# Hemoptysis

Majida Akayleh
Mallak Alja'fari

11-2020

## *DEFINITION*

- *Haemoptysis : is coughing up of blood or blood-stained sputum either from the lung or tracheobronchial tree .*
- *The blood may be bright red or pink and frothy, or it may be mixed with mucus .*
- *Hemoptysis is classified as massive and non-massive based on amount of blood that cough up.*
- *Massive is considered if the amount of blood more than 500 ml per day.*
- *The amount of blood does not necessarily correspond with prognosis of underlying cause.*
- *The bleeding from bronchial tree will be profuse due to high pressure in systemic circulation while bleeding from lung will be small due to low pressure in pulmonary circulation .*

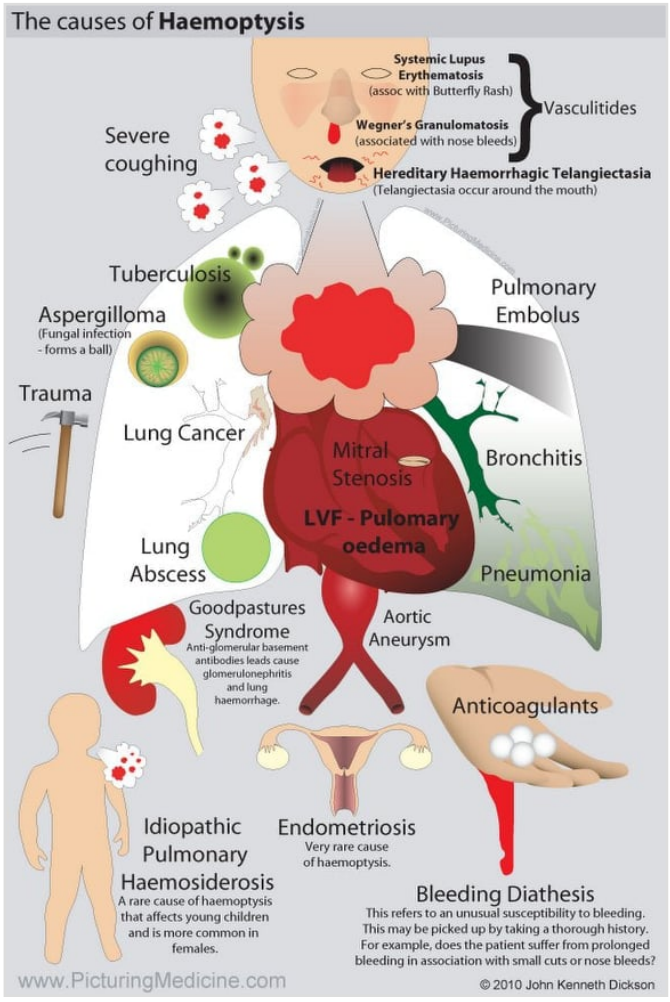
---

## *Causes of hemoptysis*

**i 17.9 Causes of haemoptysis**

| | |
|---|---|
| **Bronchial disease** | |
| • Cancer* | • Bronchial adenoma |
| • Bronchiectasis* | • Foreign body |
| • Acute bronchitis* | |
| **Parenchymal disease** | |
| • Tuberculosis* | • Lung abscess |
| • Suppurative pneumonia | • Trauma |
| • Parasites (e.g. hydatid disease, flukes) | • Actinomycosis |
| | • Mycetoma |
| **Lung vascular disease** | |
| • Pulmonary infarction* | • Polyarteritis nodosa |
| • Goodpasture's syndrome (p. 612) | • Idiopathic pulmonary haemosiderosis |
| **Cardiovascular disease** | |
| • Acute left ventricular failure* | • Aortic aneurysm |
| • Mitral stenosis | |
| **Blood disorders** | |
| • Leukaemia | • Anticoagulants |
| • Haemophilia | |

*More common causes.



