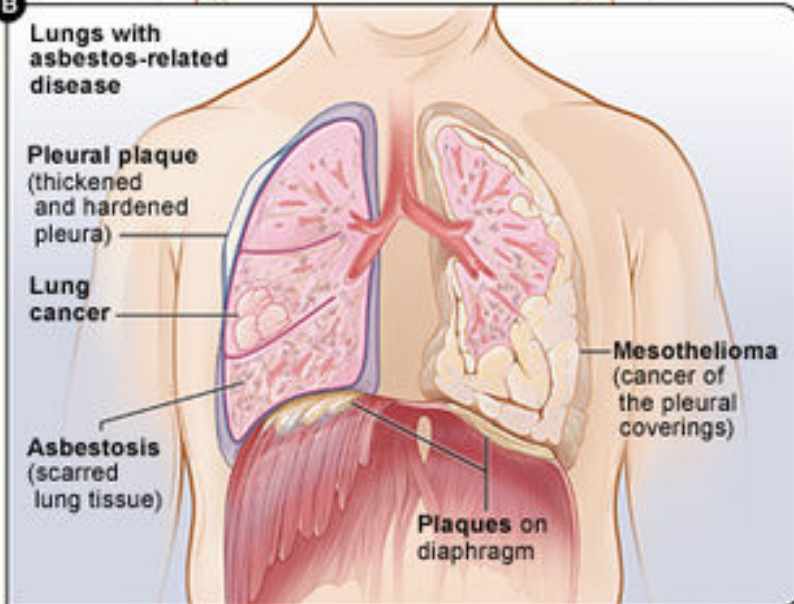
Pleural plaque (thickened and hardened pleura)

Lung cancer

Asbestosis (scarred lung tissue)

Plaques on diaphragm

Mesothelioma (cancer of the pleural coverings)



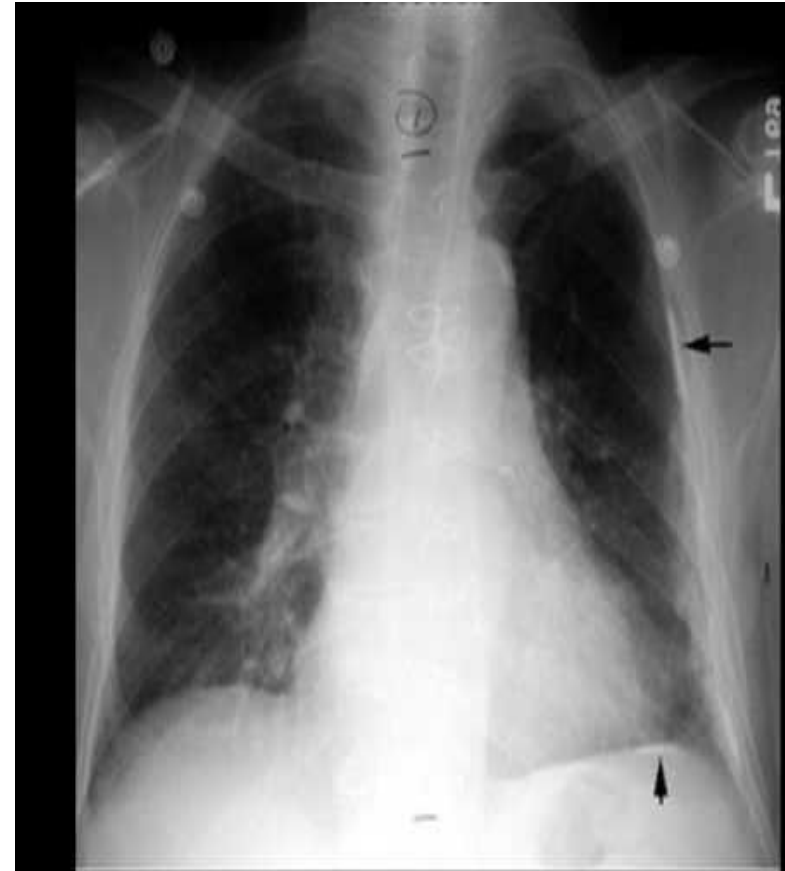
Extensive fibrosis of pleura and lung parenchyma."

# Cest X ray

- 1- diffuse or local thickening
- 2- pleural plaques(The presence of pleural plaques may provide supportive evidence of causation by asbestos)
- 3- calcification

Are seen at the level of the diaphragm .

Plural effusion are commonly seen and interstitial lung process associated with asbestosis usually involves the lower lung fields .



- ▶ purpura and petechial haemorrhages in the skin and mucous membranes





- ▶ splinter haemorrhages under the fingernails or toe nails.



- Osler's nodes are painful tender swellings at the fingertips that are probably the products of vasculitis ; they are rare.



- ▶ Digital clubbing is a late sign



**Subconjunctival haemorrhages**  
(2-5%)



**Cerebral emboli**  
(15%)

**Roth's spots in fundi**  
(rare, < 5%)

**Petechial haemorrhages on mucous membranes and fundi**  
(20-30%)

**Poor dentition**

**Splenomegaly**  
(30-40%, long-standing endocarditis only)

**'Varying' murmurs**  
(90% new or changed murmur)

**Conduction disorder**  
(10-20%)

**Cardiac failure**  
(40-50%)

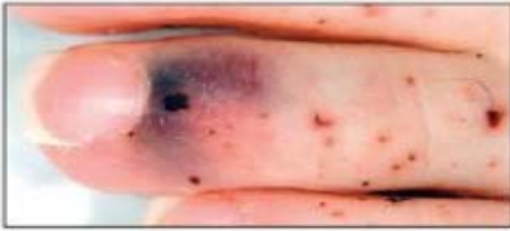
**Haematuria**  
(60-70%)

**Osler's nodes**  
(5%)

**Petechial rash**  
(40-50%, may be transient)



**Systemic emboli**  
(7%)  
Nail-fold infarct

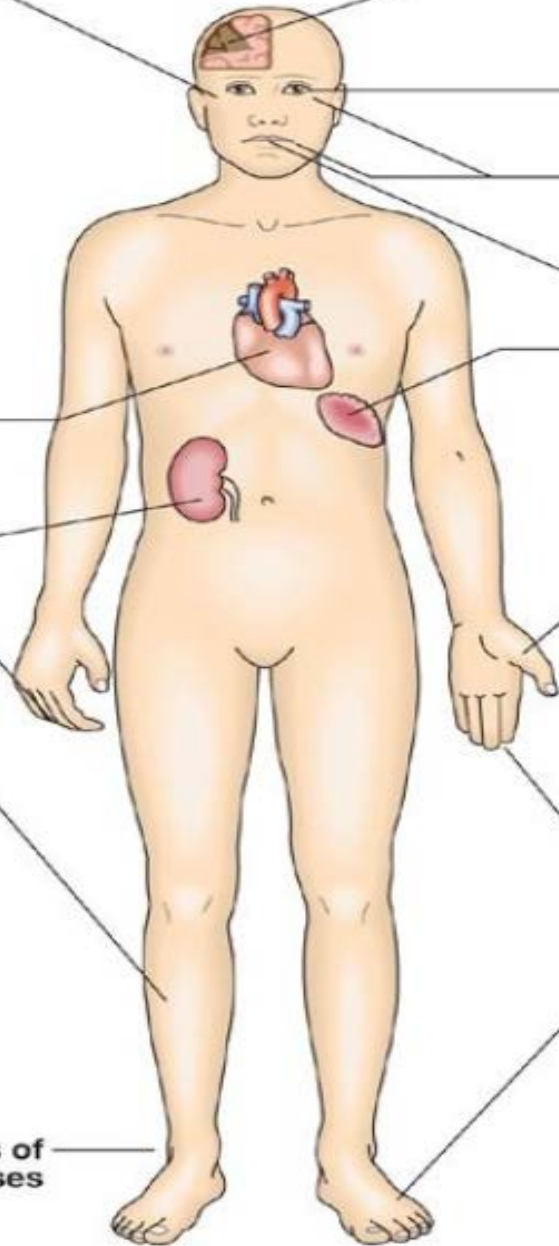


**Digital clubbing**  
(10%, long-standing endocarditis only)

**Splinter haemorrhages**  
(10%)



**Loss of pulses**



Colledge et al: Davidson's Principles and Practice of Medicine, 21st Edition  
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**Figure 18.93 Clinical features which may be present in endocarditis.**



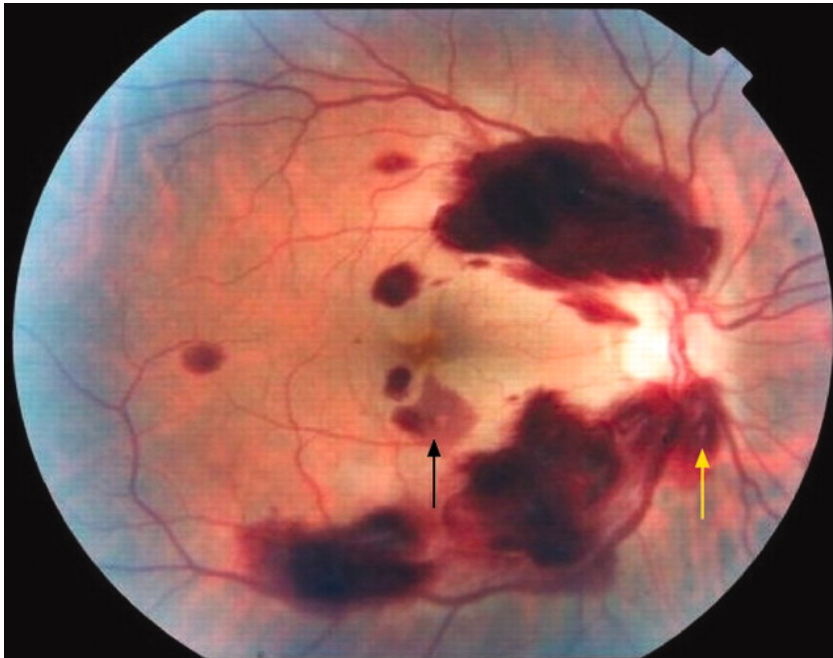
# JANEWAY LESIONS

- Septic emboli with bacteria, neutrophils, hemorrhage and necrosis
- Erythematous, blanching macules
- Not painful
- Located on palms and soles



# ROTH SPOTS

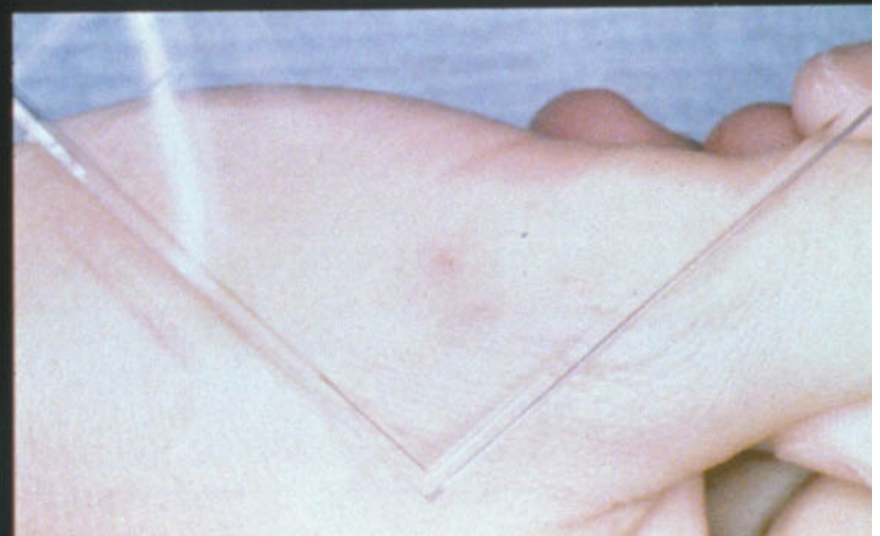
Retinal haemorrhage with white/pale centers composed of coagulated fibrin.



# Palmer erythema



# Spider naevi

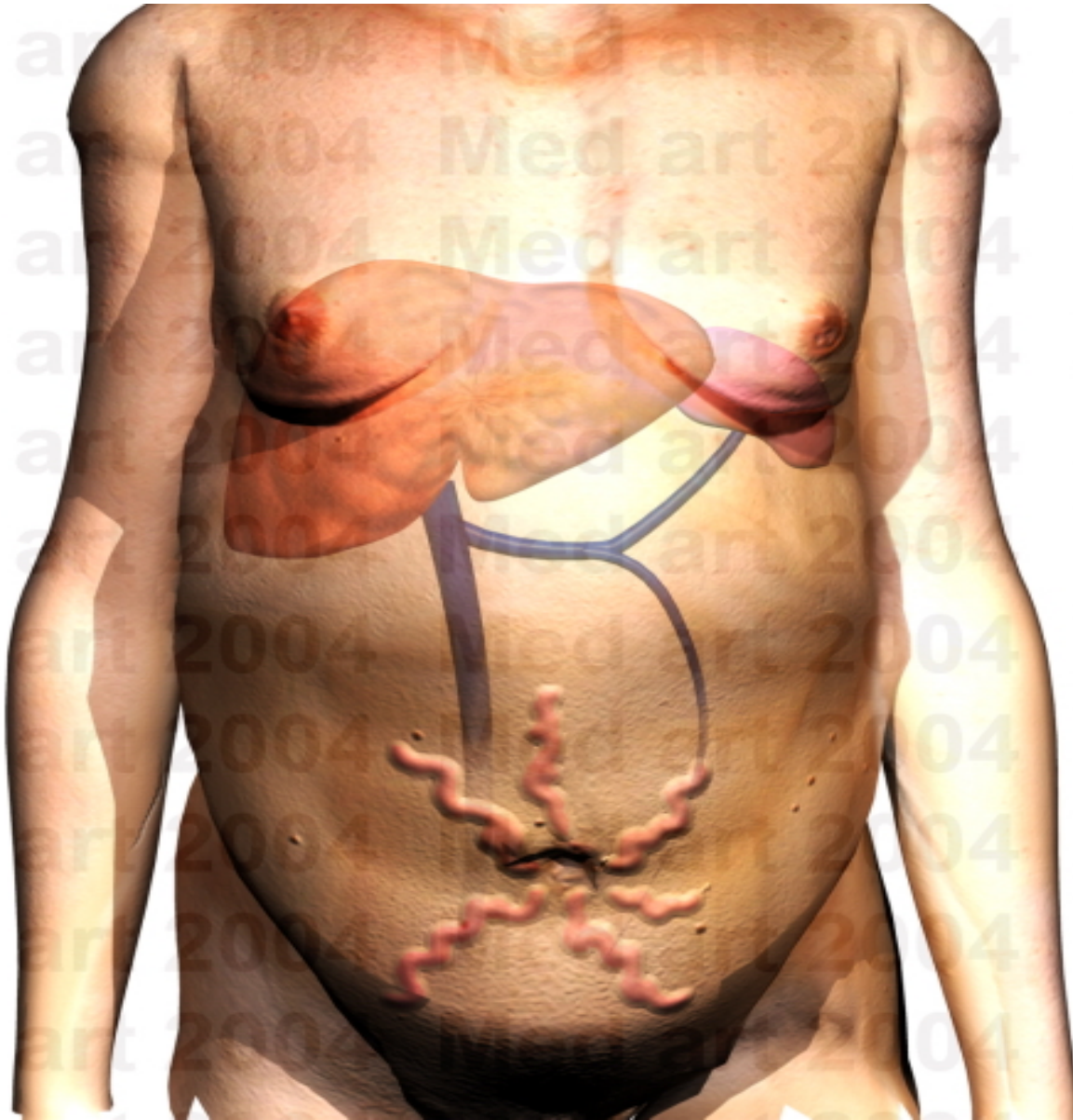






# *Caput medusa*

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<http://www.mediamed-online.com/>



# Clinical Manifestations

- Terry's nails



Muehrcke's

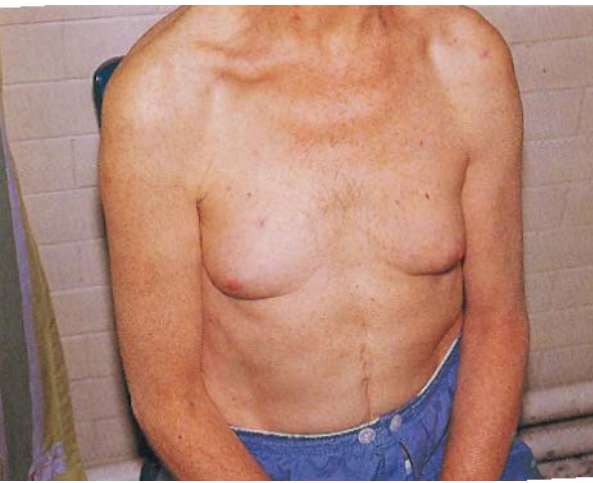


# Sign and symptom of cirrhosis

- Dupuytren's contracture of the ring finger







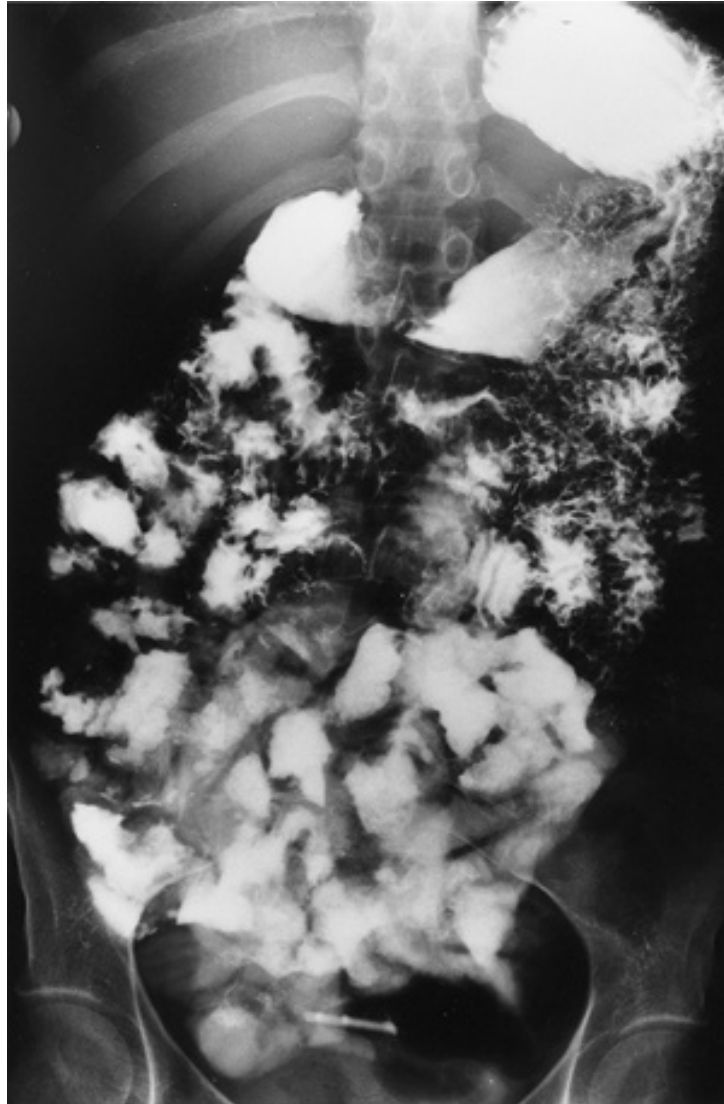
Sign of liver disease



# Barium flow through (normal)



# Barium flow through in gluten mal.

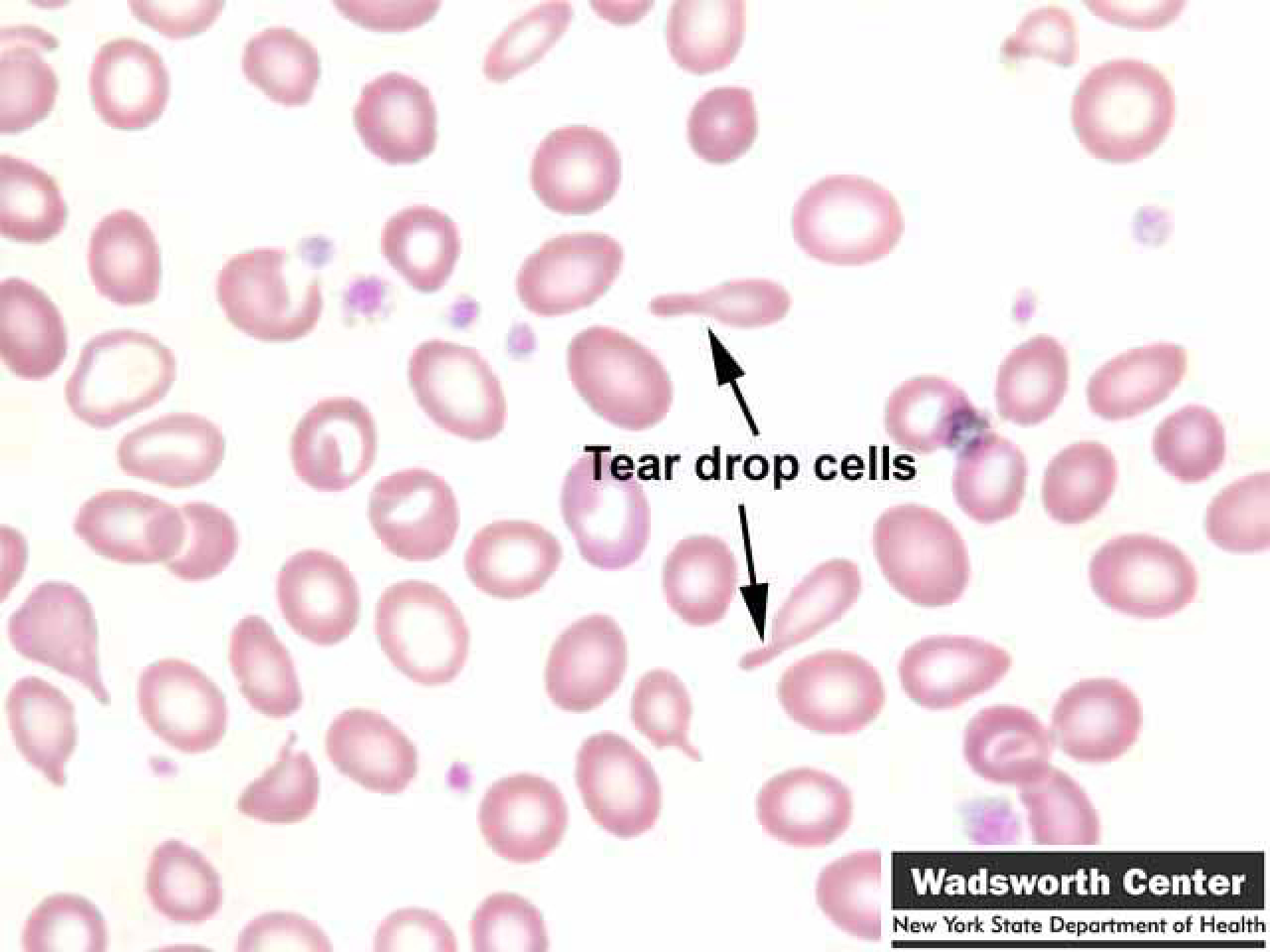


# Myelofibrosis

Definition: is B.M disorder that disturpt your body normal production of blood cells and scar ( fibrosis) formation in B.M.

Leading to severe anemia,fatigue,weakness, and spleenomegaly.





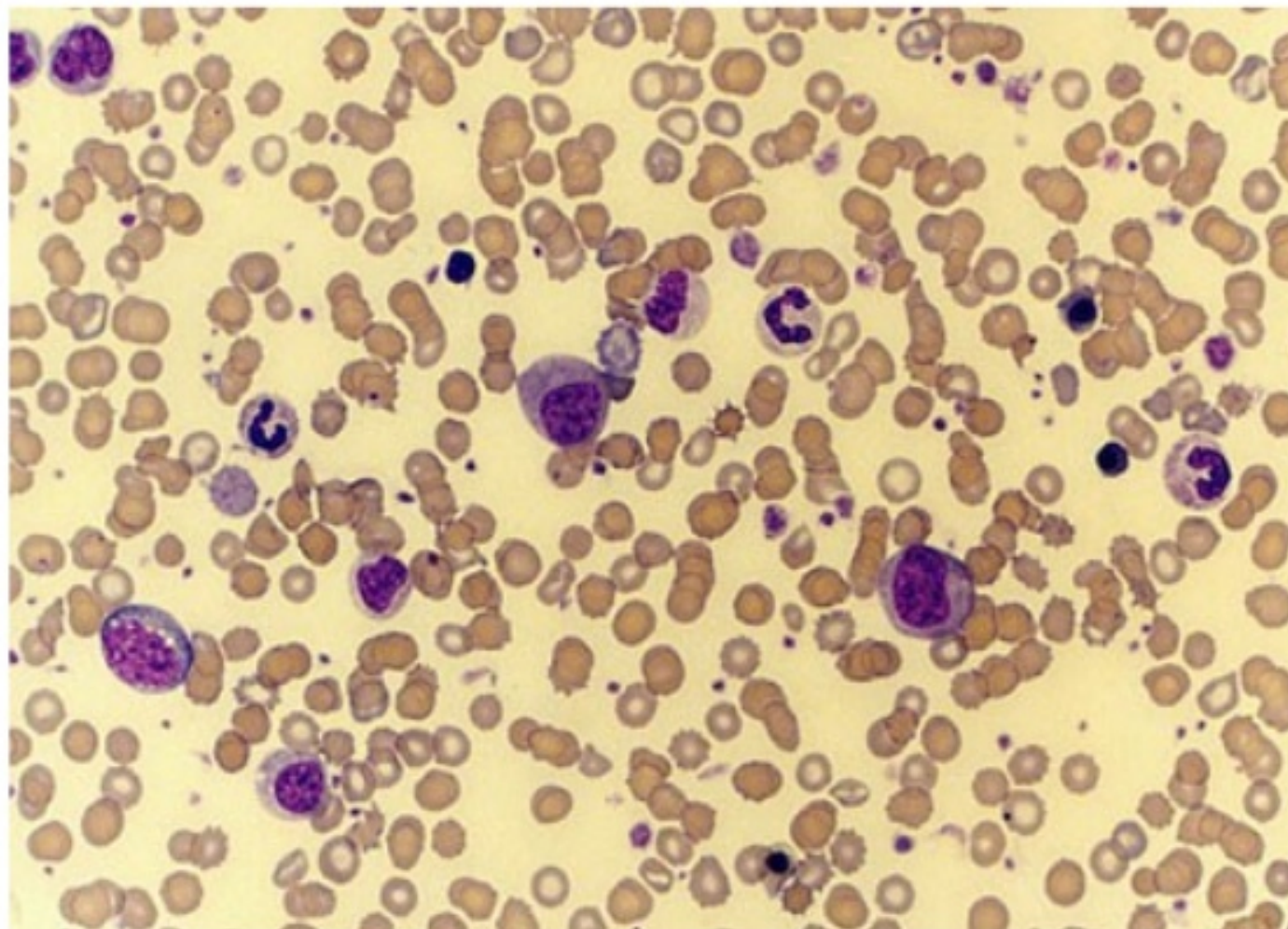
**Tear drop cells**

**Wadsworth Center**

New York State Department of Health

# Myelofibrosis showing Leukoerythroblastic reaction

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# Limb artery disease

- Limb artery disease classified as:
  - Chronic limb ischemia .
  - Acute limb ischemia .



