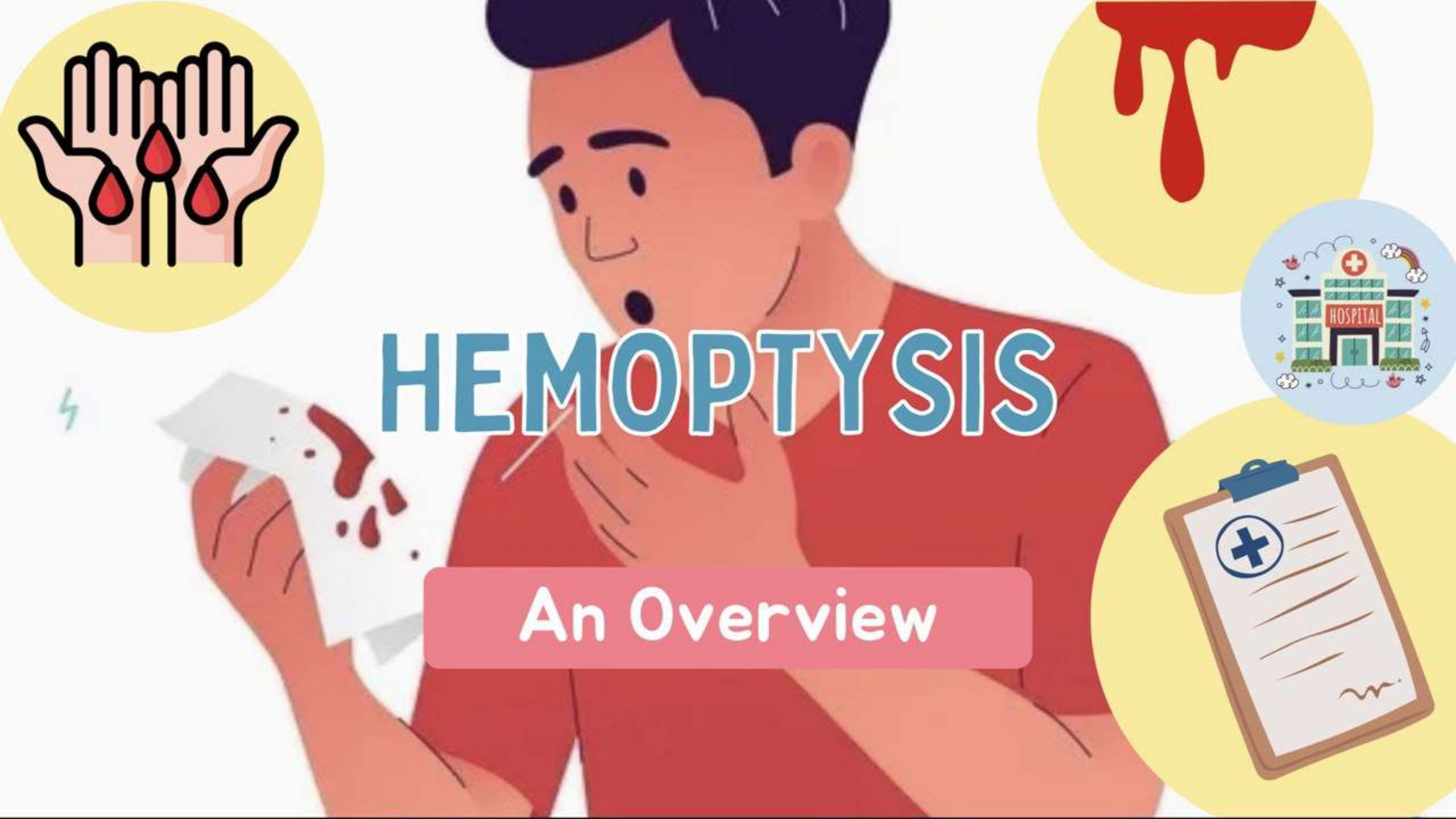


HEMOPTYSIS

An Overview

LEARNING CONTENT

1. What is Hemoptysis?
2. Symptoms
3. Causes
4. Diagnosis
5. Treatment
6. Self management

WHAT IS HEMOPTYSIS

Hemoptysis is defined as coughing of blood originating from below the vocal cords.

The word "hemoptysis" comes from the Greek "haima" meaning "blood" & "ptysis" which means "a spitting".