# *Symptoms*

○ 3 phases:

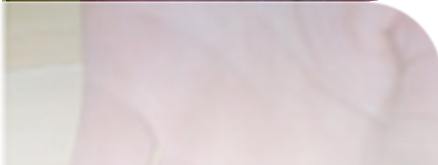
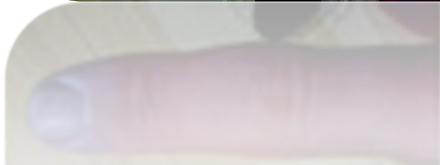
- vasoconstriction causes *skin pallor*
- followed by *cyanosis* due to sluggish blood flow, increased deoxygenation of static venous blood
- then *redness* secondary to hyperaemia.

○ The duration of the attacks is variable but they can sometimes last for hours.

○ Numbness, a burning sensation and severe pain occur as the fingers warm up.

○ In chronic severe disease, tissue infarction and digital loss can occur.





**Cellulites** and ruptured **baker's cyst** both are coexist with DVT

DVT in legs occur in **50%** of patient after **prostactomy**(without heparin prophylactic )

10% of MI have clinically detected DVT

superficial and deep thrombosis **axillary** vein may occur as a result of **trauma**

**Pulmonary embolism** can occur with any DVT but is more frequent from an **illiofemoral** thrombosis ,and is rare with thrombosis confined to veins below the knee



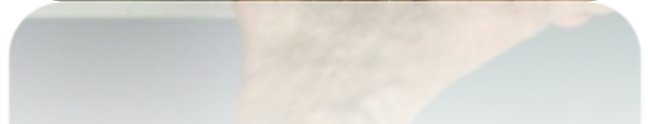
# Varicose veins

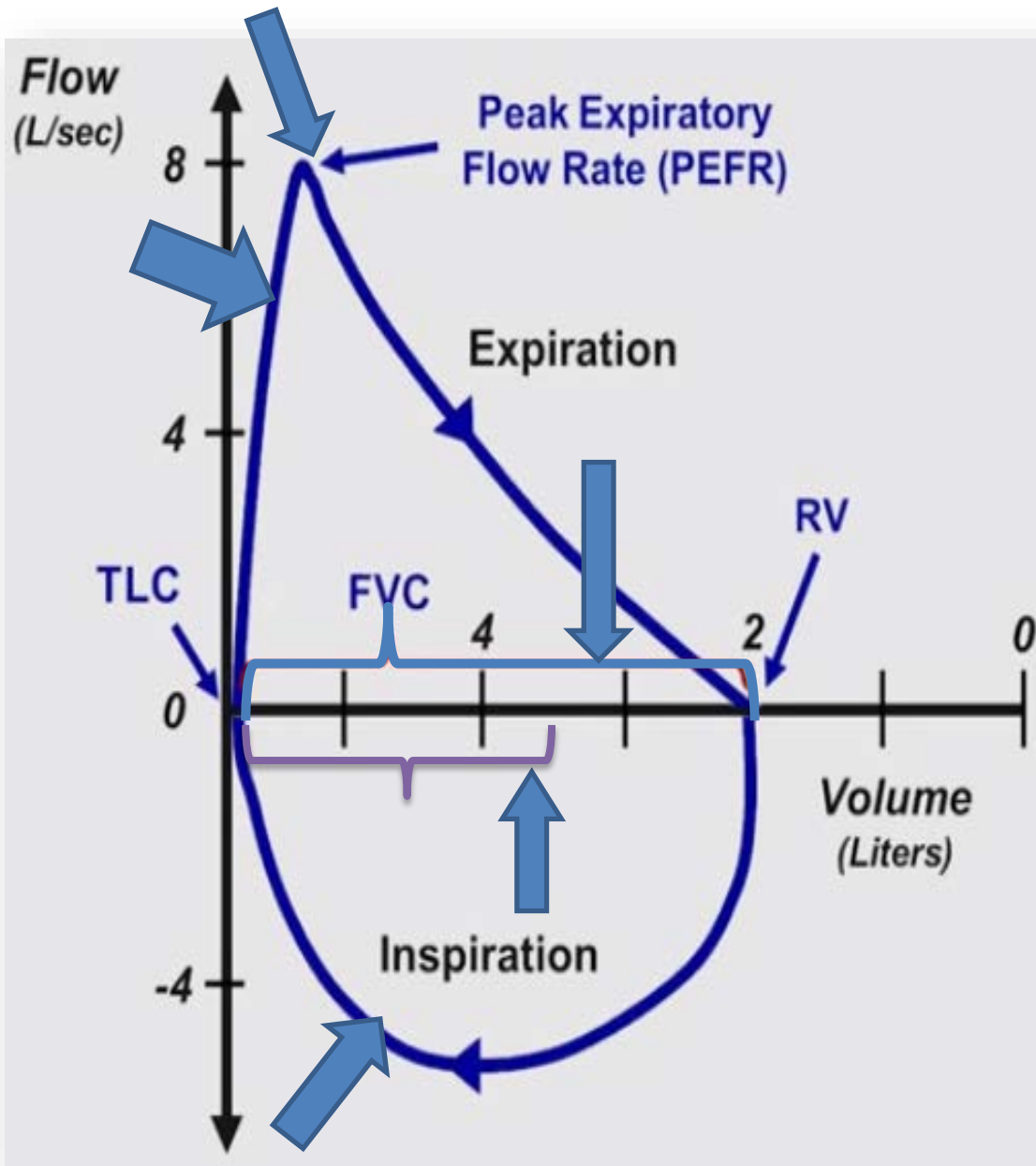
## *Definition:*

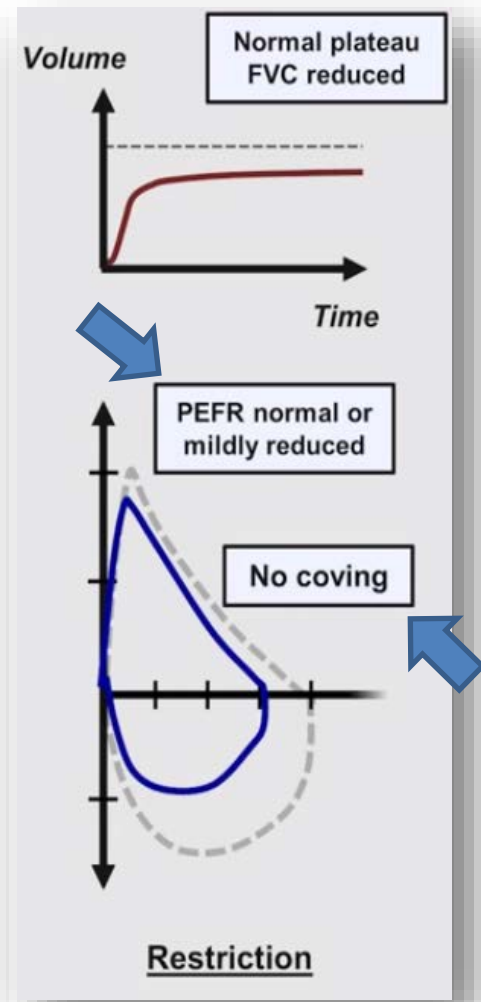
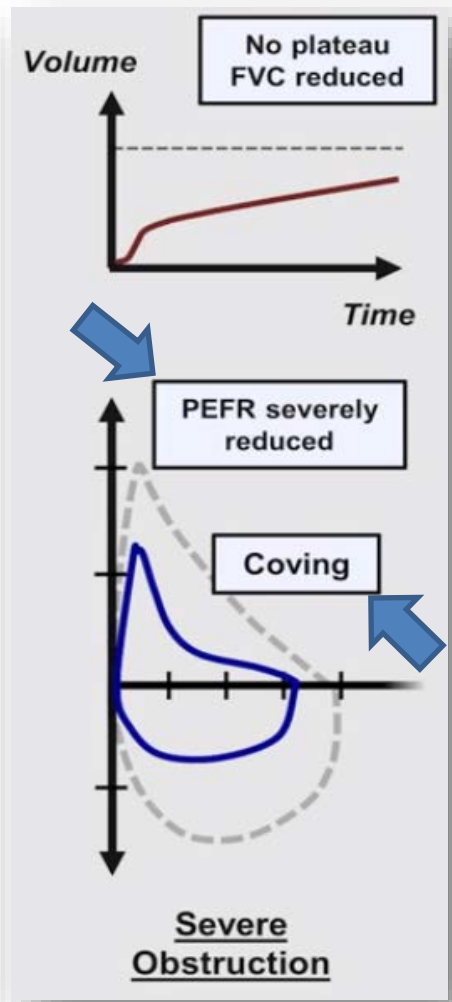
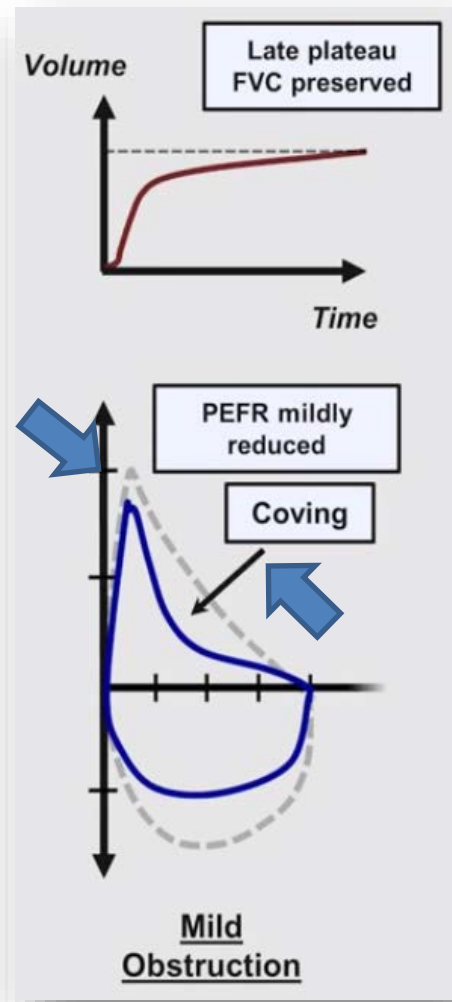
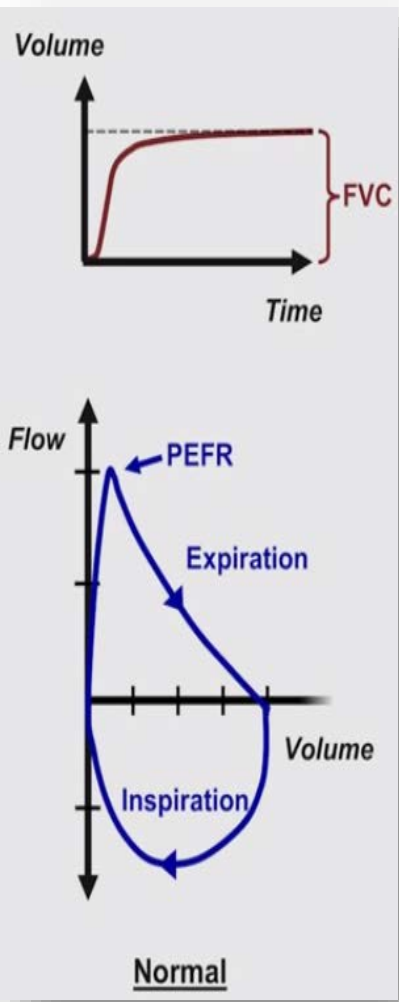
Varicose veins are dilated, tortuous superficial veins that result from:

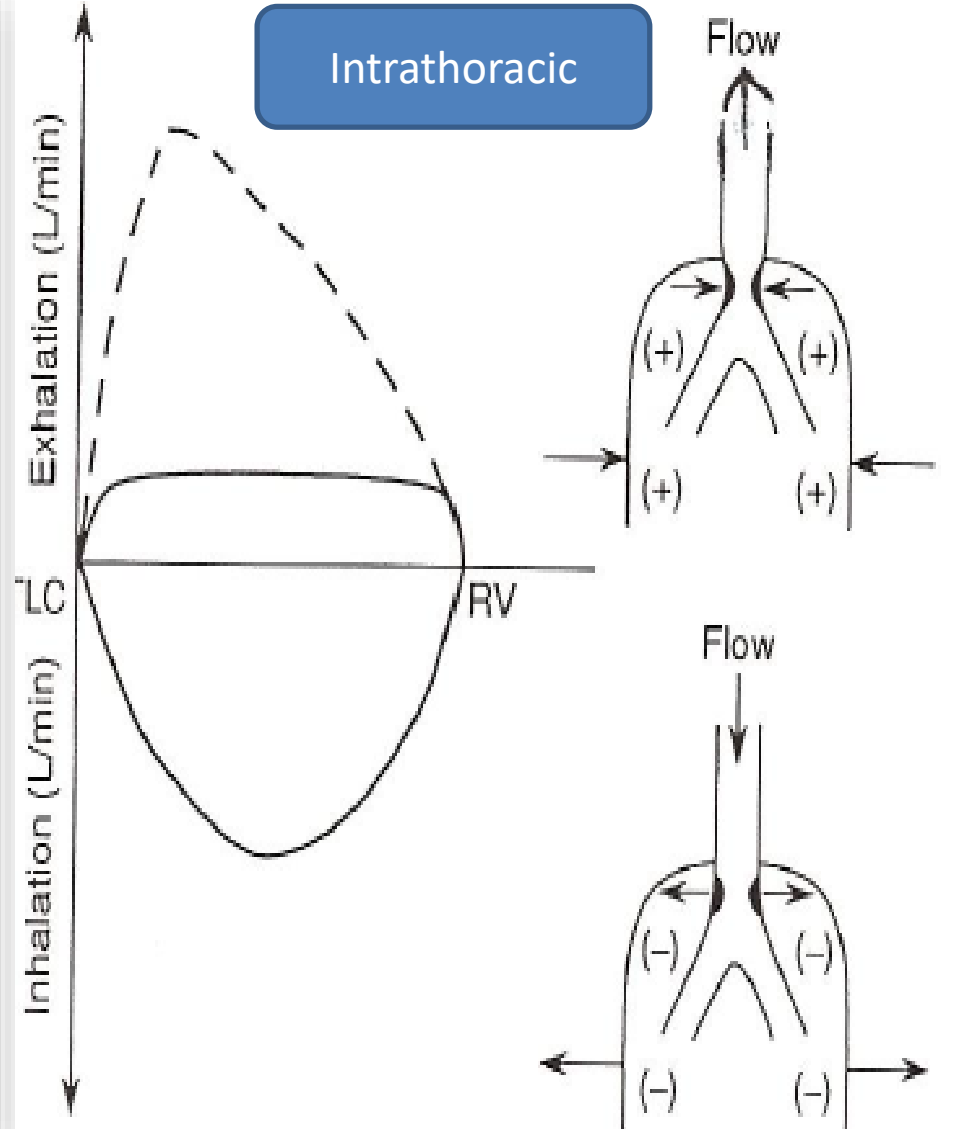
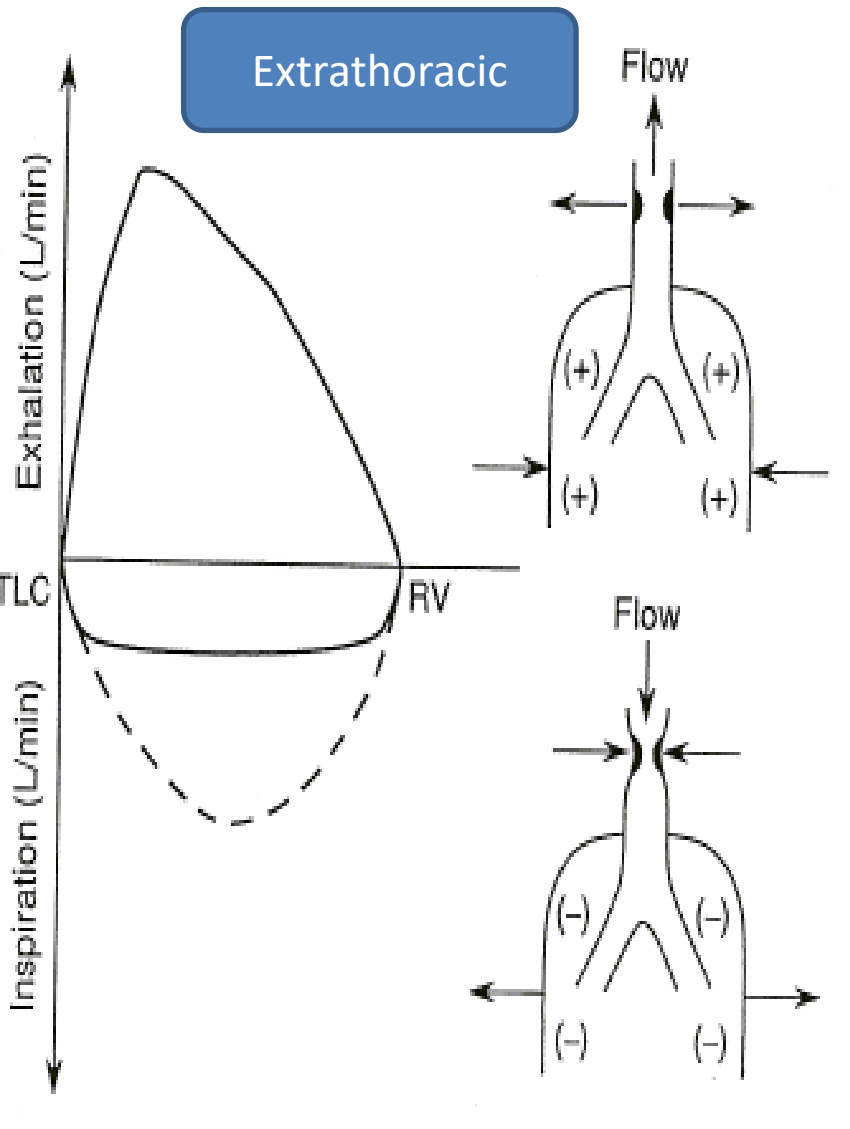
- Defective structure and function of the valves of the saphenous veins.
- Intrinsic weakness of the vein wall.
- High intraluminal pressure.













**Tracheomalacia >>**  
 is a condition characterized by flaccidity of the tracheal support cartilage

Ex.

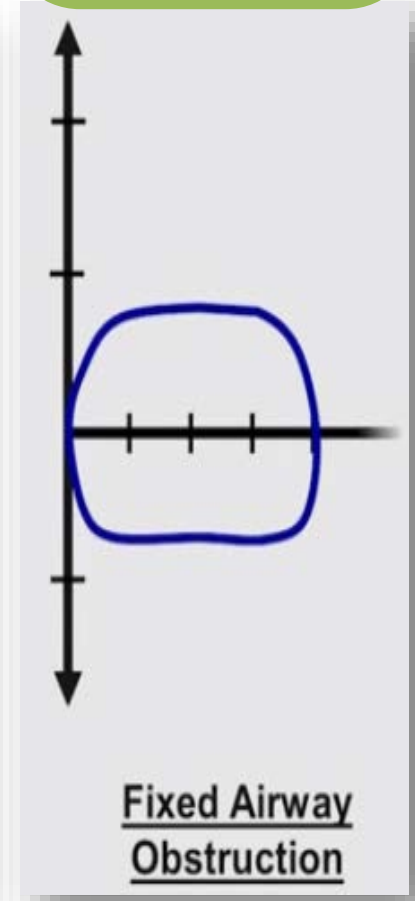
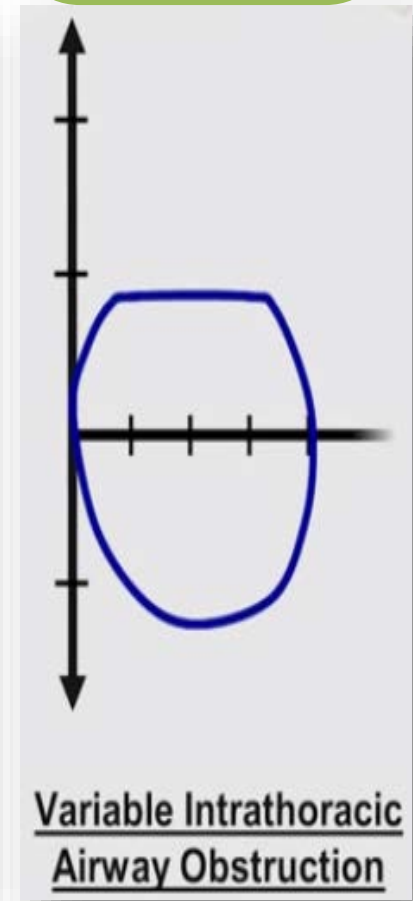
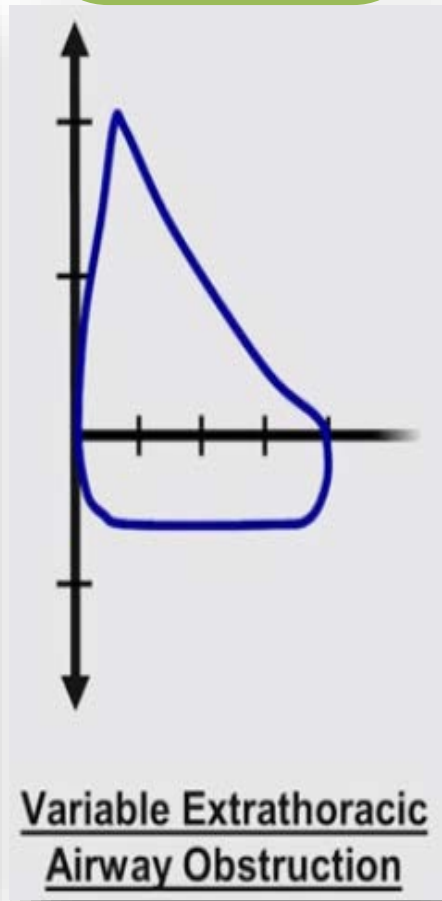
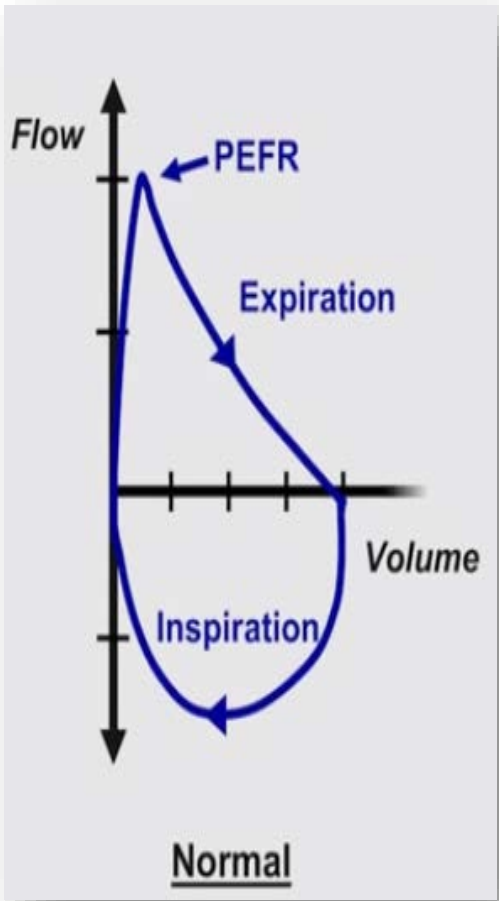
@Vocal cord paralysis  
 @Tracheomalacia  
 @Airway tumor

Ex.

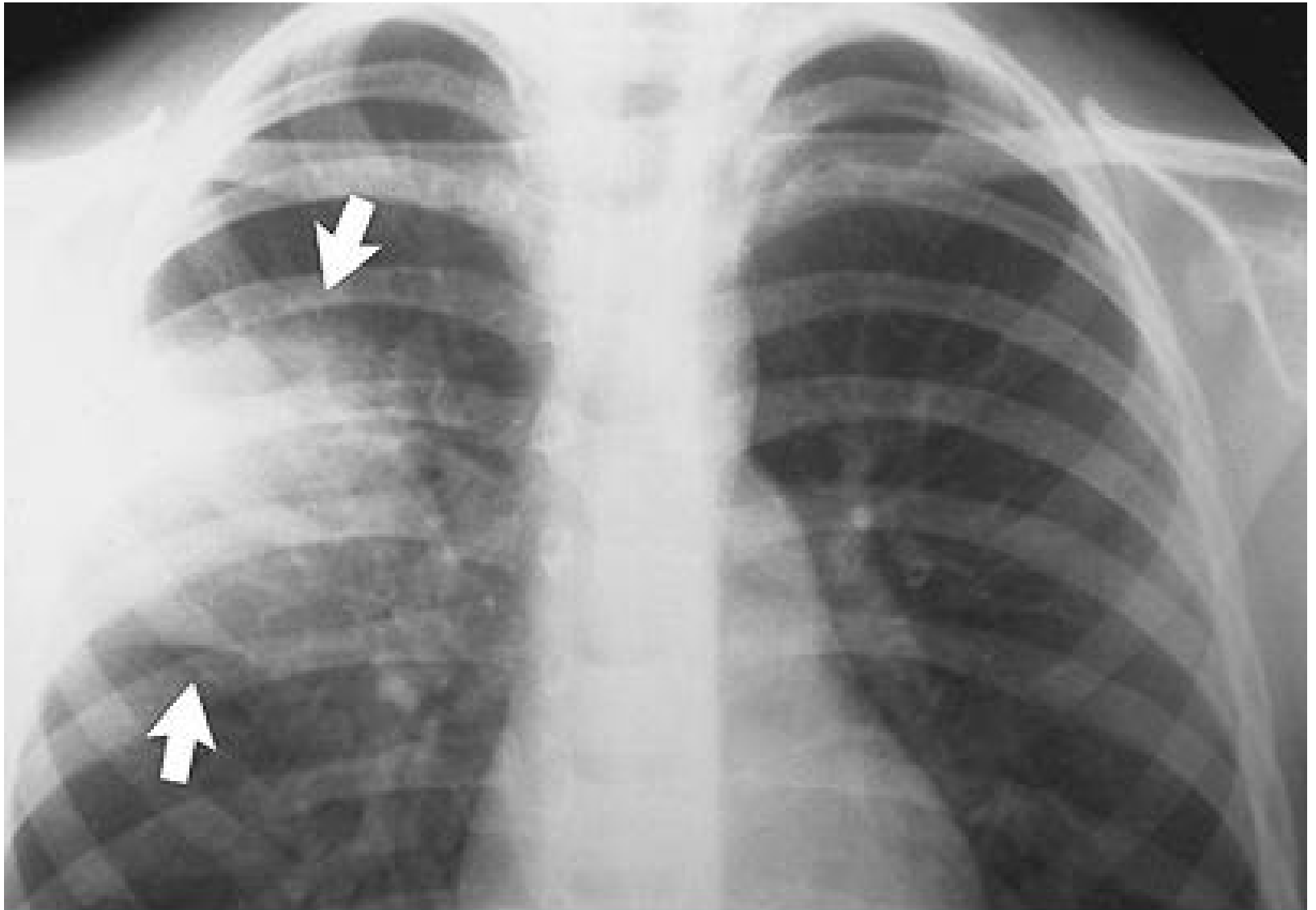
@Tracheomalacia  
 @Airway tumor

Ex.