Hemoptysis can range from blood-streaking of sputum to the presence of gross blood in the absence of any accompanying sputum.

HEMOPTYSIS

MASSIVE

The amount of blood is more than 600 ml/day

NON-MASSIVE

Caugh up blood between 20-200 ml/day

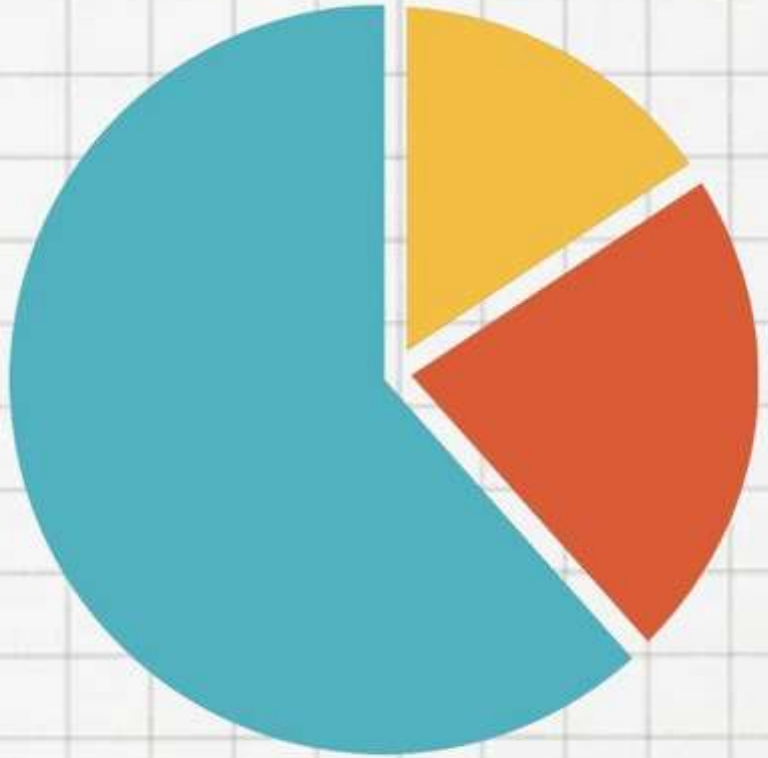
MILD

cough up blood less than 20 ml/day

CAUSES AND DDX:

Source of bleeding could be :

- Bronchial arteries 90%
- Pulmonary arteries 5%
- Systemic arteries 5%



Most common causes include :

Pulmonary causes :

- Bronchitis - viral or bacterial (50% of cases)
- TB the most common cause of hemoptysis worlwide
- Lung cancer (bronchogenic carcinoma) - 2nd most common cause
- Aspergilloma within cavities
- Bronchiectasis
- Cystic fibrosis

Cardiac causes:

- Mitral stenosis (elevated pulmonary venous pressure)

. CHE

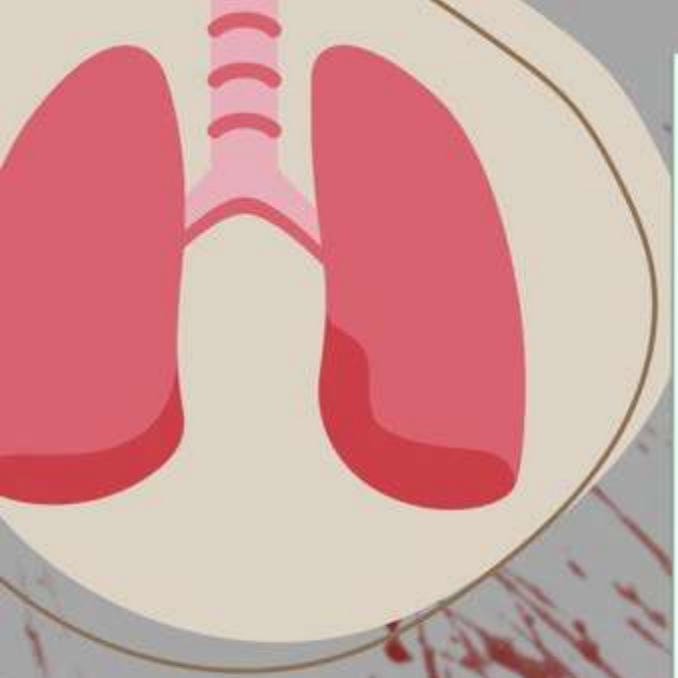
. Pulmonary HTN

Vascular causes :