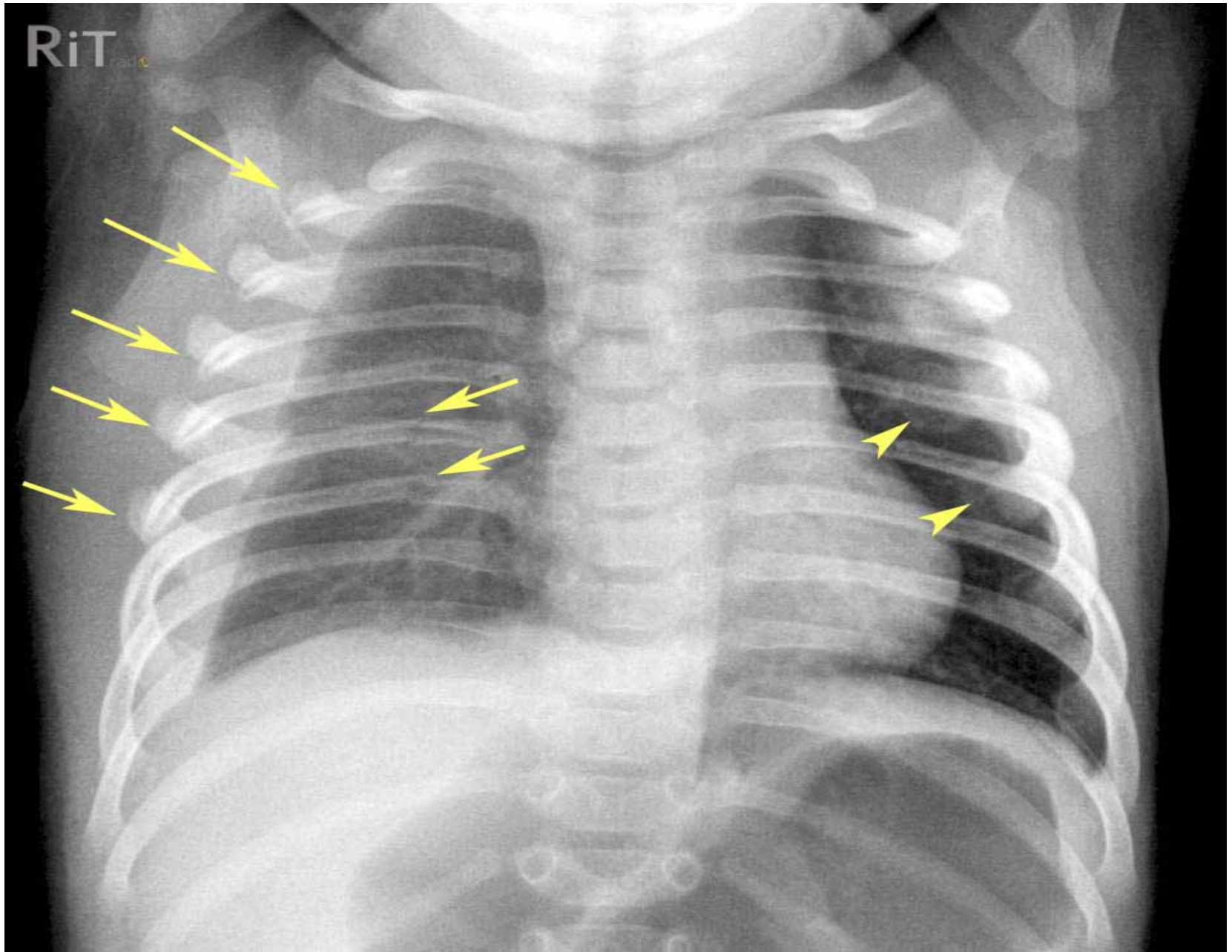
@Tracheal stenosis  
 @Goiter  
 @Airway Tumor



An area of inflammation in the lungs that indicates pneumonia

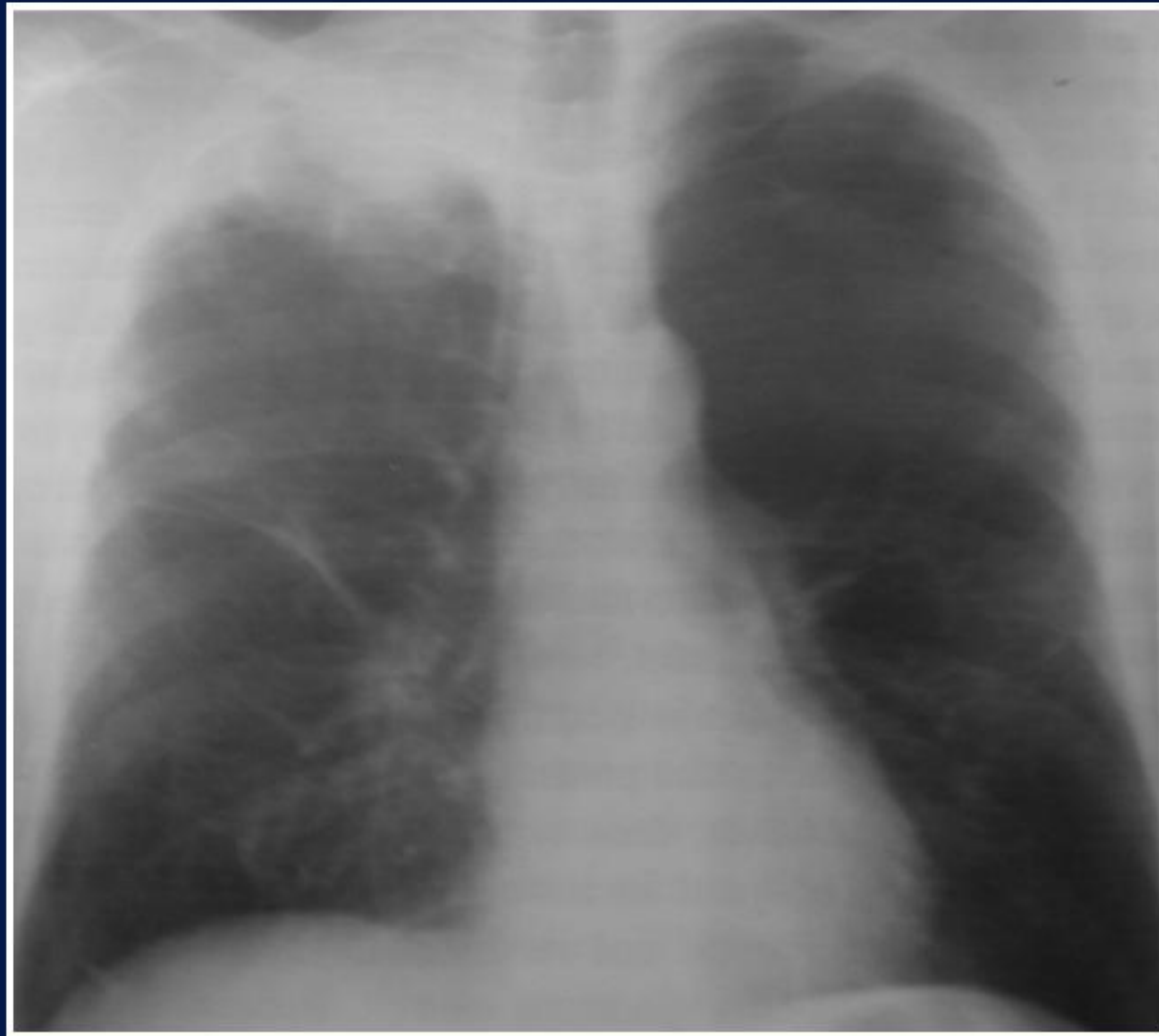


# multiple bilateral rib fractures



# Right-sided Pancoast Tumor on Chest X-ray

---





# Asbestosis

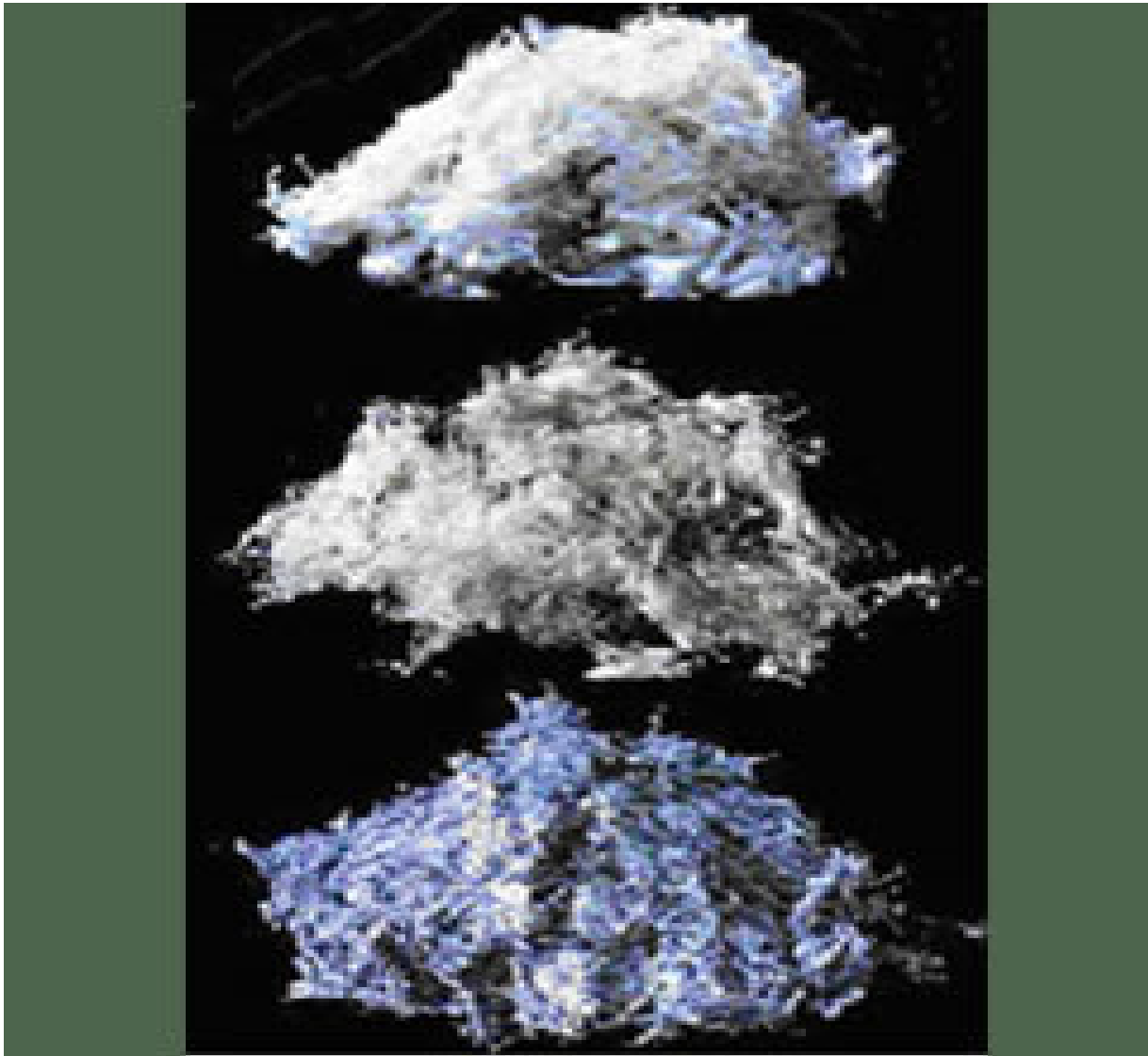
Asbestos is a mixture of silicates of iron, magnesium, nickel, cadmium and aluminium, and has the unique property of occurring naturally as a fibre.

There is many type of asbestos ; white ( chrysotile) , brown (amosite) and blue ( crocidolite ) .

Blue ( crocidolite ) exists in straight fibres up to 50 mm in length and 1–2  $\mu\text{m}$  in width. It is the type of asbestos most likely to produce asbestosis and mesothelioma.

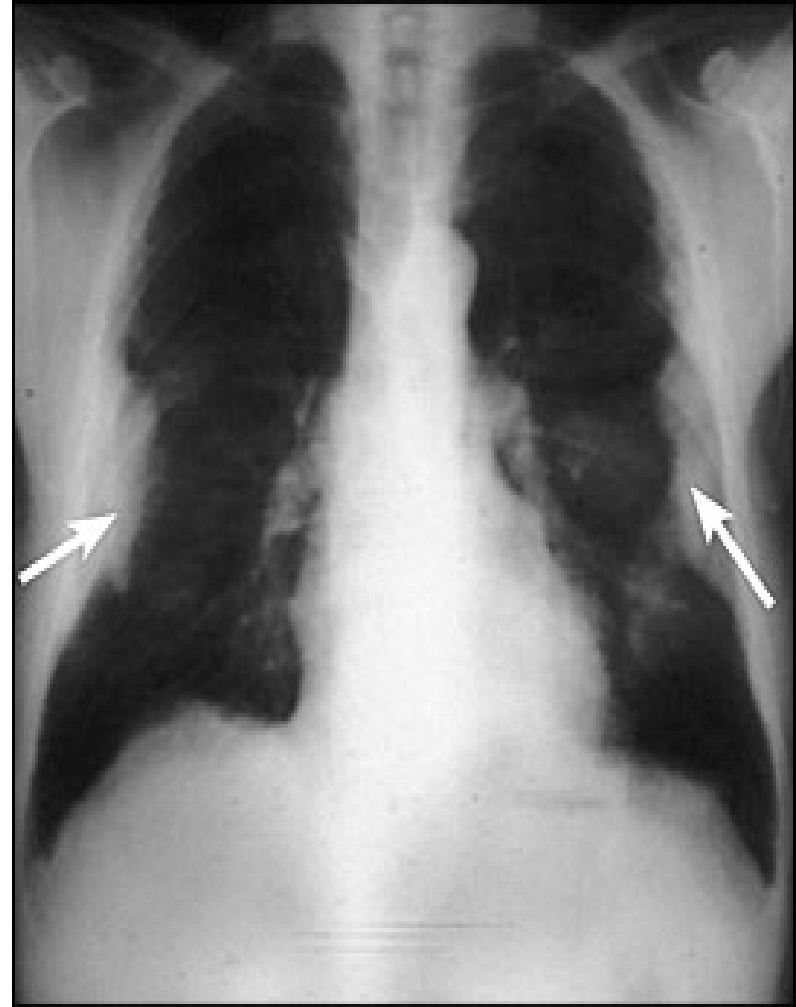
This may be due to the fact that it is readily trapped in the lung. Its long, thin shape means that it can be inhaled but subsequent rotation against the long axis of the smaller airways, particularly in turbulent airflow during expiration, causes the fibres to impact.

Crocidolite is also particularly resistant to macrophage and neutrophil enzymatic destruction.



# Benign pleural plaques

- Common
- Usually symmetrical
- Asymptomatic
- No evidence they are premalignant
- No need to follow up
- With time it become calcify making them more obvious on X-ray



# Benign pleural effusions

- Early manifestation of pleural disease
- Usually small and unilateral
- Resolve spontaneously
- Blood stained exudate
- Must exclude mesothelioma
- Present with feature of pleurisy ( pleural pain , fever , leukocytosis )





# Diffuse pleural thickening

- Extensive fibrosis of **visceral pleura** with adhesion to parietal pleura
- if sufficiently extensive it may restrict chest expansion and cause breathlessness
- On X-ray show thickening of the pleura along chest wall with obliteration of costophrenic angle
- On occasion shrinkage of the pleura cavity result in **rounded atelectasis** which has appearance of a mass near the pleura , this may confuse with a tumour .



# Mesothelioma

is primary malignant tumour of the pleura with high incidence in UK

arise from the mesothelial cells that line the pleural cavities..

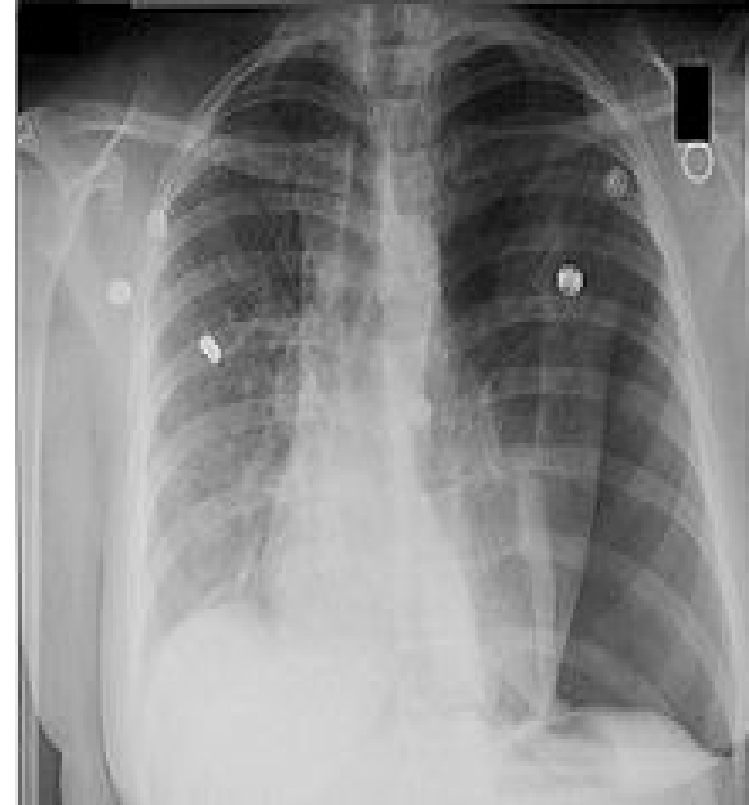
Clinical manifestation: mostly between the ages of 40 – 70 years, insidious onset of chest pain, usually non pleuritic or shortness of breath, hacking cough, some irregular episode of low grade fever, for several month.

Management: surgical treatment, chemotherapy and radiotherapy.



# 2-chest X-ray

- Chest X-ray of left-sided pneumothorax .The left thoracic cavity is filled in part with free air. The mediastinum is shifted to the opposite side.
- Traditionally a plain radiograph of the chest, ideally with the X-ray beams being projected from the back (posteroanterior), has been the most appropriate first investigation. Usually, these are performed in inspiration.
- If the PA X-ray does not show a pneumothorax but there is a strong suspicion, lateral X-rays (with beams projecting from the side) may be performed.



# 3-Computed tomography

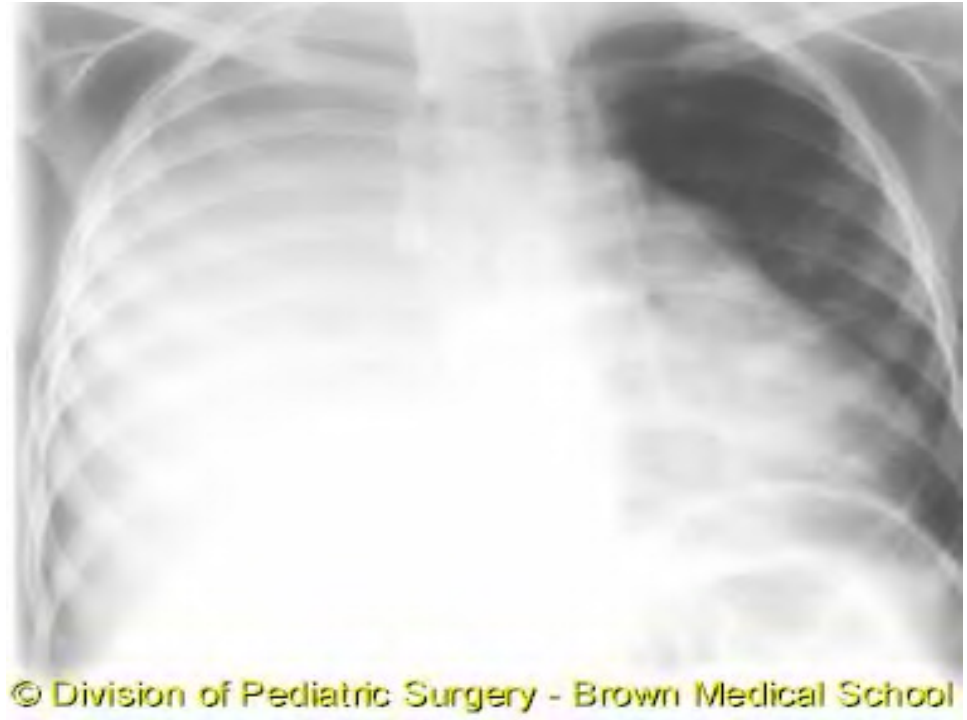
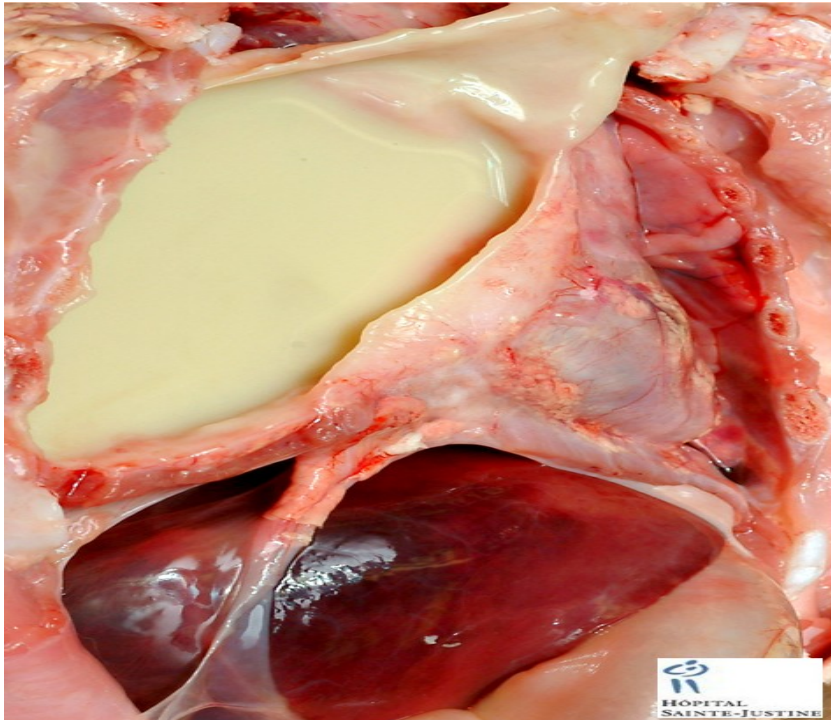
- [Computed tomography](#) (CT) can be useful in particular situations. In some lung diseases, especially emphysema, it is possible for abnormal lung areas such as bullae (large air-filled sacs) to have the same appearance as a pneumothorax, and it may not be safe to apply any treatment before the distinction is made and before the exact location and size of the pneumothorax is determined.
- In trauma, where it may not be possible to perform an upright film, chest radiography is not distinct in 30% of cases, while CT remains very sensitive



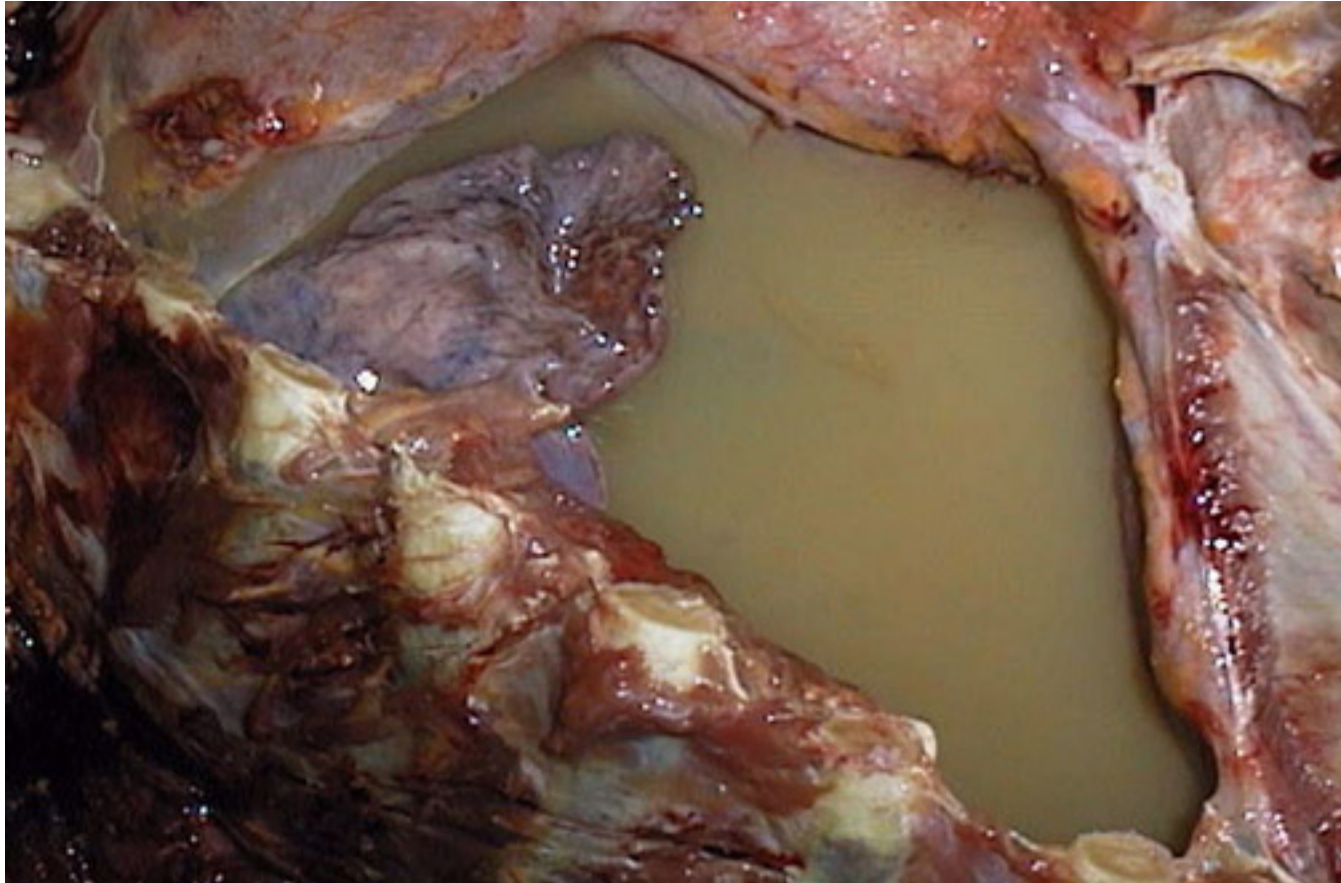


# Empyema

*Accumulation of Pus or microorganisms in the Pleural Cavity”*



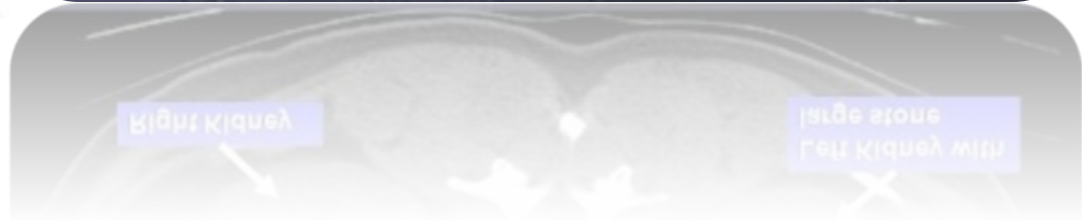
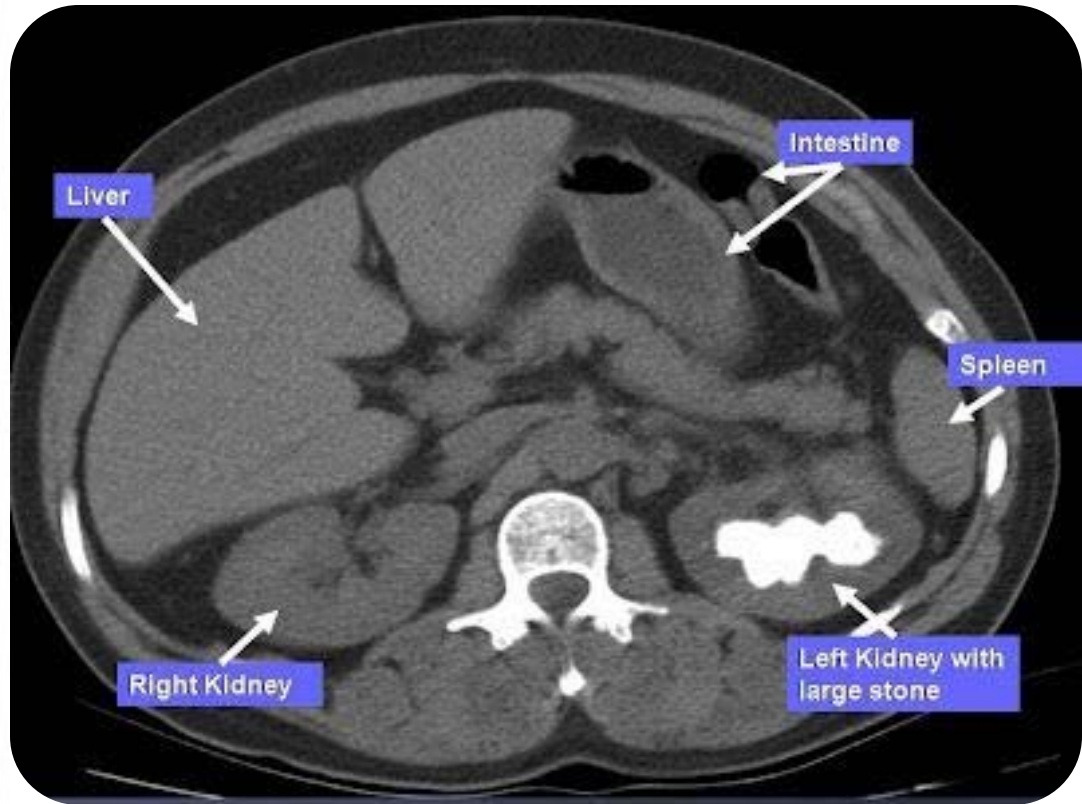
# Chylothorax



# Diagnosis

- diagnosis is difficult to make as it shows similar symptoms of other medical conditions
- **X – ray chest** P A view with the previous history of exposure
- **C T scan or MRI** is usually performed
- **Pleural aspiration** may be performed for laboratory investigation
- A **biopsy** may be needed to confirm a diagnosis of malignant carcinoma

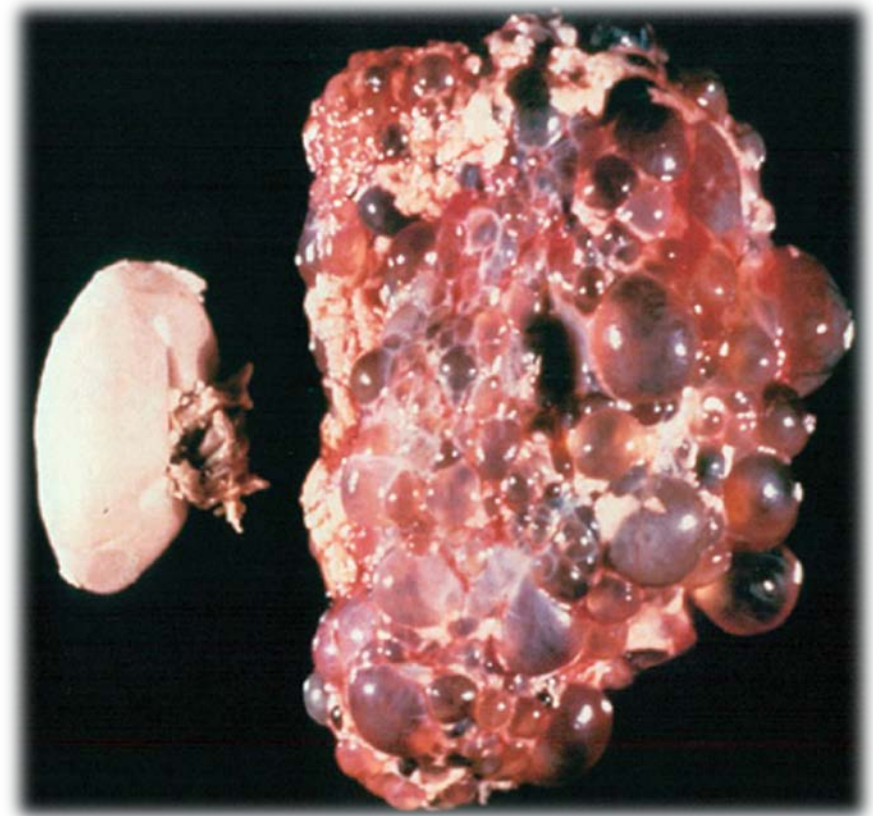






## Polycystic Kidney

A hereditary disease, polycystic kidney can be transmitted by either parent. It may be associated with congenital cysts of the liver, pancreas, and lung. Both kidneys are enormously enlarged and riddled with cysts. Polycystic kidney is thought to be caused by a failure of union between the developing convoluted tubules and collecting tubules. The accumulation of urine in the proximal tubules results in the formation of retention cysts.

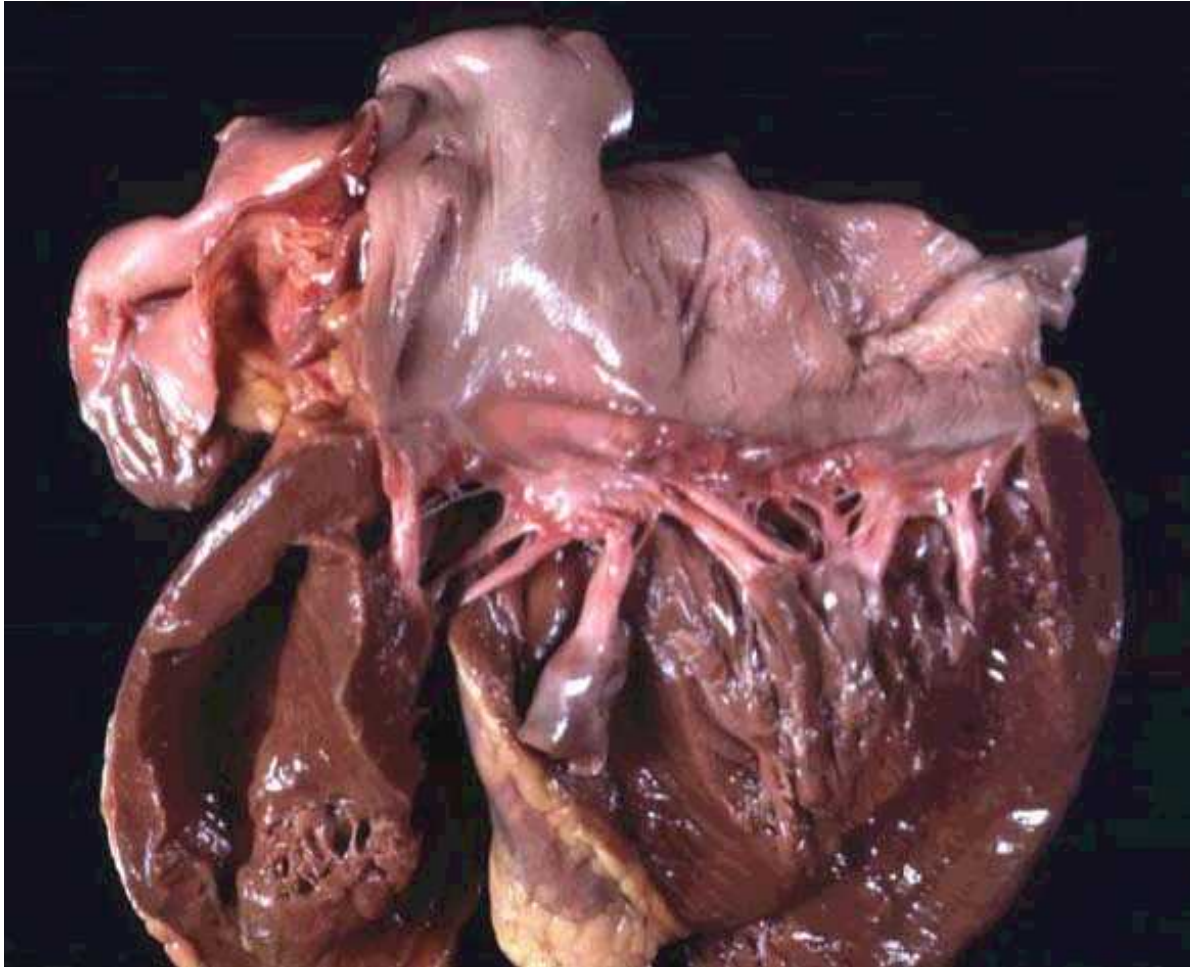






Showing ARTHIRITIS In knee joint

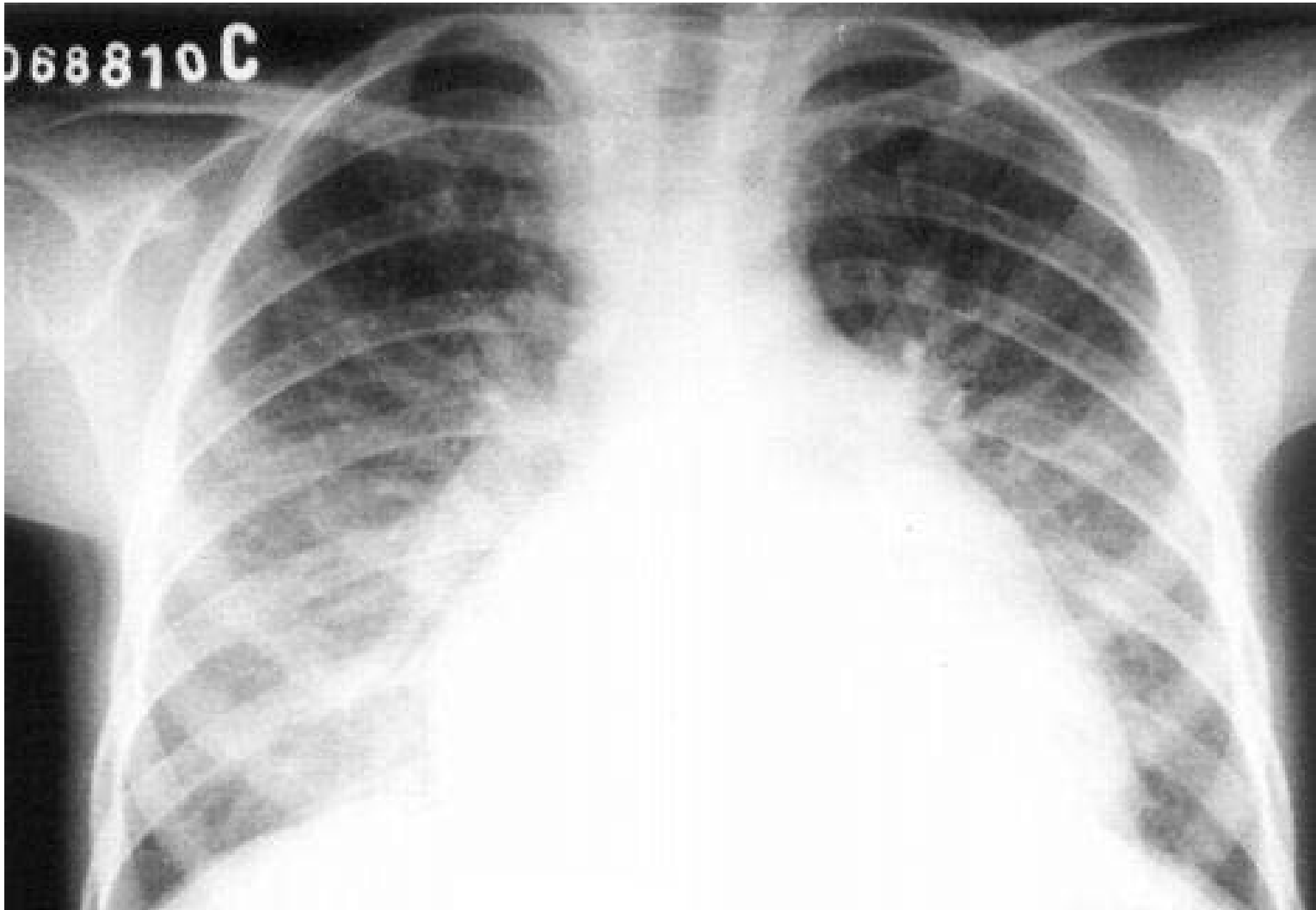
- Damage to a **valve** and/or **chordae**, (which attach the valve to the heart wall) , will mostly affect the **mitral valve** or **aortic valve**.





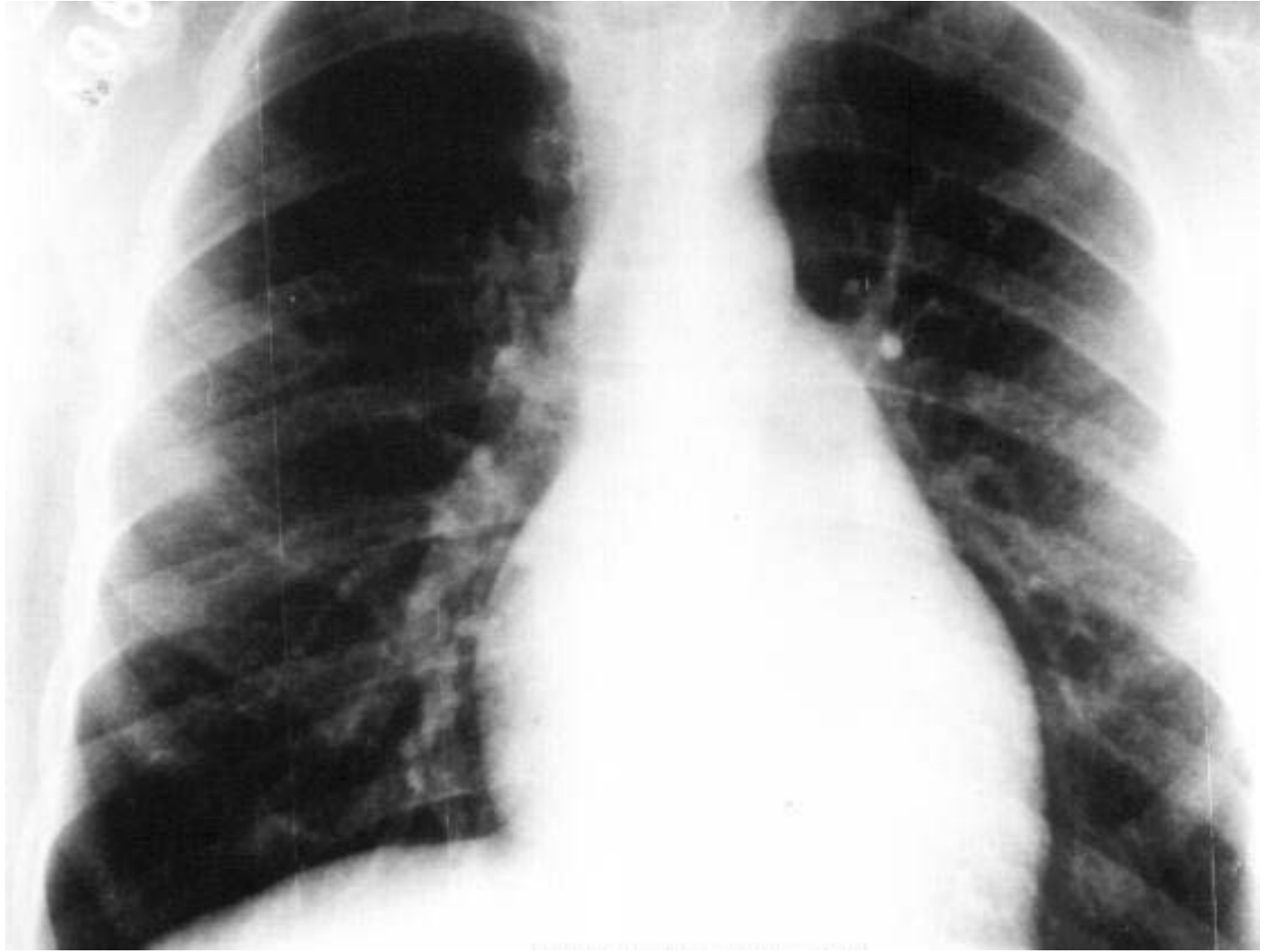
**in Rheumatic  
heart disease**

**Chest radiograph of an 8 year old patient with acute  
carditis  
before treatment**

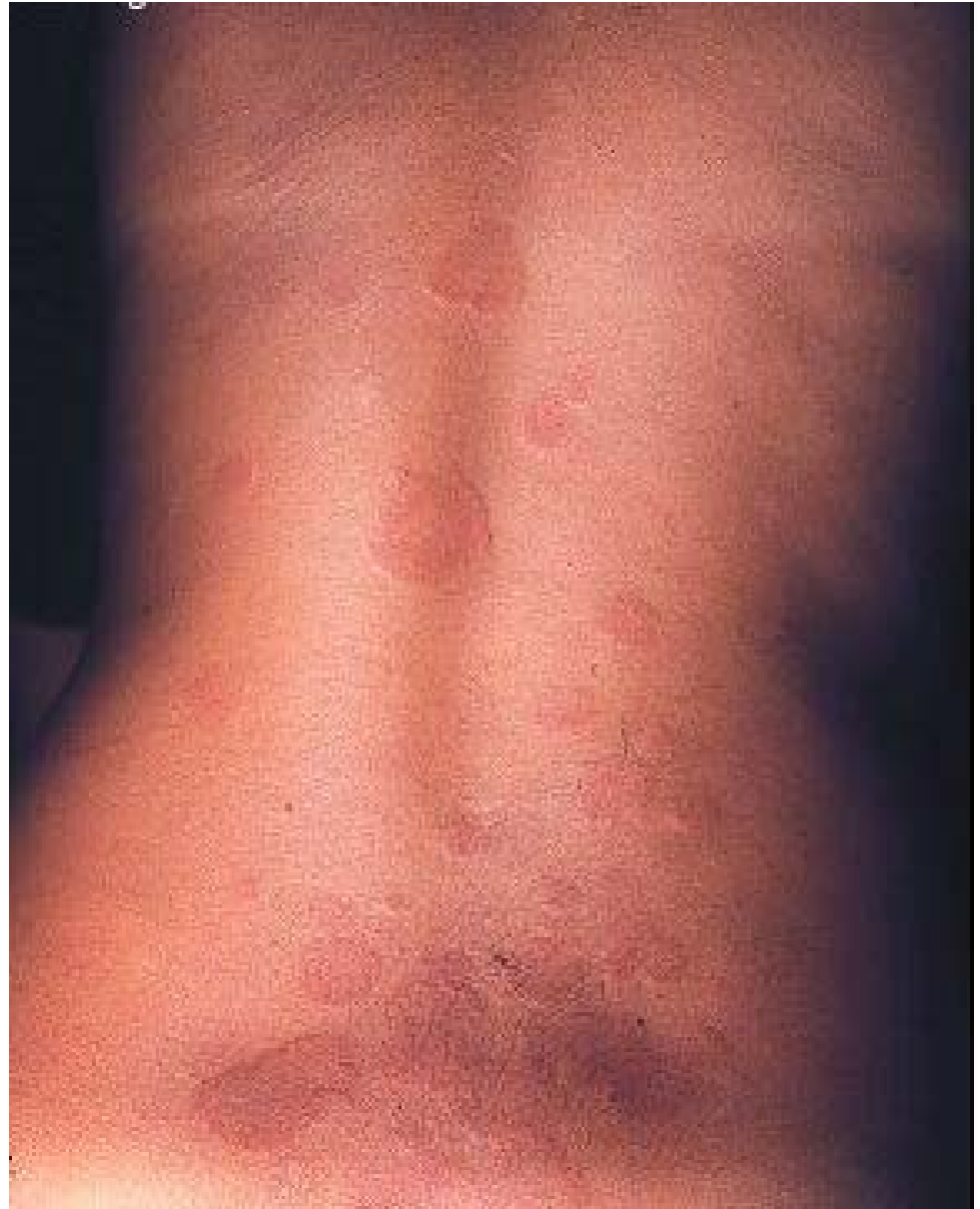




# Same patient after 4 weeks



**Erythema  
marginatum on  
the trunk,  
showing  
erythematous  
lesions with  
pale centers and  
rounded  
margins**



# Closer view of erythema marginatum in the same patient



# Subcutaneous nodule on the extensor surface of elbow of a patient with acute RF



The joints of the hands are often the very first joints affected by rheumatoid arthritis. These **joints are swollen red and tender** when squeezed.



Swelling due to synovitis



# Ulnar Deviation



# MCP Subluxation

- Subluxation of MCP joints.



# SWAN NECK DEFORMITY

Hyperextended  
PIP Joint

Flexed  
DIP Joint



# Boutonniere Deformity



# Boutonniere deformity



Flexion of the PIP joint accompanied by hyperextension of the DIP joint is boutonniere deformity in little finger.



## Z- deformity of Thumb

Severe hyperextension of the interphalangeal joint of the thumb with flexion of the metacarpophalangeal (MCP) joint can occur; this is called a duck bill, Z (zigzag) type, or 90° -angle deformity.

With simultaneous thumb instability, pinch is greatly impaired.



# Cock-up deformity or hammer toes



# RA - knees

- Joint spaces in knee is reduced due cartilage destruction.



## Skin complications of RA

Skin and muscles become **atrophic (thin and wrinkled)**, making it fragile and easy to bruise



## Skin complications of RA

The palms  
become reddened  
(palmer  
erythema)





# Rheumatoid nodules

- But they can also occur on other pressure points, including the back of the head, the base of the spine, the **Achilles tendon**, and the tendons of the hand

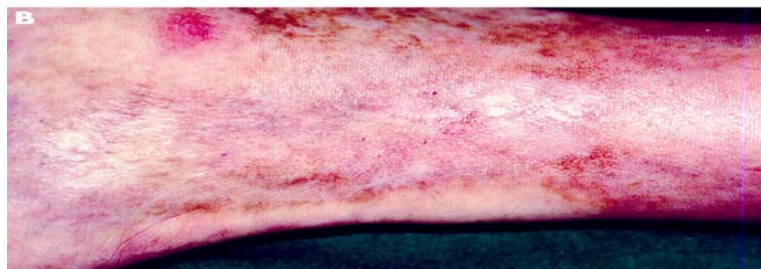


# Rheumatoid nodules

- Although nodules are mostly benign, complications such as infection, ulceration, and gangrene can occur following breakdown of skin overlying the nodules.