- Vasculitis (Goodpasture syndrome (anti-GBM antibody disease), behcet disease, granulomatosis with polyangitis)
- PE
- AV malformation

Other causes

- Hemophilia
- Meds (anticoagulant)
- Thrombocytopenia
- Trauma
- Iatrogenic (lung bx)
- Idiopathic



17.9 Causes of haemoptysis

Bronchial disease

- Cancer*
- Bronchiectasis*
- Acute bronchitis*
- Bronchial adenoma
- Foreign body

Parenchymal disease

- Tuberculosis*
- Suppurative pneumonia
- Parasites (e.g. hydatid disease, flukes)
- Lung abscess
- Trauma
- Actinomycosis
- Mycetoma

Lung vascular disease

- Pulmonary infarction*
- Goodpasture's syndrome (p. 612)
- Polyarteritis nodosa
- Idiopathic pulmonary haemosiderosis

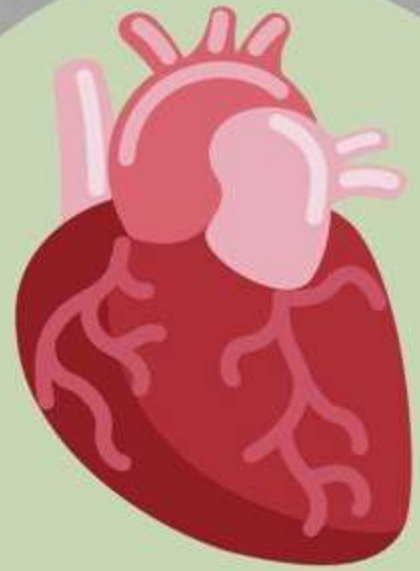
Cardiovascular disease

- Acute left ventricular failure*
- Mitral stenosis
- Aortic aneurysm

Blood disorders

- Leukaemia
- Haemophilia
- Anticoagulants

*More common causes.



DIAGNOSIS

- 1. Verify that hemoptysis has truly occurredFor example, superficial mouth lacerations, epistaxis, or hematemesis may be confused with hemoptysis.

DIAGNOSIS

* HISTORY
* EXAM
* BLOOD TESTS
* IMAGING
* BRONCHOSCOPY

HISTORY AND EXAMINATION

History Taking:

- Onset : did it start suddenly or gradually?
- Duration (for how long? Acute/Chronic)
- Number of attacks (Frequency)
- Amount of blood?
- During attack (amount .. color .. content) is it pure blood or mixed with sputum?
- Bleeding from other sites (rectal, hematuria , hematemesis)
- Associated symptoms (fever, chills, night sweats, mucocutaneous bleeding, weight loss.
- Past medical history (TB, chronic bronchitis, mitral valve stenosis, previous DVT.)
- Drug history (Anticoagulants, NSAIDs).

a. Fever, night sweats, and weight loss suggest TB

b. Fevers and chills or a history of HIV suggests either pneumonia or TB.

c. Look for risk factors for PE.

d. In the presence of acute renal failure or hematuria, Goodpasture syndrome should be considered.

e. If the patient is male with age >50 with chronic cough, repeated small haemoptysis, weight loss, loss of appetite, fever and night sweat with history of smoking = lung cancer.

f. History of recurrent infections, large amount of sputum and SOB= bronchiectasis.

g. History of chest pain,slight fever and wheezy breathing = Acute Bronchitis

Physical examination:

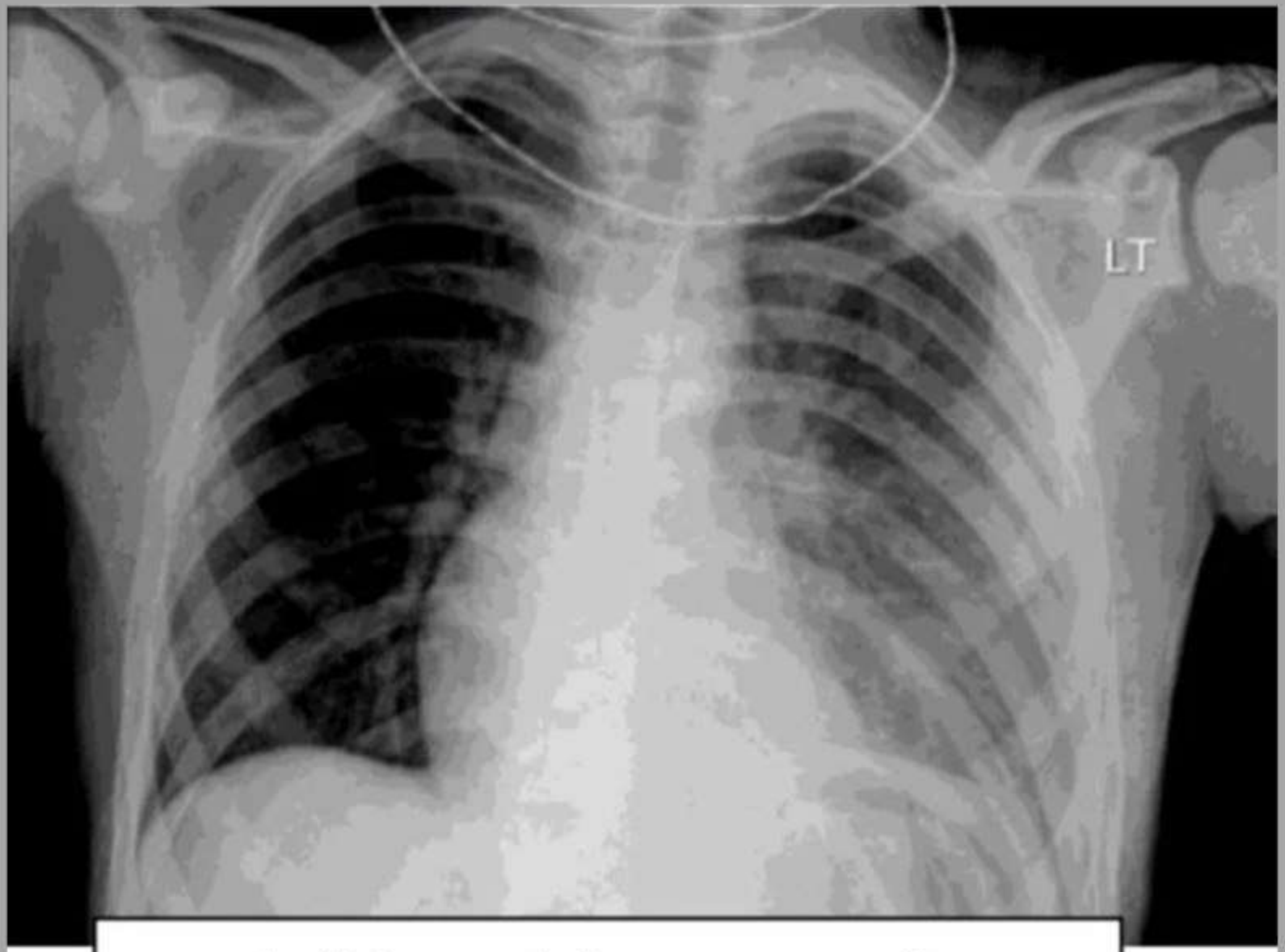
Clinical Physical Sign	Suggested Diagnosis
Cachexia, hepatomegaly, lymphadenopathy	Malignancy
Clubbing	Primary lung cancer or bronchiectasis
Dullness on percussion , pleural rub + fever	Pneumonia or pulmonary infection
Heart murmur + pectus excavatum	Mitral Valve Stenosis
Oro-facial and mucus membrane telangiectasia + epistaxis	Osler-Weber-Rendu disease
Unilateral lateral leg swelling or pain + dyspnea + pleural friction rub	DVT and PE
Rashes, hematuria, digital infarcts	Systemic disease; ex. Vasculitis
Tympani to percussion over lung apices, cachexia	TB

Investigations:

Chest X-ray:

which may provide evidence of a localised lesion, including tumour (malignant or benign), pneumonia, mycetoma or tuberculosis

A normal CXR does not exclude a serious condition, especially PE and even lung cancer