# RA - Vasculitis



## Skin complications of RA

Sweet disease and pyoderma gangrenosum are other neutrophilic disorders sometimes seen in association with rheumatoid arthritis.

Pyoderma gangrenosum



# OCULAR COMPLICATIONS OF RA

- Keratoconjunctivitis sicca





# OCULAR COMPLICATIONS OF RA

- RA can also cause **inflammation of the sclera** (white part of the eye), which may make the sclera appear red or bluish in color.



# OCULAR COMPLICATIONS OF RA

- Episcleritis



# OCULAR COMPLICATIONS OF RA

- Stromal corneal opacities with peripheral vascularization



# RESPIRATORY COMPLICATIONS OF RA

- CXR shows multiple, round, well defined nodules, usually 0.5 - 2.0 cm in diameter, which may cavitate and resemble tuberculosis. CT scanning gives a better picture of cavitation.



# RESPIRATORY COMPLICATIONS OF RA

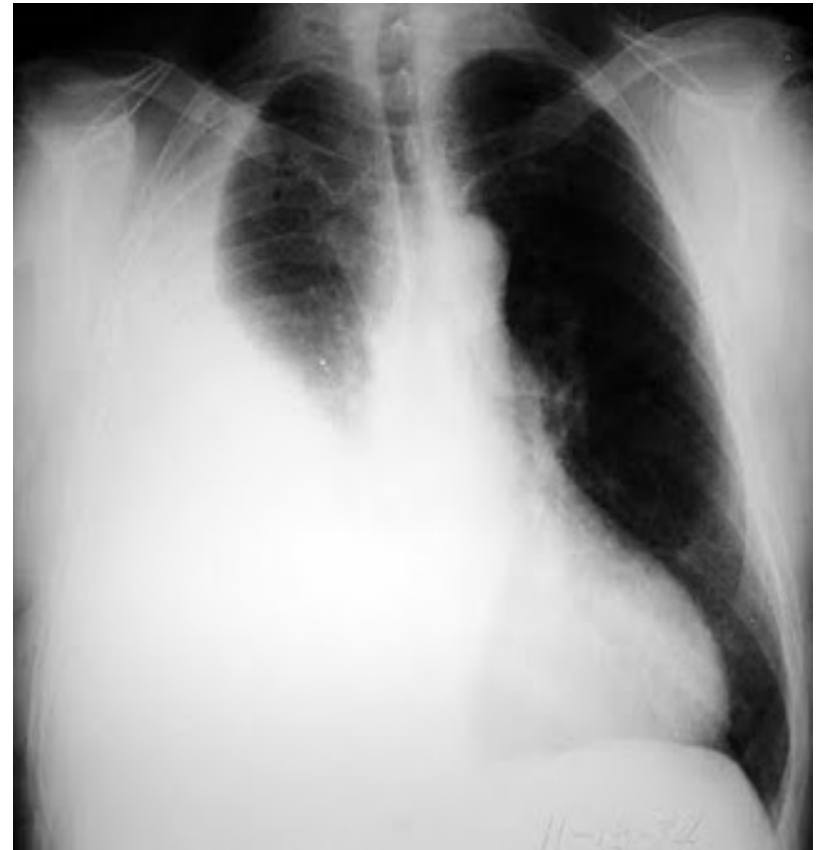
- Fibrosis of lung scattered all over lung





# RESPIRATORY COMPLICATIONS OF RA

- Pleural effusion
- Usually unilateral
- Exudative with low sugar





Thenar Atrophy

Normal Thenar Eminence

# Atlantoaxial Instability





Figure 1



Figure 2



Figure 1

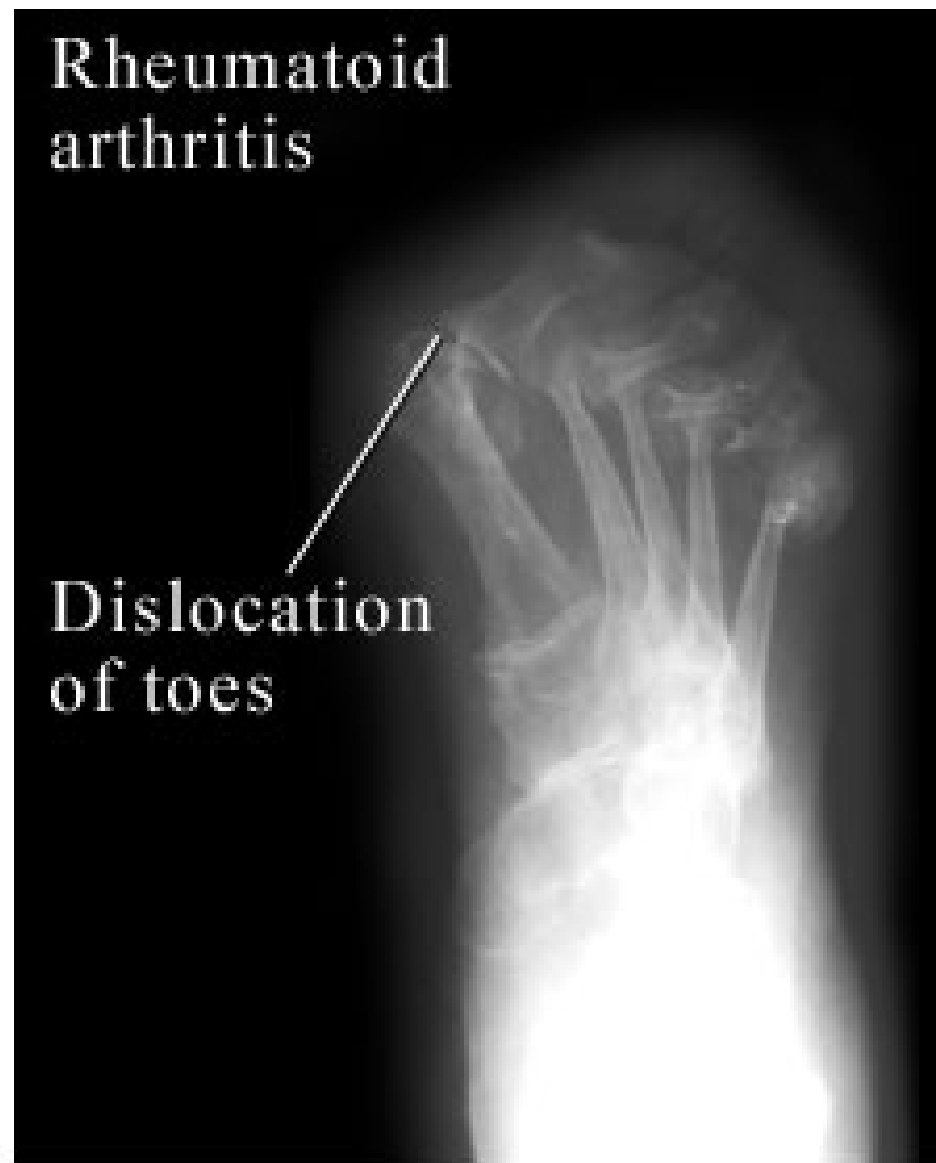


Figure 2



# Lysis of bones

- Punched out lytic changes in bones



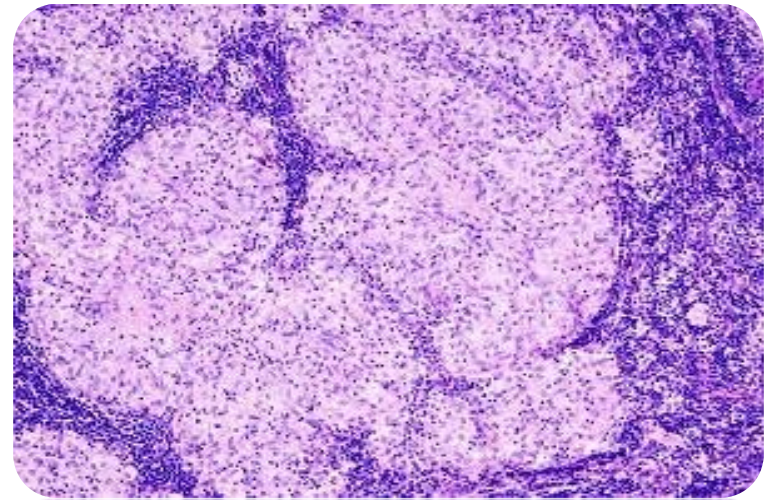
- Lytic changes in toes



# Immunopathology

The most consistent histological finding is a **GRANULOMA** .

Typical sarcoid granulomas consist of focal accumulations of epithelioid cells, macrophages and lymphocytes, mainly T cells.

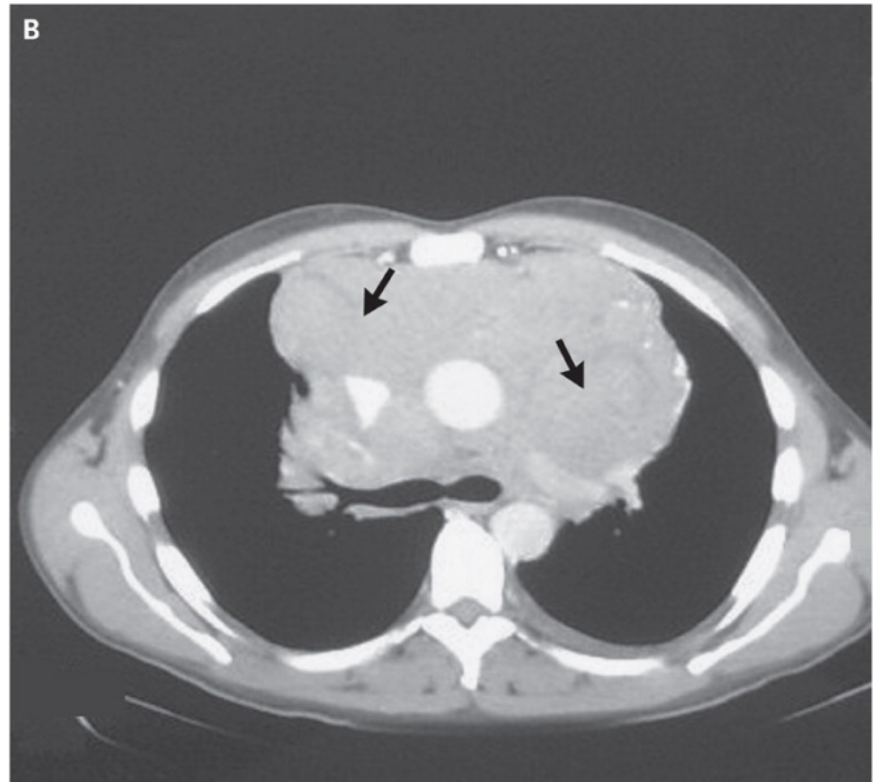
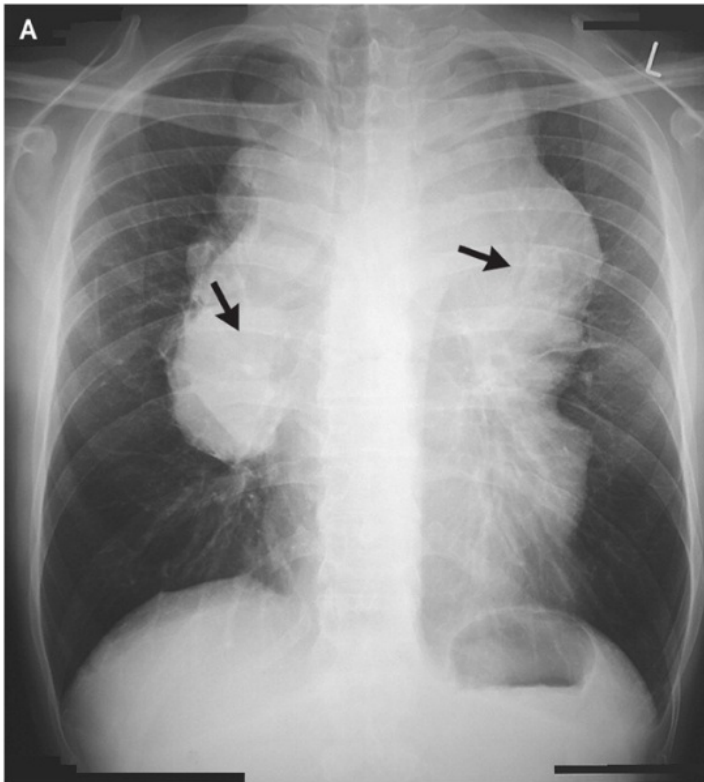


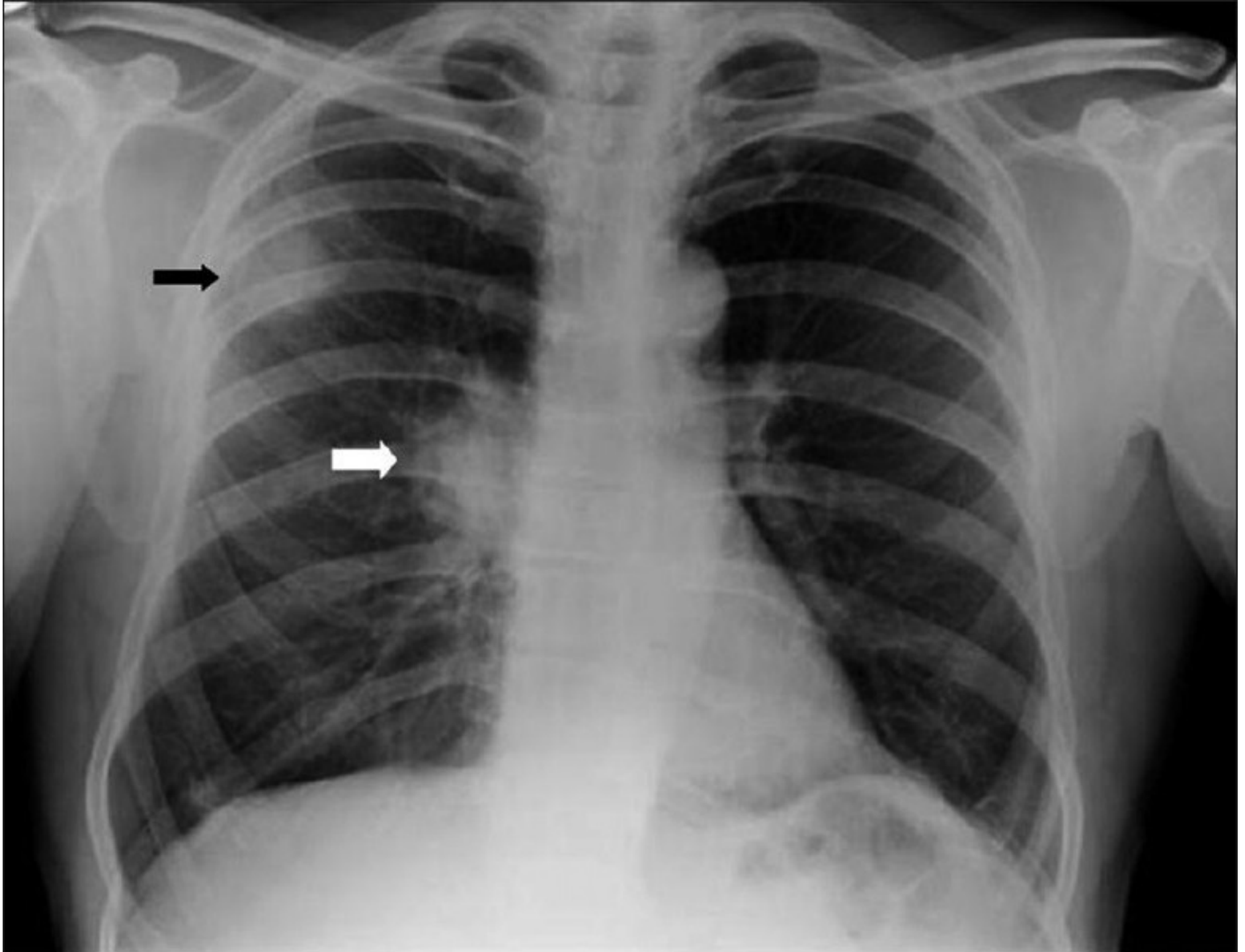
The finding of **granulomas is not specific** for sarcoidosis, and other conditions known to cause granulomas must be ruled out. These conditions include mycobacterial and fungal infections, malignancy, and environmental agents such as beryllium .

عبارة عن تضخم في الليمف الخاصة بالرئة وتظهر  
واضحة هنا على اليمين بواسطة CT  
وعلى اليسار بواسطة X-Ray

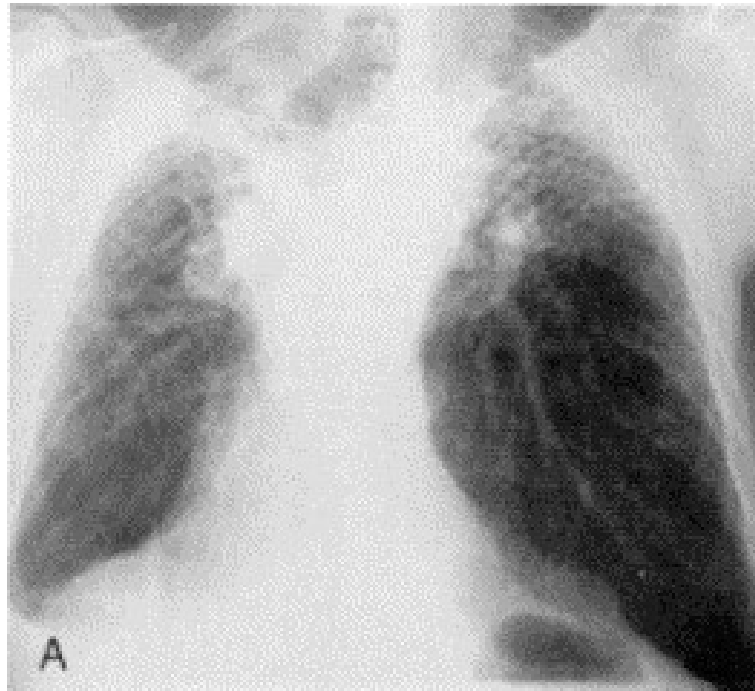
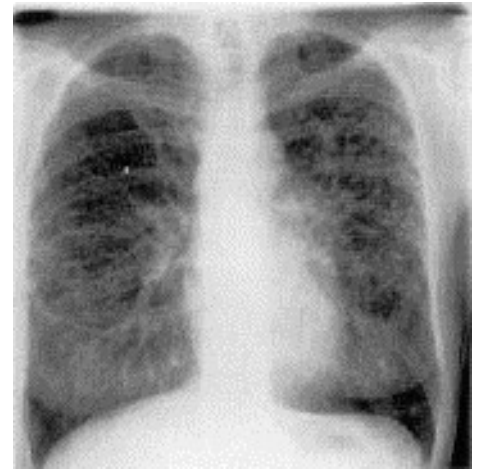
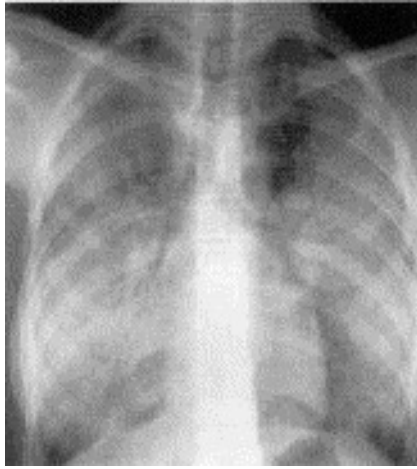
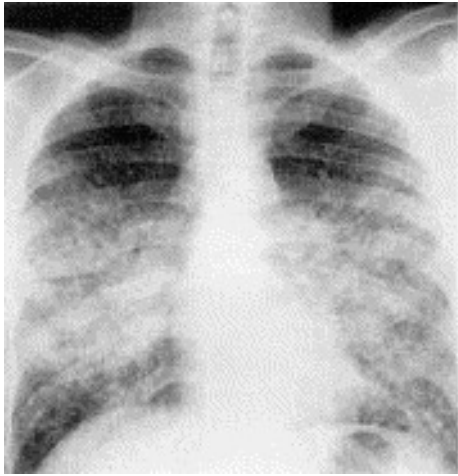
## Bilateral hilar lymphadenopathy

This is a characteristic feature of sarcoidosis. It is often symptomless and simply detected on a **routine chest X-ray**. A consistent feature is its **symmetry**. Occasionally, the bilateral hilar lymphadenopathy is **associated with** a dull ache in the chest, malaise mild fever .









# Skin involvement

Skin lesions occur in 10% of cases.

Sarcoidosis is **the most common cause of erythema nodosum** . ( after idiopathic )  
bilateral symmetrical hilar lymphadenopathy + erythema nodosum  
**occurs only in sarcoidosis.**



# Anterior uveitis



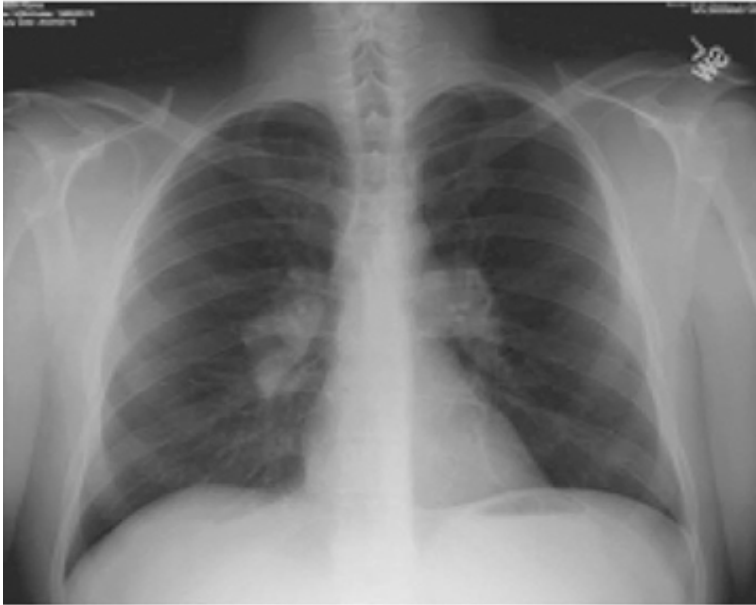
# Hepatosplenomegaly

- Sarcoidosis is a cause of **hepatosplenomegaly**,
- Though it is rarely of any clinical consequence.
- A liver biopsy is occasionally performed when the diagnosis is in doubt and shows granulomas.



# Chest X-ray changes are divided into four stages :

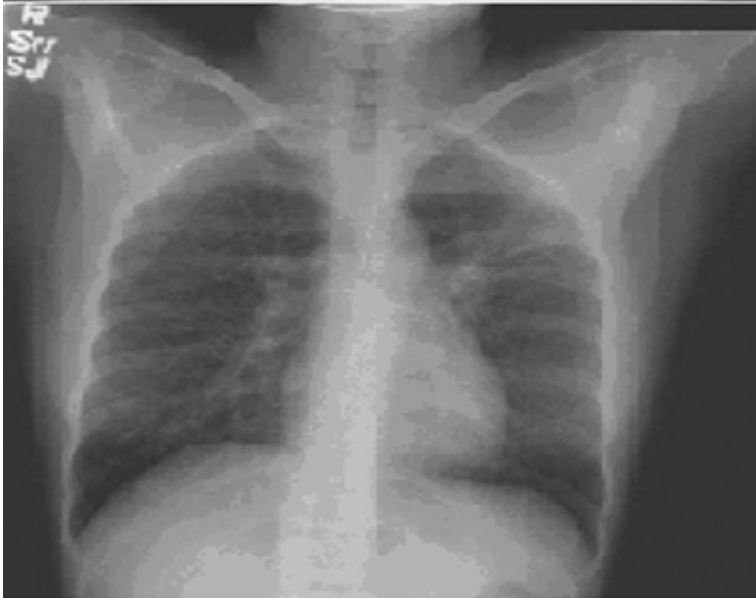
Stage I  
(lymphadenopathy)



Stage II  
(lymphadenopathy and infiltrates)



Stage III  
(infiltrates only)



Stage IV  
(fibrosis)





**Figure 329-3**



Source: Longo DL, Fauci AS, Kasper DL, Hauser SL, Jameson JL, Loscalzo J: *Harrison's Principles of Internal Medicine, 18th Edition*: [www.accessmedicine.com](http://www.accessmedicine.com)

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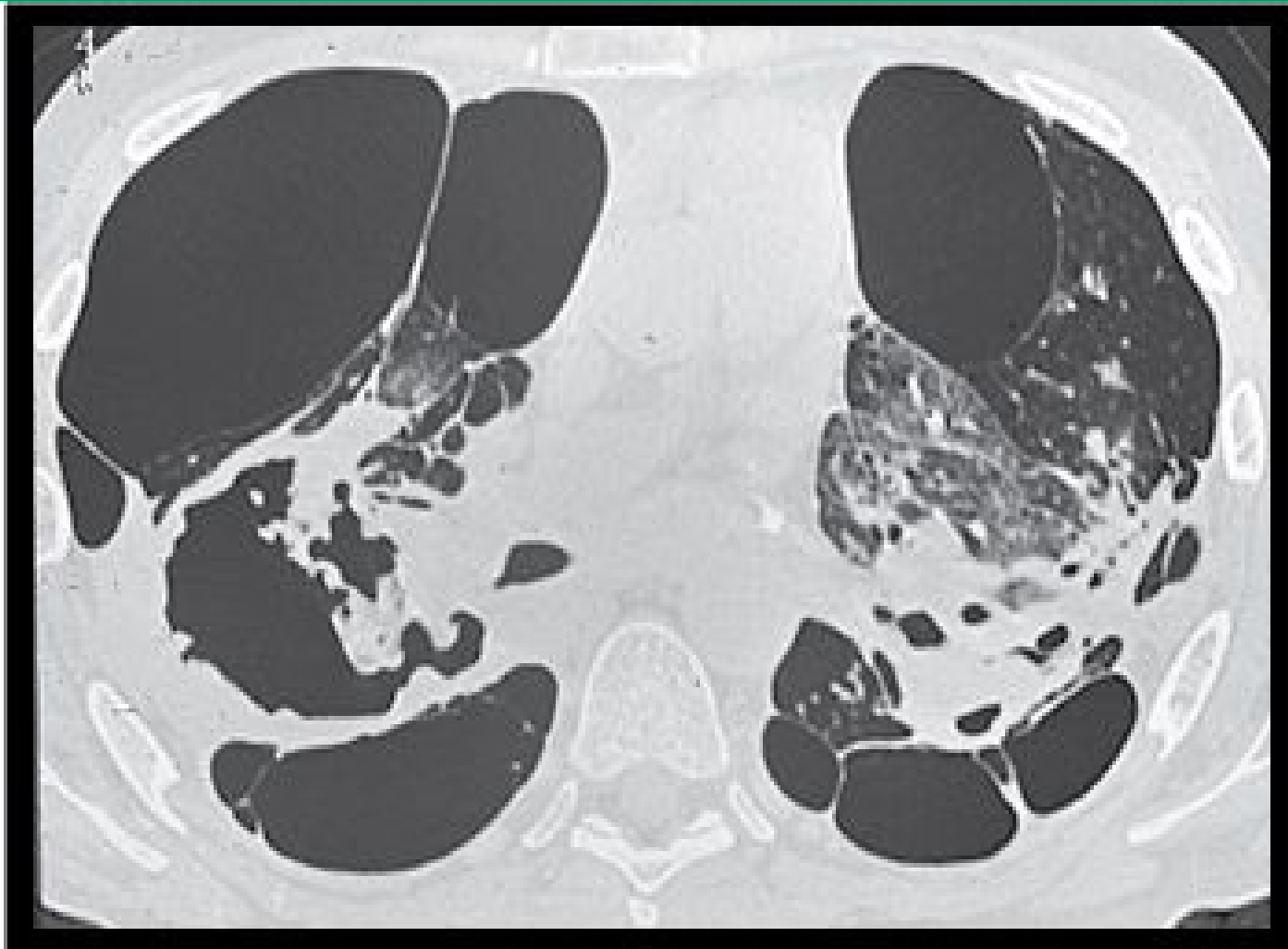
**High-resolution CT scan of chest** demonstrating patchy reticular nodularity, including areas of confluence.