Left lower lobe pneumonia

LAB TEST

~CBC , coagulation panel Look for anemia, thrombocytopenia, coagulopathy

~KFT for renal injury as in Goodpasture

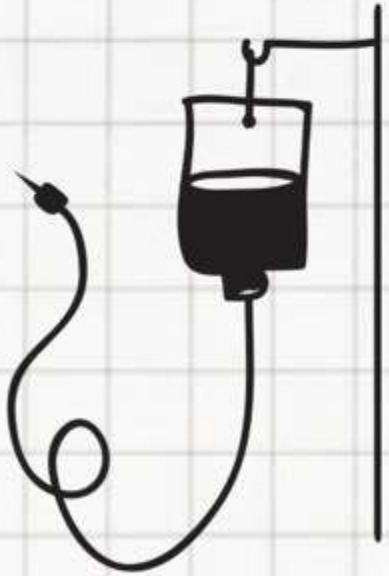
~LFT for coagulopathy if liver failure

~Inflammatory markers (CRP) if infection is the cause

~ Sputum cx

CT CHEST WITH IV CONTRAST

WHICH MAY SHOW UNDERLYING PULMONARY THROMBOEMBOLIC DISEASE OR ALTERNATIVE CAUSES NOT SEEN ON THE CHEST X-RAY (E.G. PULMONARY ARTERIOVENOUS MALFORMATION OR SMALL OR HIDDEN TUMOURS)



BRONCHOSCOPY

INDICATIONS

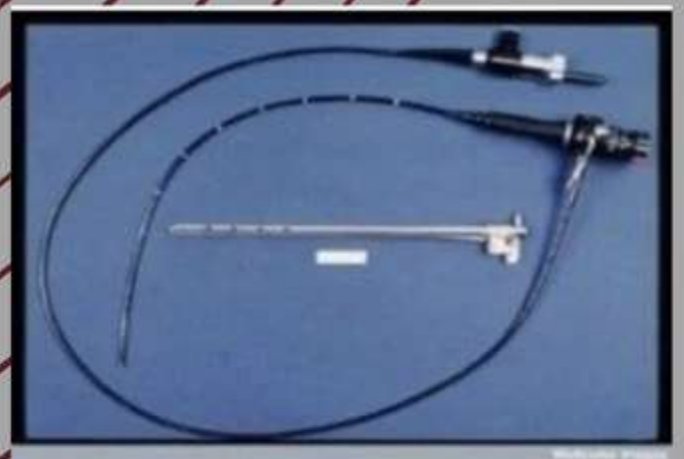
ALL UNSTABLE PATIENTS: TO FACILITATE SIMULTANEOUS DIAGNOSIS AND MANAGEMENT OF BLEEDING

EVALUATION OF SUSPICIOUS LESIONS ON IMAGING, INCLUDING BIOPSY

TO OBTAIN SAMPLES FOR FURTHER STUDIES VIA BRONCHOALVEOLAR LAVAGELOOK

FIBEROPTIC BRONCHOSCOPY (TO RULE OUT MALIGNANCY IN HIGH-RISK PATIENTS : MALE / ABOVE 40 YRS /SMOKING HISTORY OF MORE THAN 40 PACKS-YEARS / HISTORY OF HEMOPTYSIS OF MORE THAN 1 WEEK DURATION)

Rigid Bronchoscopy	Flexible (Fiberoptic) Bronchoscopy
Has large diameter So has more suction capability	Smaller
Done under general anesthesia	Under local anesthesia (conscious patient)
Diagnostic and therapeutic	Just diagnostic
We can use multiple tools at time	One tool at a time



Managemet:

1. stabilize the patient
2. Treat the underlying cause.
3. Suppress the cough if it is aggravating the hemoptysis.
4. Correct bleeding diathesis

-Bronchoscopy in the acute phase is difficult and often merely shows blood throughout the bronchial tree. Infusions of the antifibrinolytic agent tranexamic acid or the vasopressin precursor terlipressin may help to limit bleeding but evidence of efficacy is limited.

-If radiology shows an obvious central cause, then rigid bronchoscopy under general anaesthesia may allow intervention to stop bleeding; however, the source often cannot be visualized.

-Intubation with a divided endotracheal tube may allow protected ventilation of the unaffected lung to stabilise the patient.

-Bronchial arteriography and embolisation or even emergency surgery, can be life-saving in the acute situation.

- ALL patients with (large or small amount of blood) must receive conservative treatment for the control of hemoptysis, irrespective of the amount of blood expectorated, along with necessary measures for management of the primary disease.

.The conservative treatment involves absolute bed rest, cough suppressant medications like codeine, mild sedation with alprazolam, antibiotics, and other supportive measures.

Up to 90% will relieve only by this conservative supportive approach without recurrence

Thank You!

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