# Sarcoidosis



Stage II sarcoidosis according to Siltzbach's classification. Multiple miliary peribronchiolar nodules are scattered diffusely throughout both lungs. In addition, both hilar regions are enlarged due to lymph node enlargement.

# Scarring in sarcoidosis

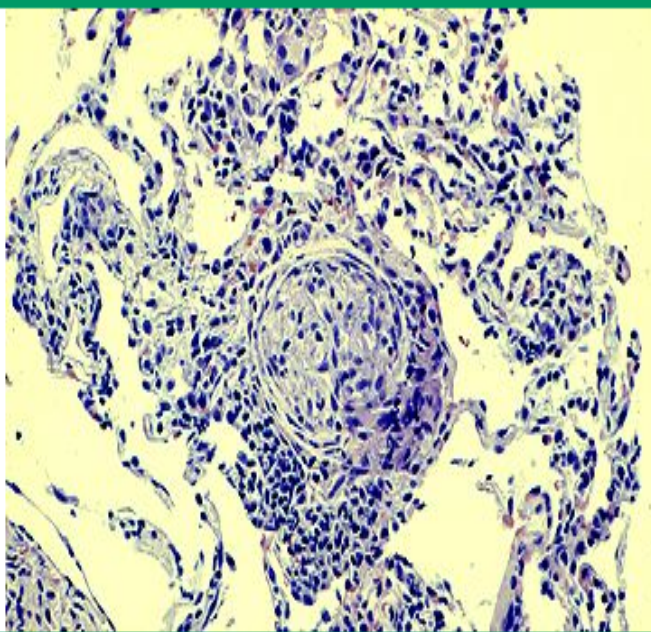


Sarcoidosis with marked scarring and parenchymal distortion in the upper lobes, bulla formation, and cavities. These changes are irreversible.

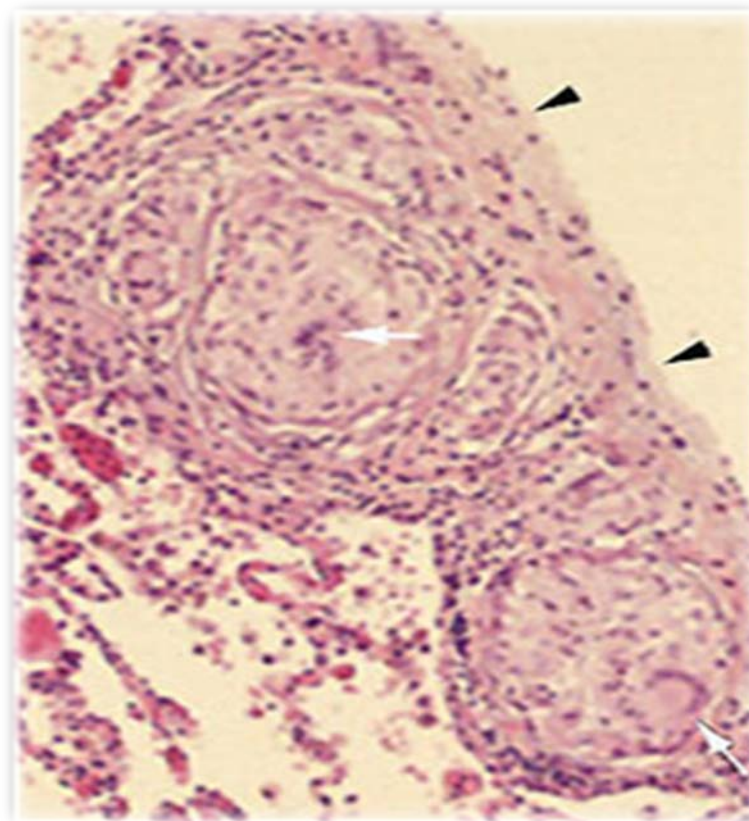
- **Histologic Findings**

- The central histological finding is the presence of **NCGs**, which are most commonly found **in the alveolar septa, the walls of bronchi, and the pulmonary arteries and veins.**

### Sarcoidosis



Transbronchial biopsy findings are consistent with the clinical diagnosis of sarcoidosis. The histopathologic specimen shows granulomatous inflammation.



# Clinical Features

- **Arthritis and arthralgia** :-

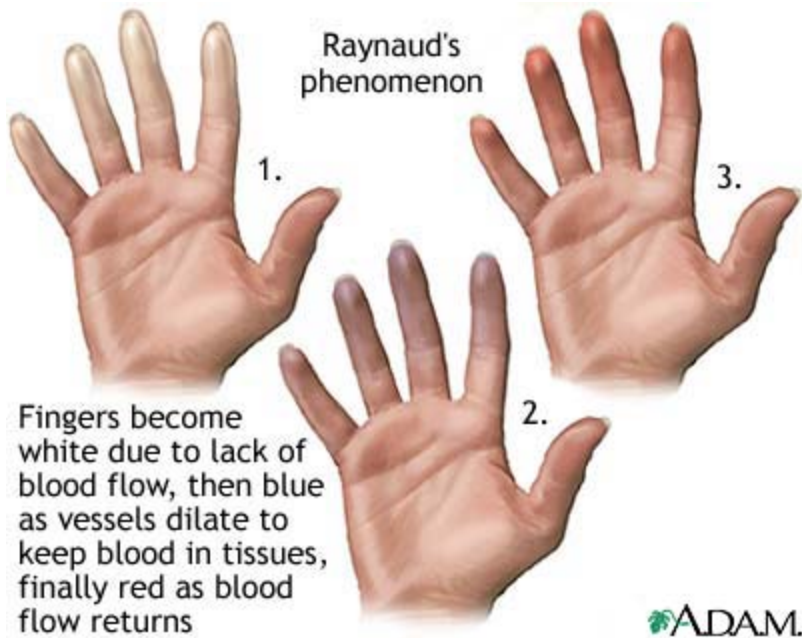
90%



A variety of joint problems occur, including migratory arthralgia and early morning stiffness, tenosynovitis and small joint synovitis that can mimic rheumatoid. However, joint deformities and erosion are rare and synovitis is seldom obvious clinically.

When joint deformities do occur, they result more from tendon inflammation and damage than from bone destruction (Jaccoud's arthropathy).





Raynaud's



livedo reticularis



Malar Rash



Discoid Lupus

# Clinical Features

- CVS :-

The heart is involved in 25% of cases.

Pericarditis, with small pericardial effusions detected by echocardiography, is common. mild myocarditis also occurs, giving rise to arrhythmias.

Aortic valve lesions and a cardiomyopathy can rarely be present. A non-infective endocarditis involving the mitral valve (Libman-Sacks syndrome) is very rare

There is an increased frequency of ischaemic heart disease and stroke in patients with SLE.



# Clinical Features

- **Gastrointestinal** :-

Mouth ulcers may occur, which may or may not be painful.

Mesenteric vasculitis is a serious complication which can present with abdominal pain, bowel infarction or perforation.



# Systemic sclerosis





© Jere Mammino, DO



Hands showing tight shiny skin, sclerodactyly, flexion contractures of the fingers and thickening of the left middle finger extensor tendon sheath.

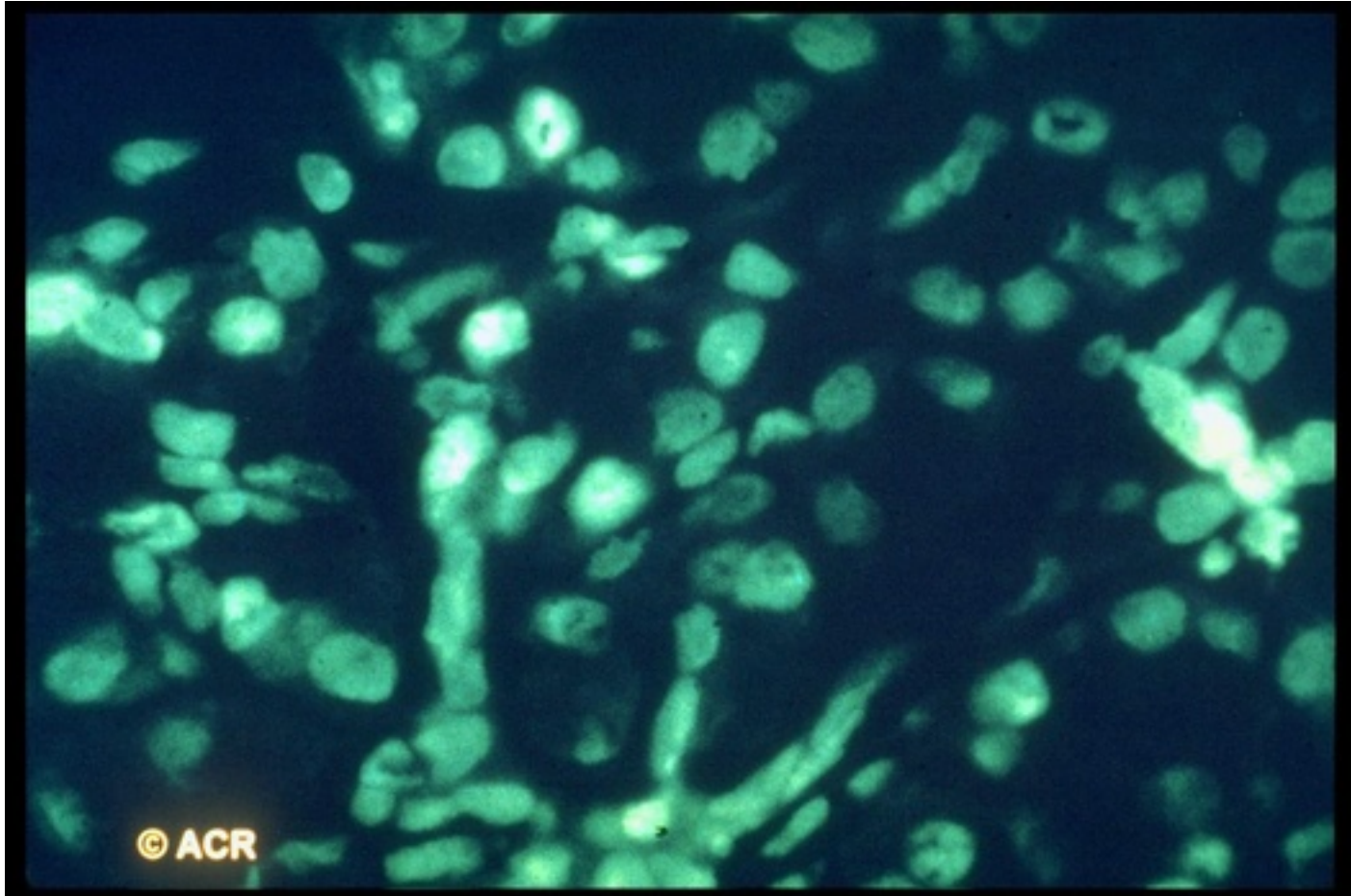
# Clinical Features - *Skin*



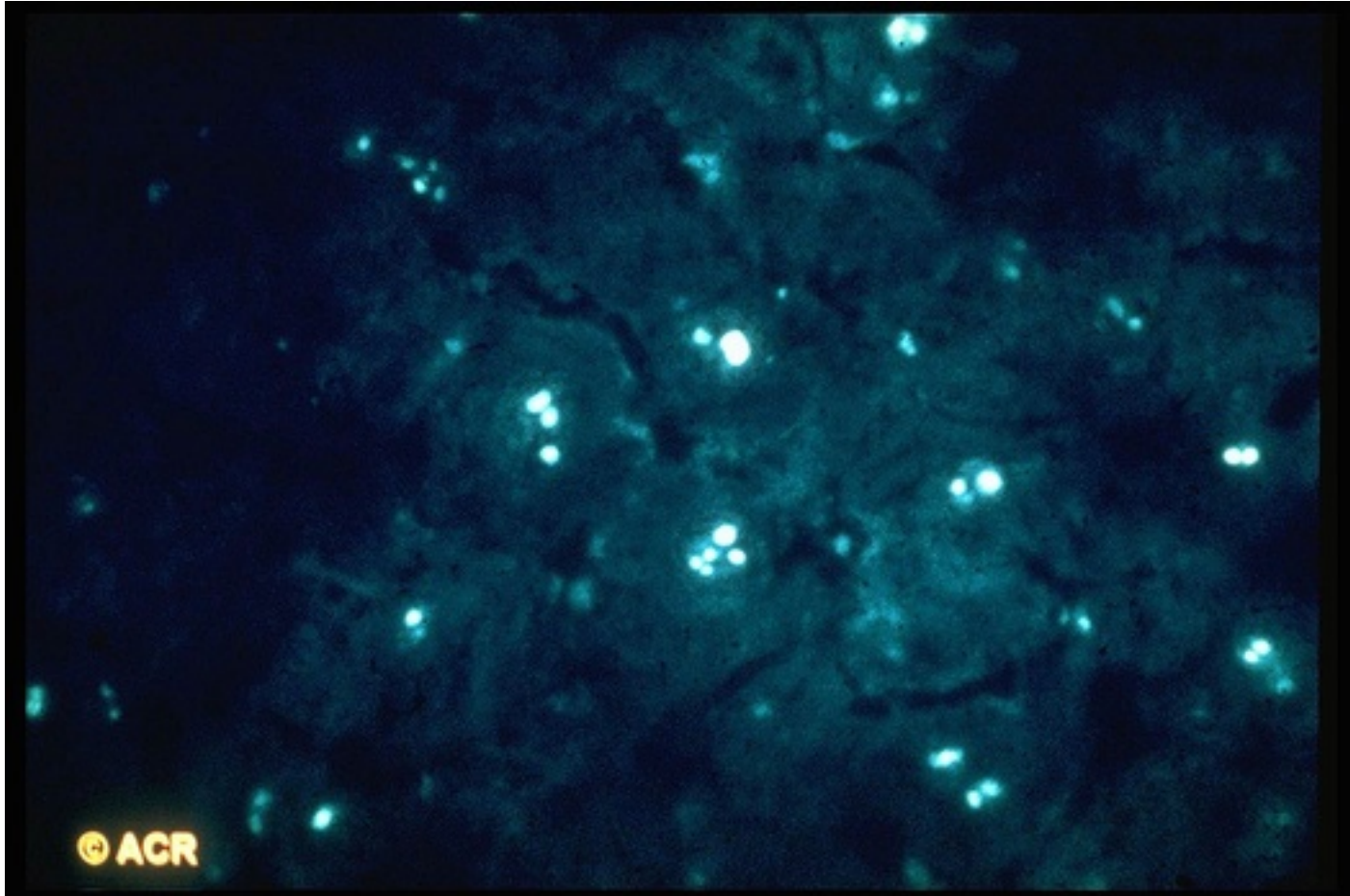
CREST syndrome



# Diffuse ANA



# Nucleolar ANA





## • Notorious gastrointestinal manifestations of TYPHOID FEVER

### The first week

- 1- diffuse abdominal pain and tenderness
  - 2- **in some cases**, fierce colicky right upper quadrant pain.
  - 3- constipation
- The individual then develops a dry cough, dull frontal headache and delirium.
- **end first week of illness**
- The fever peak at 103-104°F (39-40°C).
  - The patient develops **rose spots**, which are salmon-colored, blanching, truncal, maculopapules usually 1-4 cm, ( resolve within 2-5 days.)

### Second week

- The abdomen becomes distended, and soft **splenomegaly** is common.
- Relative bradycardia and **dicrotic pulse**.

### third week

- still febrile, grows more toxic and anorexic
- **with significant weight loss.**
- The conjunctivae are infected.
- tachypneic with a thready pulse and crackles over the lung bases.
- Some patients experience foul, green-yellow, liquid diarrhea (**pea soup diarrhea**).

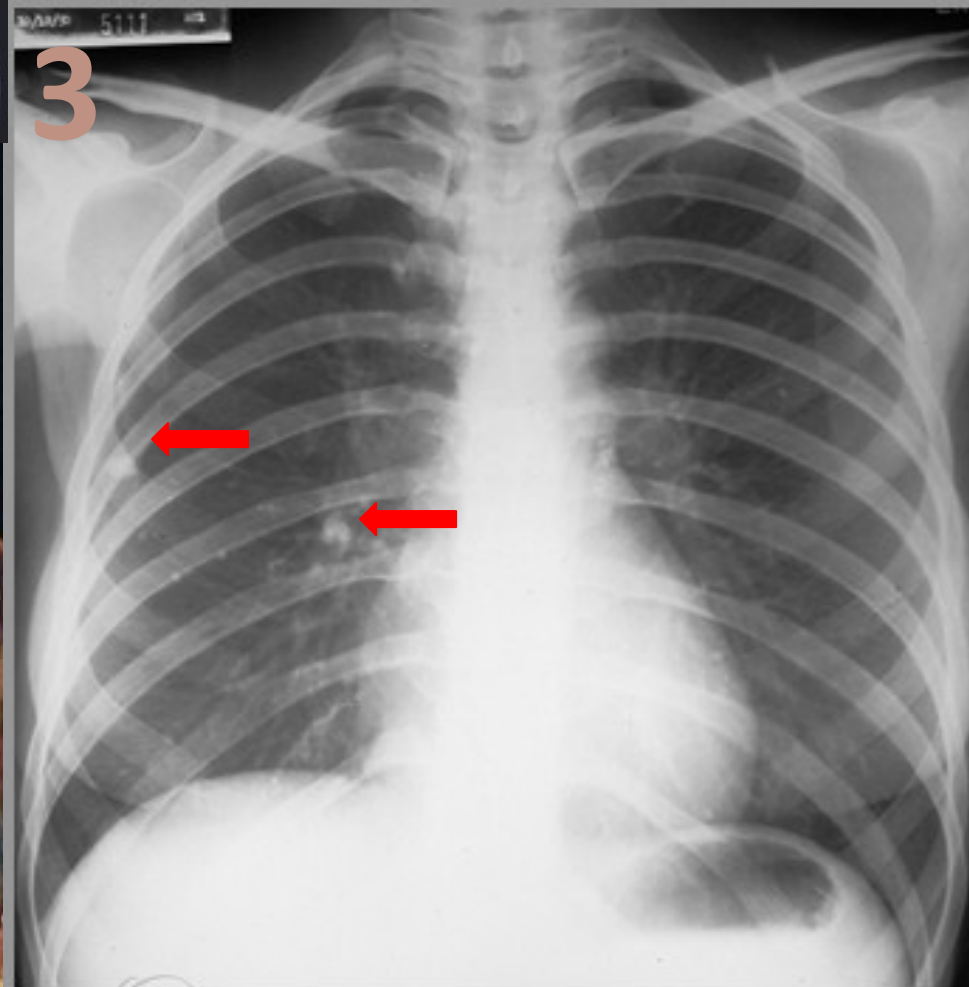




1-Sub-pleural fibro-calcific nodule (Healed Ghon focus)

2-primary pulmonary tuberculosis , Ghon complex. The gray-white parenchymal focus is under the pleura in the lower part of the upper lobe. Hilar lymph nodes with caseation are seen on the left.

3-Calcified Hilar Lymph Node and Peripheral Granuloma



3

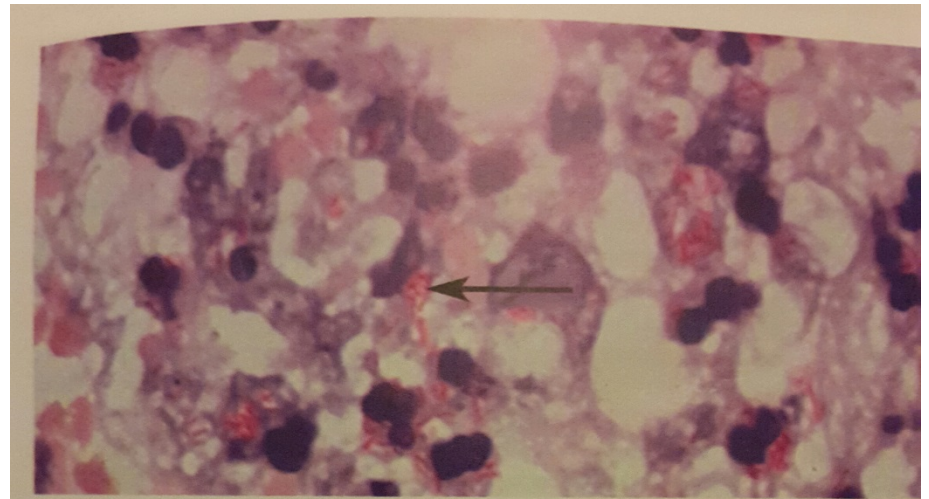
- **Miliary TB:**

- Miliary disease occurs through haematogenous spread of the bacilli to multiple sites, including the central nervous system in 20% cases.
- Systemic upset is the rule, with respiratory symptoms in the majority. Other findings are liver and splenic microabscesses with deranged liver enzymes or cholestasis and GI symptoms.
- The chest X-ray demonstrates multiple nodules which appear like millet seeds, hence the term 'miliary'.





- Drug sensitivity test is important in:
  - 1- history of TB
  - 2- treatment failure or chronic TB
  - 3- visiting areas of high prevalence of resistance
  - 4- HIV positive
- Nucleic acid amplification test (Xpert/RIF) are used for detection of rifampicin resistance MTB. – first choice in HIV patients or those having multi drug resistant TB (MDR-TB).
- For extrapulmonary TB culture or histopathological examination of tissue is more important.



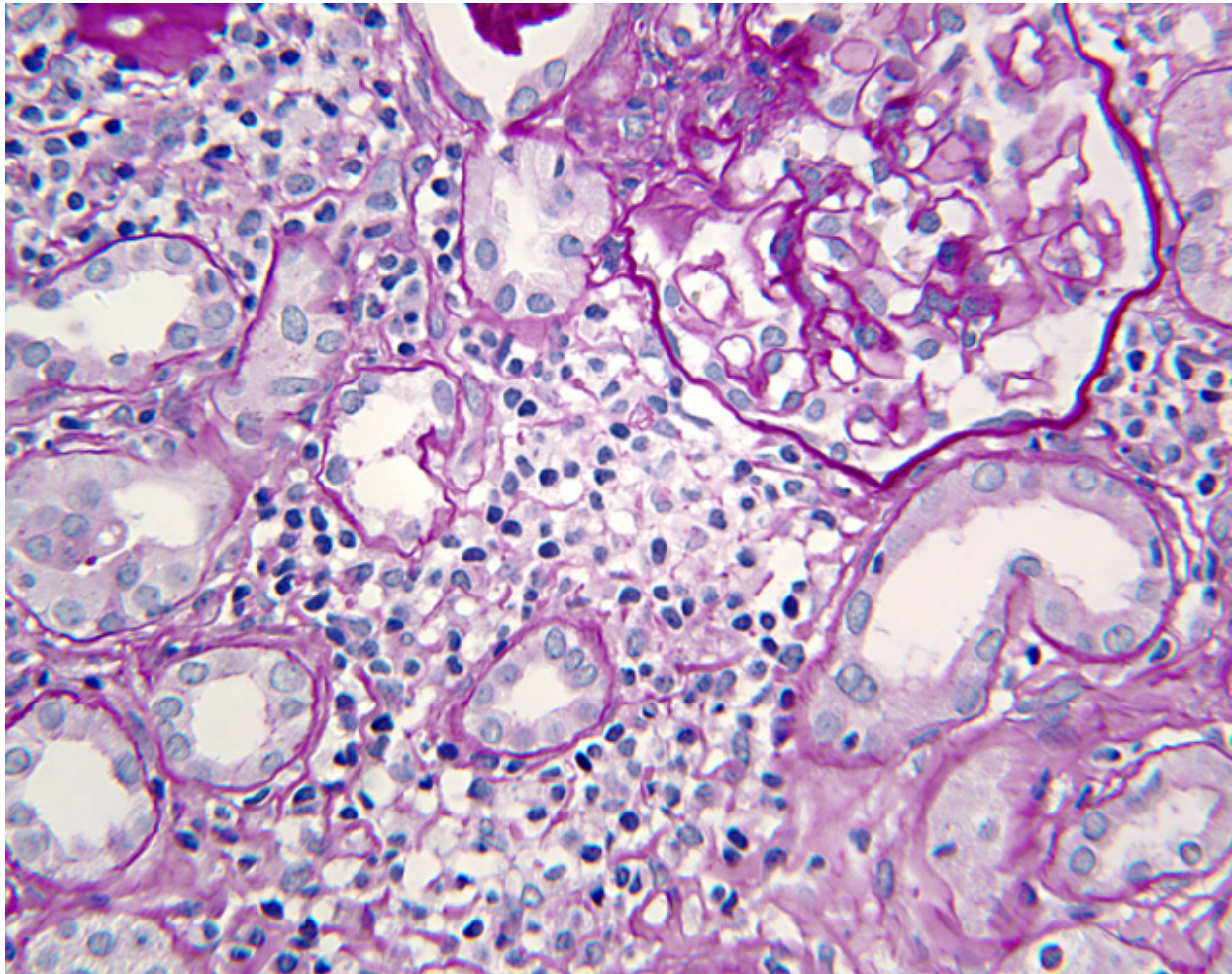
**Fig. 19.41 Positive Ziehl–Neelsen stain.** Mycobacteria retain the red carbol fuchsin stain, despite washing with acid and alcohol.



## *Cholesterol microembolic disease and **nephropathy***

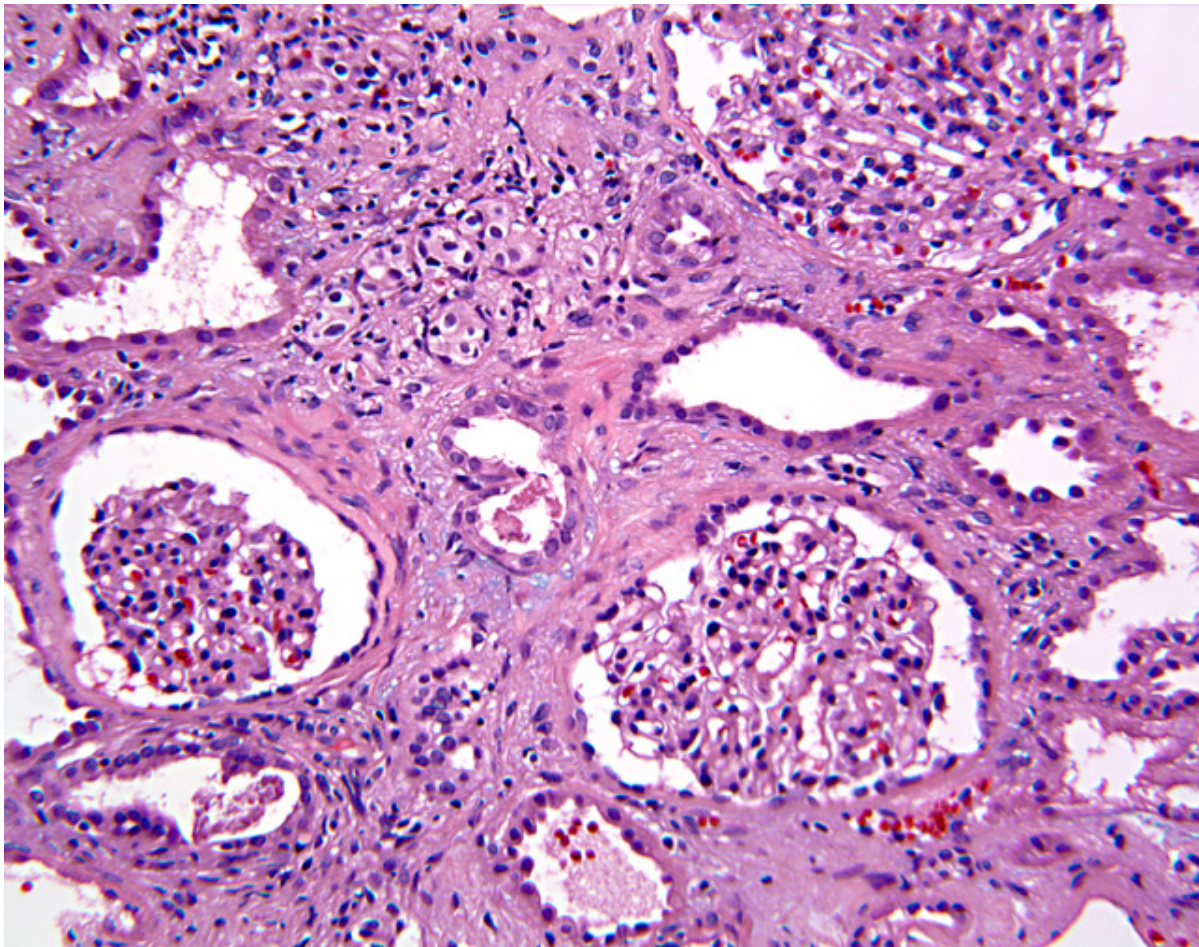
- In the extremities, distal vessel emboli may result in small superficial skin infarcts (scabs) especially on or between the toes or fingers.
- More extensive cholesterol microembolization to the extremities can result in the characteristic livedo reticularis appearance in the lower extremities.
- other systemic signs and symptoms, such as low-grade fever, leukocytosis, eosinophilia, elevated sedimentation rate, and hypocomplementemia.





- Kidney biopsy. This is an example of acute interstitial nephritis. The renal cortex shows a diffuse interstitial, predominantly mononuclear, inflammatory infiltrate with no changes to the glomerulus. Tubules in the center of the field are separated by inflammation and edema, as compared with the more normal architecture in the right lower area (periodic acid-Schiff, 40 X)

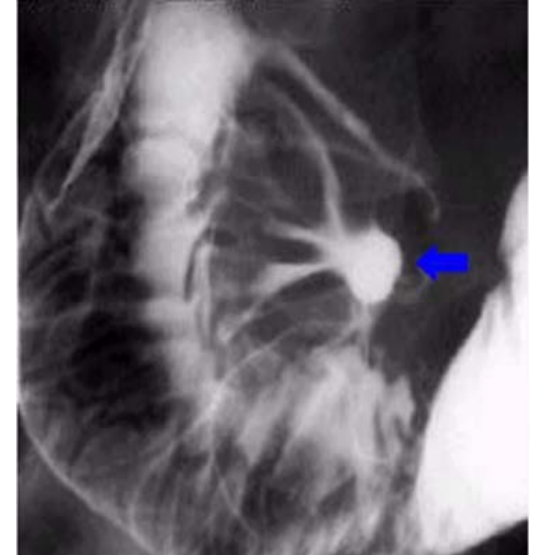




- Kidney biopsy. This image shows chronic tubulointerstitial nephritis. The interstitium is expanded by fibrosis, with distortion of tubules and periglomerular fibrosis. Glomeruli do not show pathologic changes (hematoxylin and eosin, 20 X).

# Investigations

- Endoscopy is the preferred investigation. Gastric ulcers may occasionally be malignant and therefore must always be biopsied and followed up to ensure healing. Patients should be tested for *H. pylori* infection. Some are invasive and require endoscopy; others are noninvasive. They vary in sensitivity and specificity. Breath tests or fecal antigen tests are best because of accuracy, simplicity and non-invasiveness.
- In the past they used to do **Barium meal** to investigate peptic ulcer but with the development of endoscopy we stopped doing it.



# Mallory-weiss syndrome

\*5-10% of upper GI bleeding

Middle age (40-50),(male :female  
4:1)

\*chronic alcoholics and bulimics

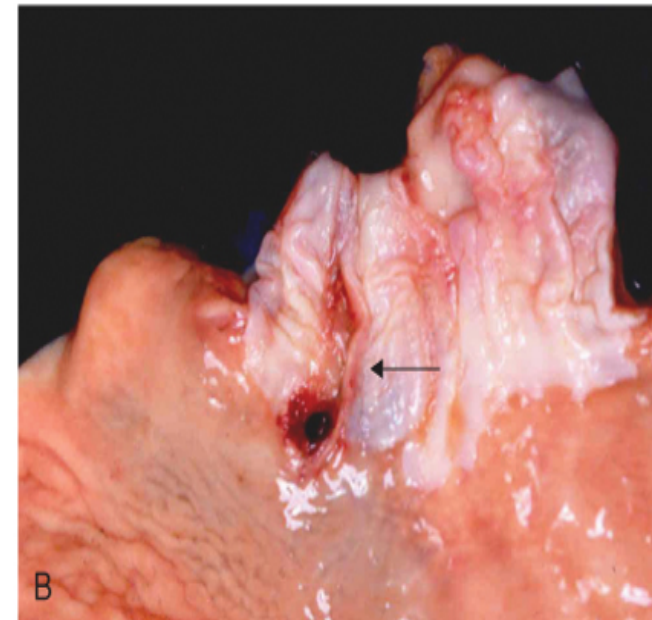
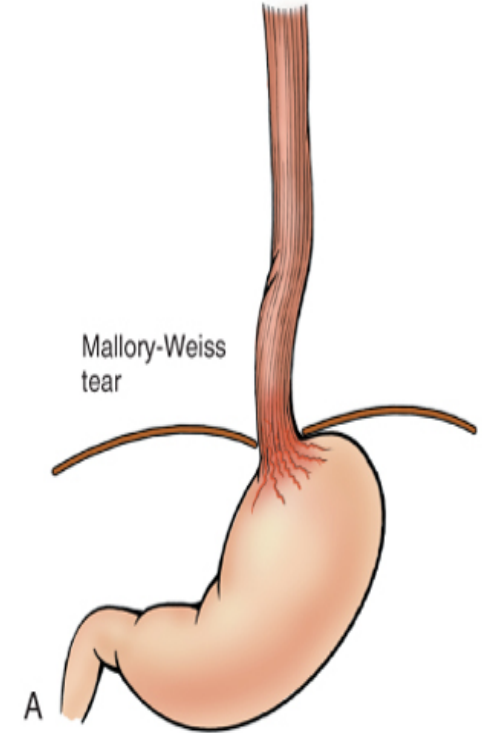
\*increase in intragastric pressure

\*longitudinal mucosal tear at LES

\*retching

\*mostly minor,24hours stop

\*borehaave syndrome : transmural  
,rupture esophagus ,surgical  
emergency



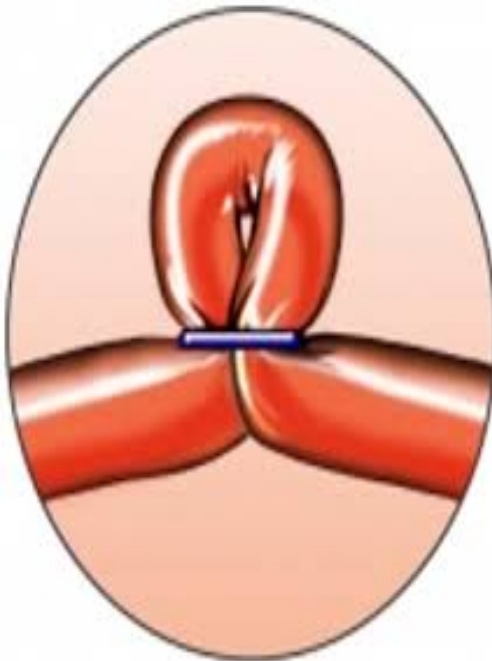


# Treatment

Ventilator is used in massive *bleeding* cases.

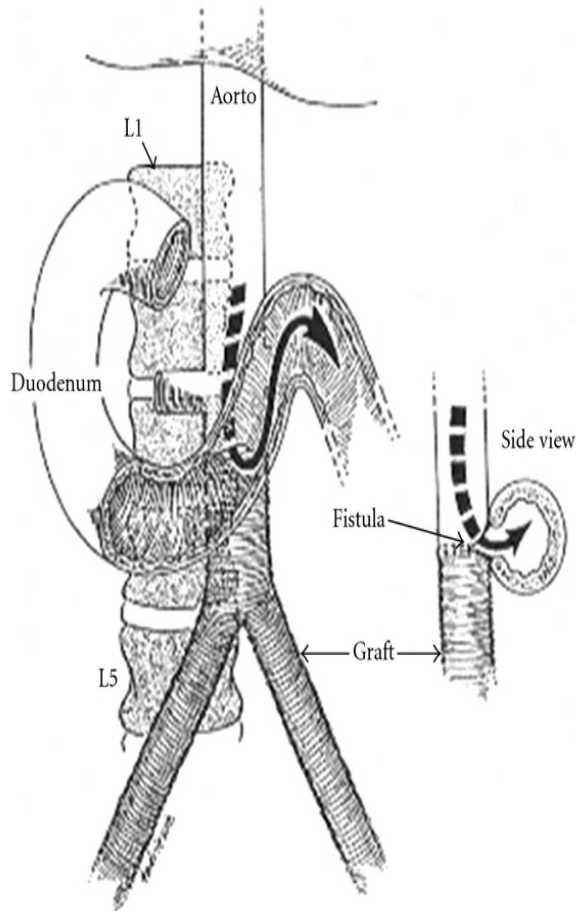
*Acute bleeding* is treated by..

- Clotting medicine injection or Rubber band.



# Upper GIT Bleeding

Osler-Weber-Rendu Syndrom



Aorto-Enteric Fistula



PEUTZ-Jegher's syndrome

## **Giant cell arteritis (GCA) and polymyalgia rheumatica (PMR)**

- GCA and PMR are related diseases associated with a granulomatous arteritis of medium-sized vessels of the head and neck. They are sometimes considered as separate diseases but many patients with PMR also have symptoms of GCA and vice versa. Since the management of both is similar, they are considered together here.
- Both are *diseases of the elderly*, with a prevalence of approximately 20 per 100 000 over the age of 50 years. The average age at onset is 70, and they are rare under the age of 60. There is a female preponderance of about 3:1. The clinical features result from occlusion of vessels and subsequent tissue ischaemia.



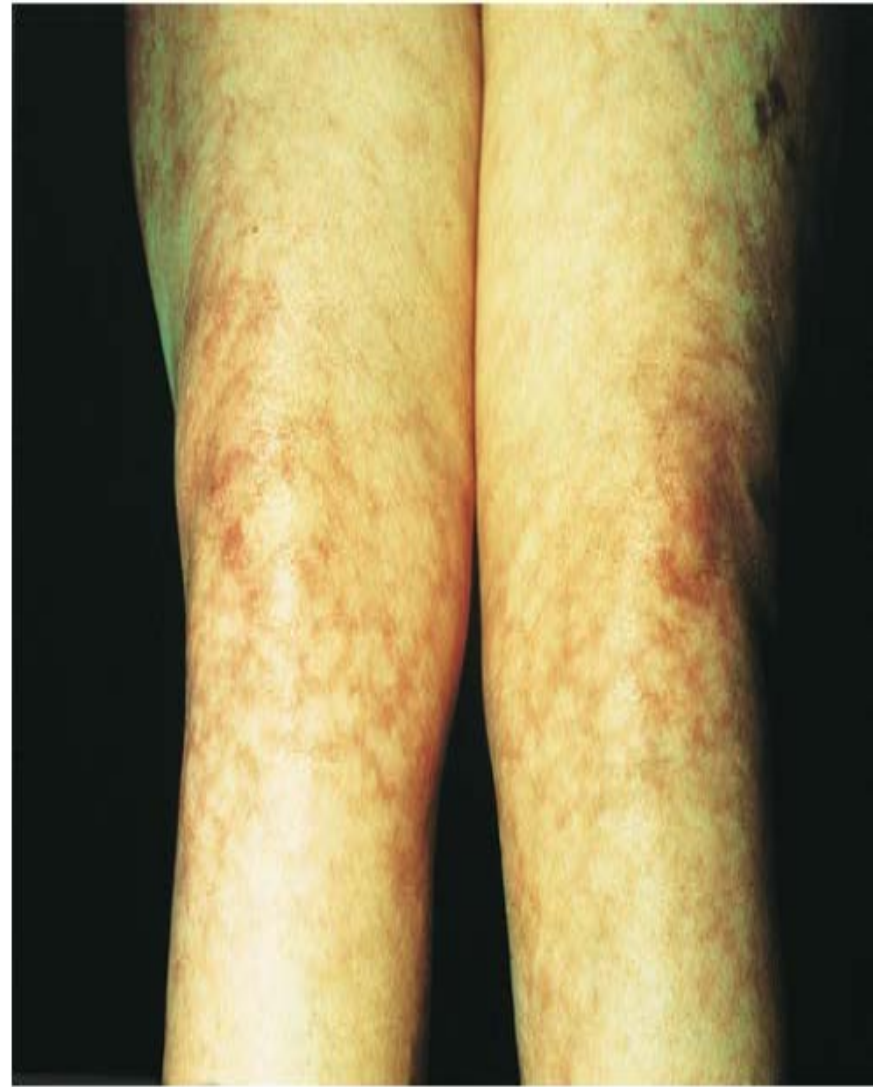
## Clinical features:

- Presentation is with fever, **myalgia, arthralgia** and weight loss, in combination with manifestations of multisystem disease.
- The most common skin lesions are **palpable purpura, ulceration, infarction and livedo reticularis**.
- Severe hypertension and/or renal impairment may occur due to multiple renal infarctions but glomerulonephritis **is rare** (in contrast to **microscopic polyangiitis**)





**Fig. 25.42** Rash of systemic vasculitis (palpable purpura).

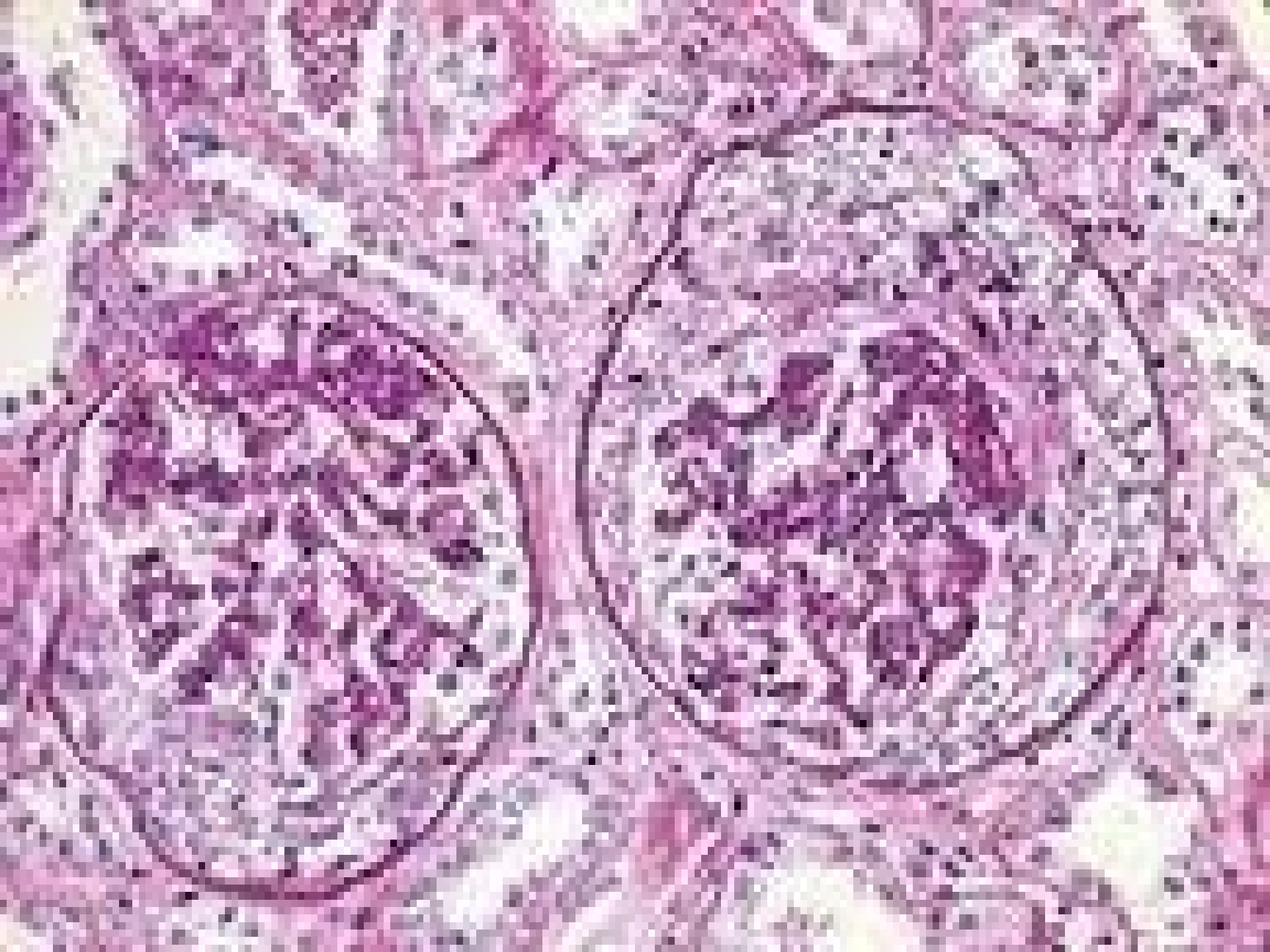


**Fig. 25.37** Livedo reticularis in systemic lupus erythematosus.



# Microscopic polyangiitis (MPA)

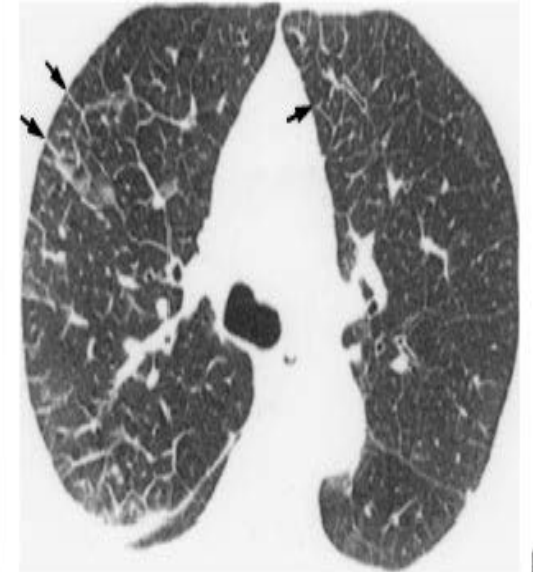
- This has an annual incidence of about 8/1 000 000 and is characterized by necrotizing vasculitis affecting small vessels.
- Typical presentation is with rapidly progressive **glomerulonephritis**, often associated with **alveolar hemorrhage**. Cutaneous and gastrointestinal involvement is common and other features include neuropathy (15%) and pleural effusions (15%).
- Patients are usually myeloperoxidase(MPO) antibody-positive.



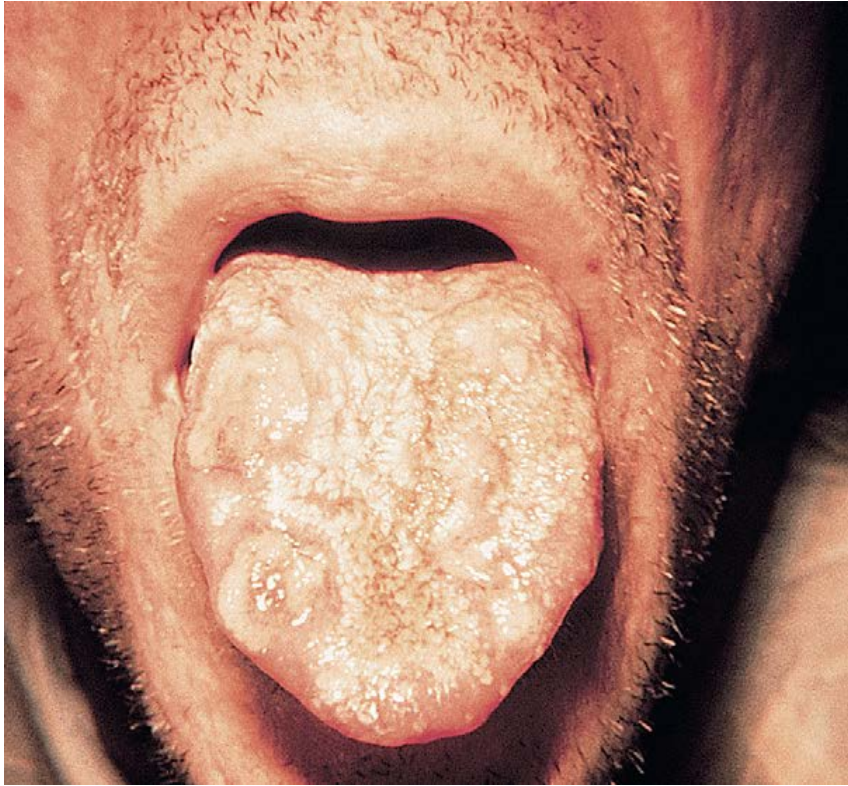


**Fig. 25.43** Eye involvement in Wegener's granulomatosis.





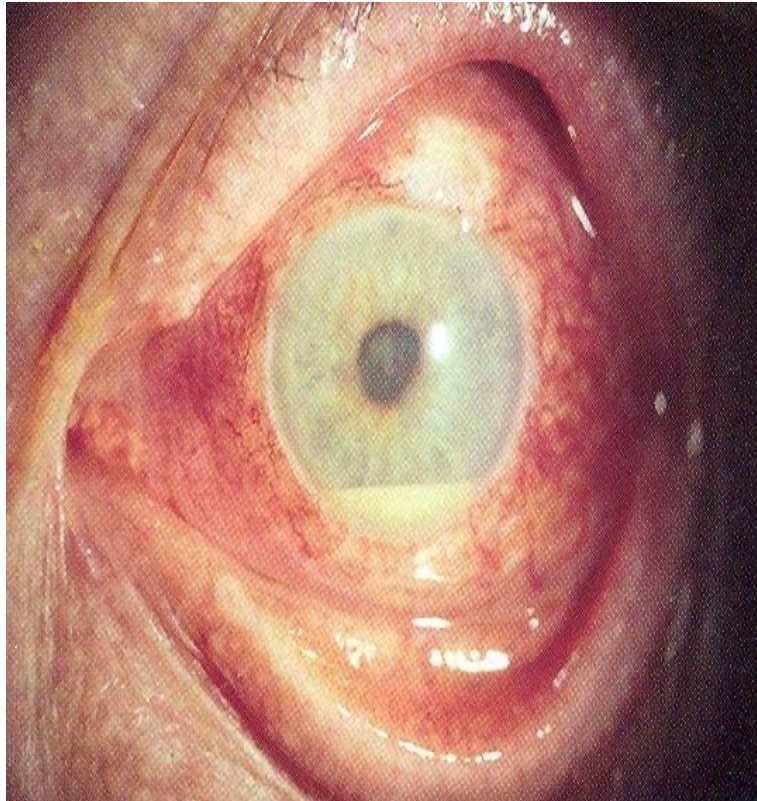




**Oral ulceration in  
behcet's disease**



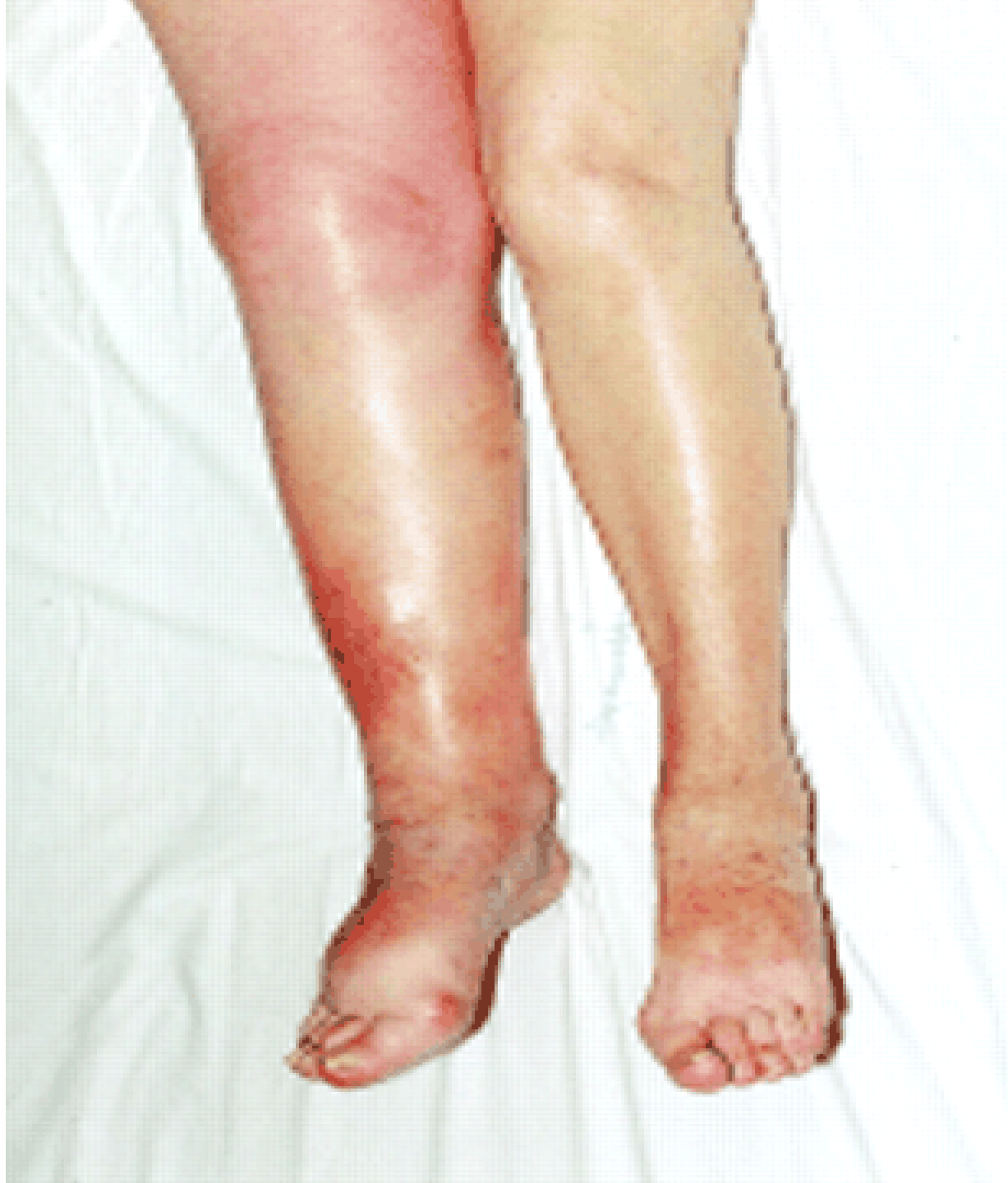
**Erythema nodosum**



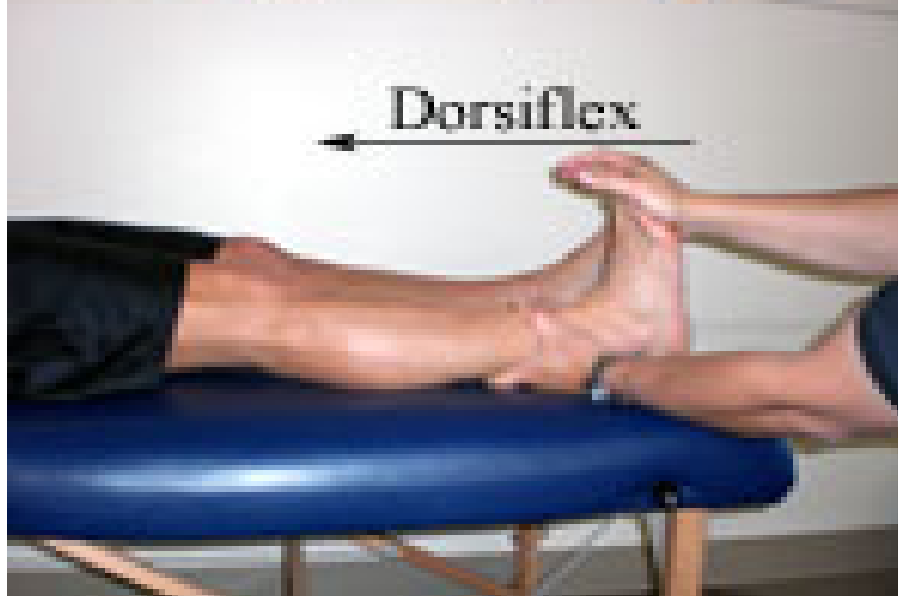
**uveitis**

# **Deep Vein Thrombosis (DVT)**





# Homan's sign



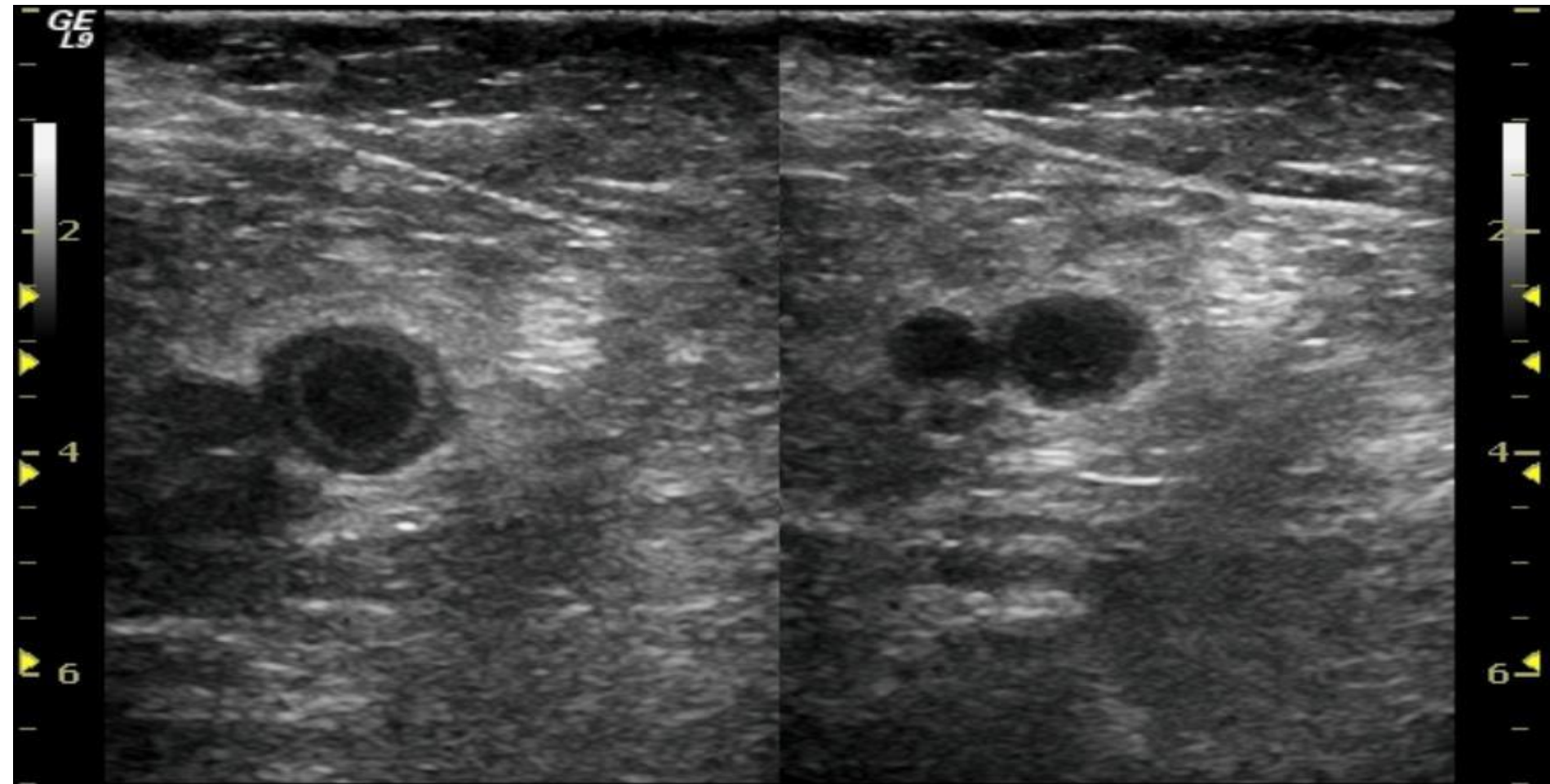
-Highly accurate but invasive



**FIGURE 2.** Venogram before mechanical thrombolysis

## 2- US :

We look for noncompressibility of the vein  
(works mainly for popliteal and femoral veins)



## 3-CT venography



CT venography showing bilateral deep venous thrombosis.  
Arrows indicate bilateral deep venous thrombosis.

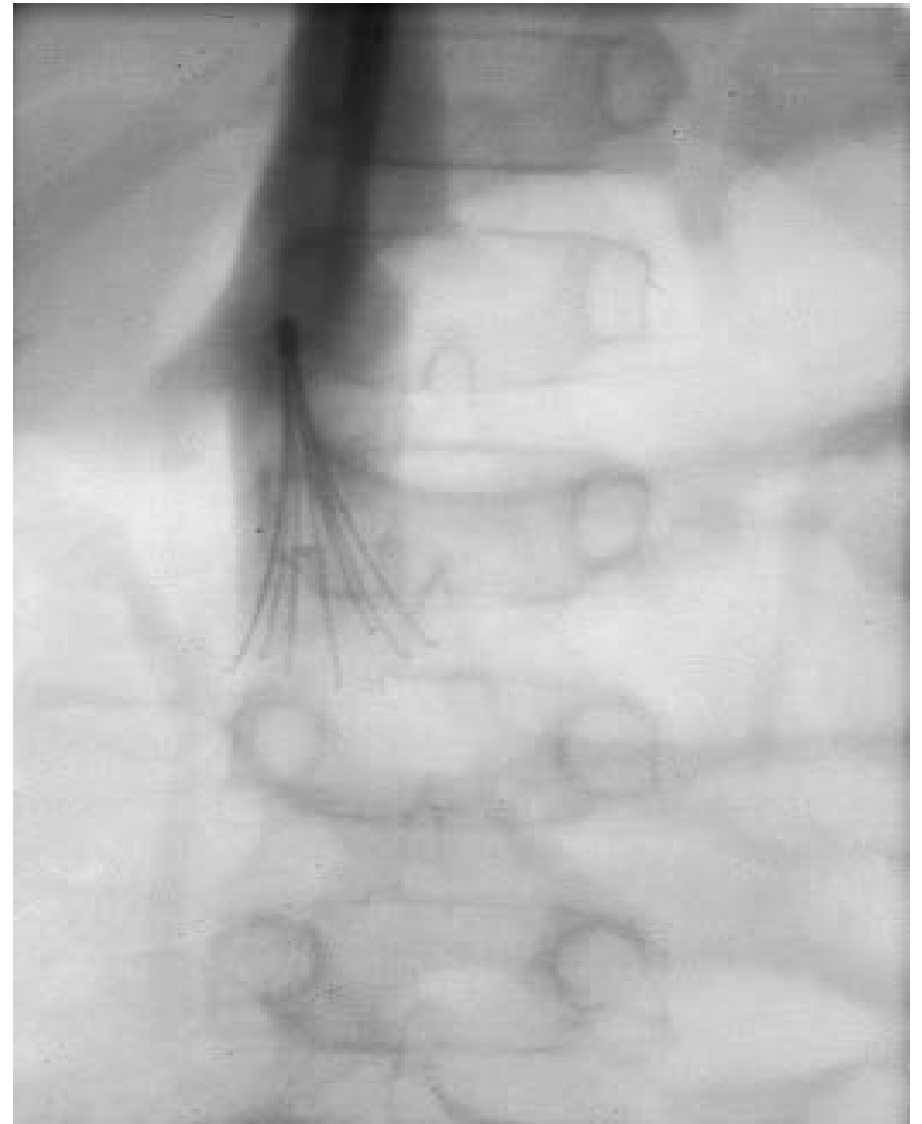
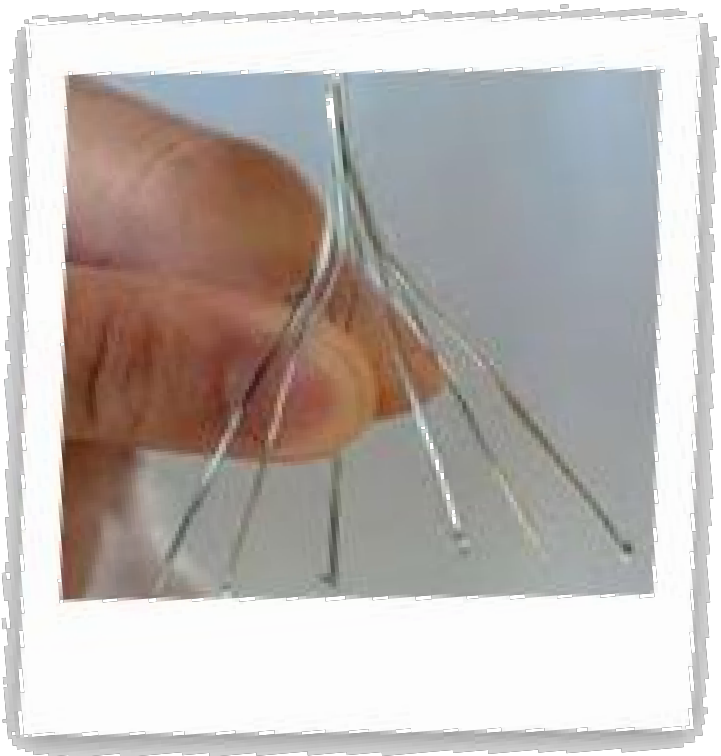


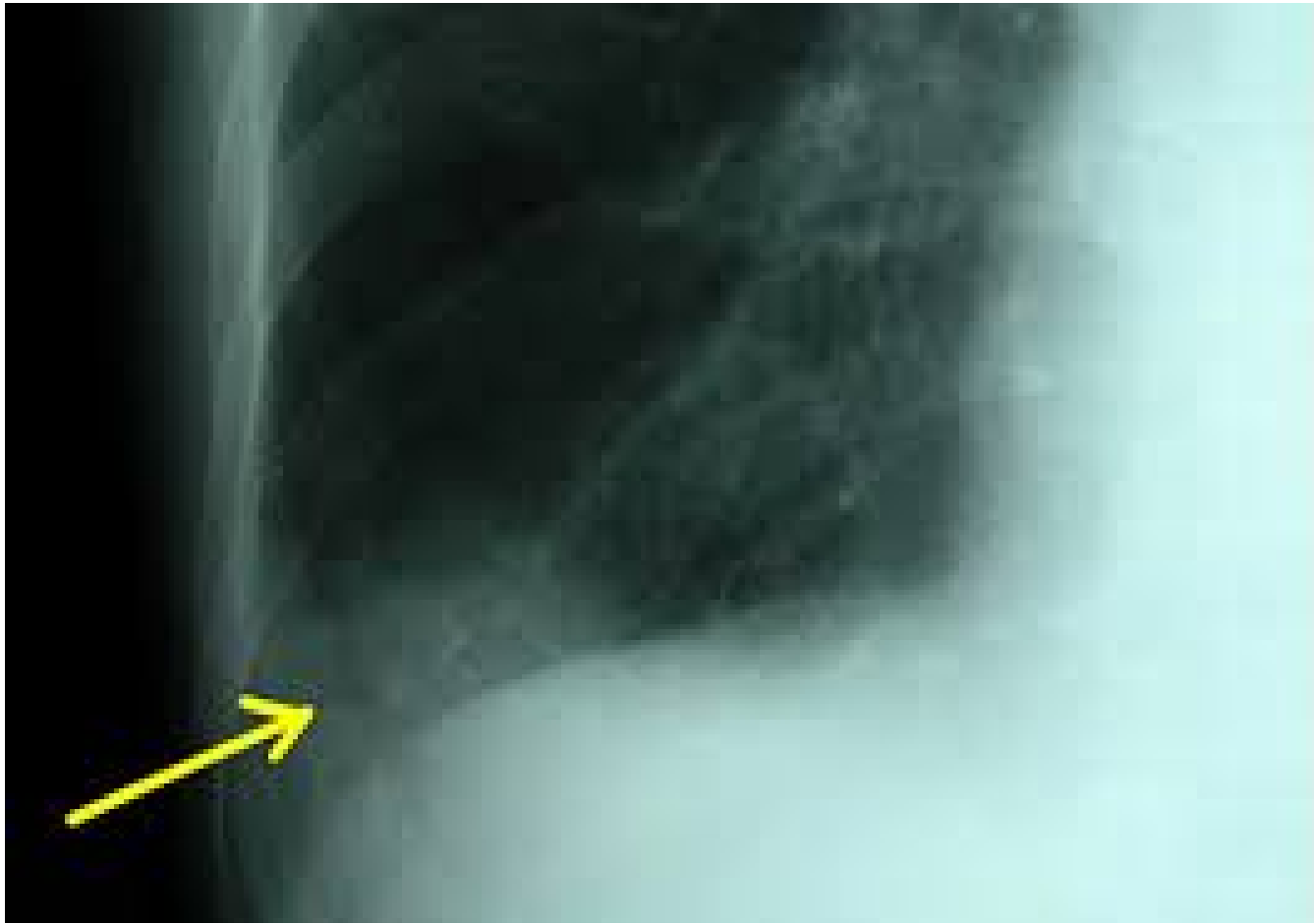
# Surgery

## Thrombectomy :

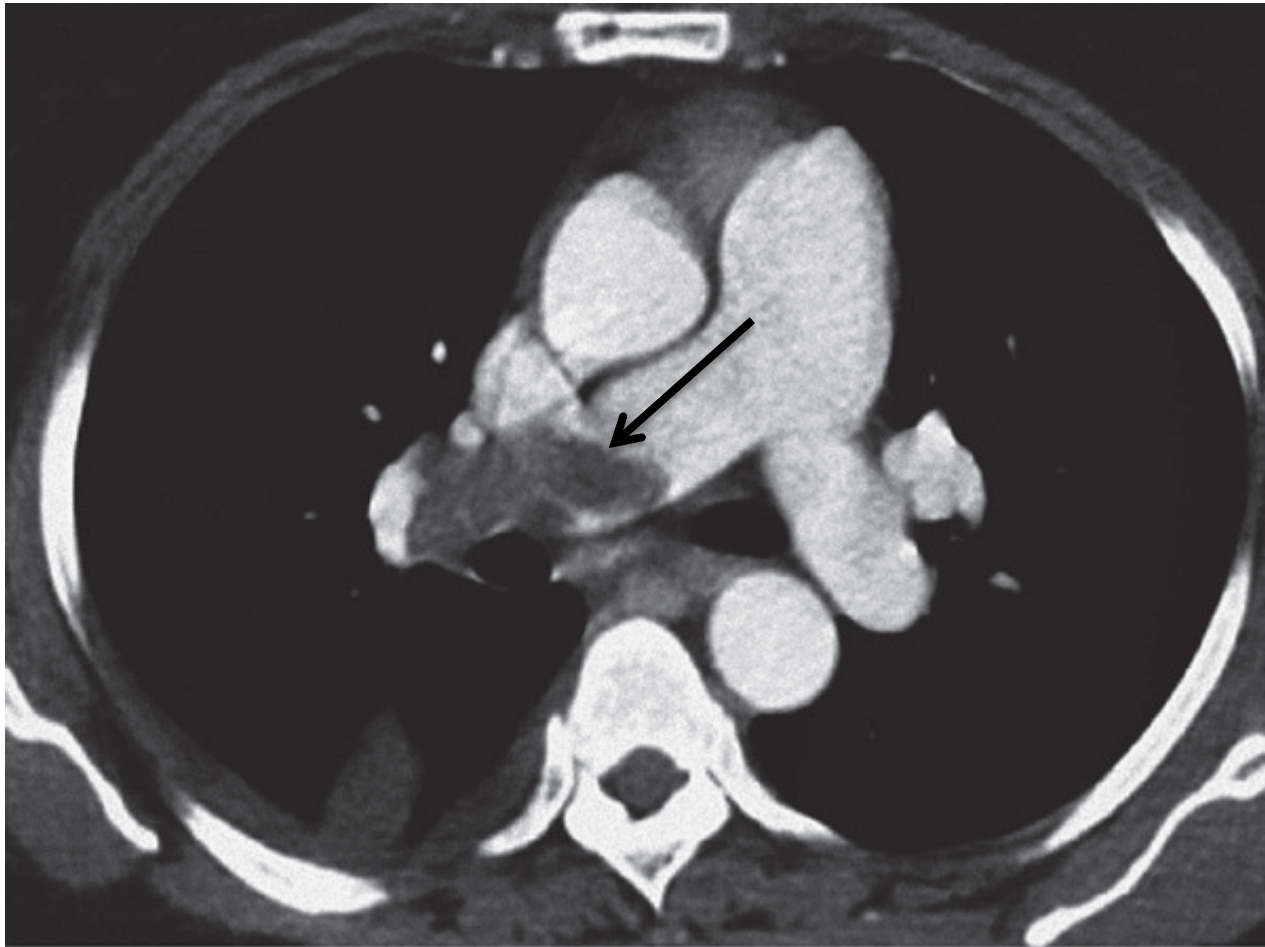


**-Inferior vena caval filter :**

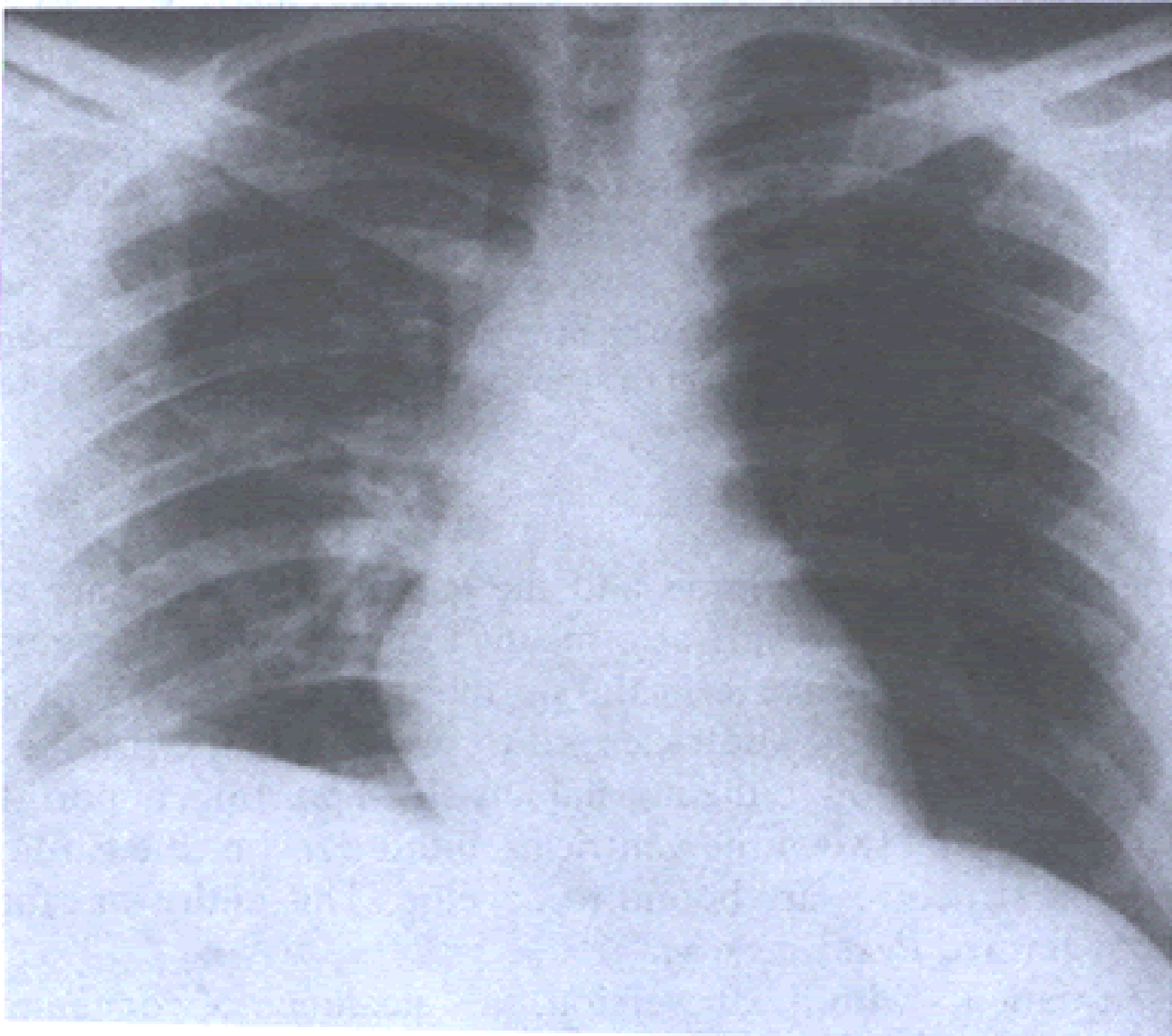




A small pleural effusion and an elevated diaphragm



CT pulmonary angiographic image at level of the main right and left pulmonary arteries showing a large thrombus (arrow) in the right pulmonary artery



Patient with massive pulmonary embolism obstructing the left main pulmonary artery. Note the uneven distribution of pulmonary blood flow between the two lungs in favor of the right.



# *Pulmonary angiography*

- *has now been replaced by CT*
- *and MR angiography.*