## *History taking*

1. *Onset*
2. *course*
3. *Duration (for how long)*
4. *Number of attacks*
5. *During attack (amount .. color .. content)*
6. *Bleeding from other sites*

---

7. *Associated symptoms*

*fever, chills, night sweats, mucocutaneous bleeding, weight loss.*

---

8. *Past medical history*

*TB, chronic bronchitis, mitral valve stenosis, previous DVT.*

---

9. *Drug history*

*Anticoagulants, NSAIDs.*

---

10. *For Differential diagnosis*

Exclude a pseudo haemoptysis, eg. superficial mouth laceration, epistaxis and hematemesis.

Fever

Night sweats

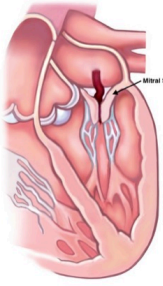
Weight loss

Leg swelling (DVT)

Chills

Mouth laceration

Epistaxis



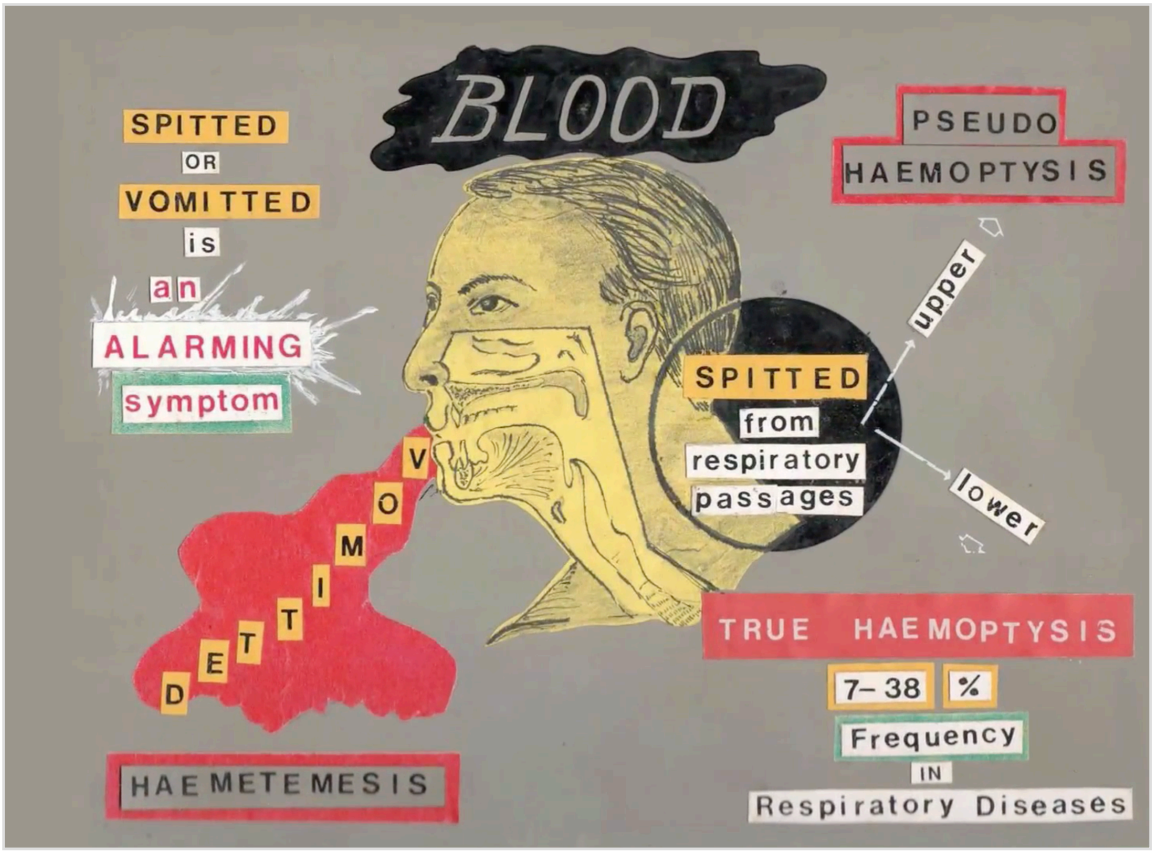

Mitral stenosis

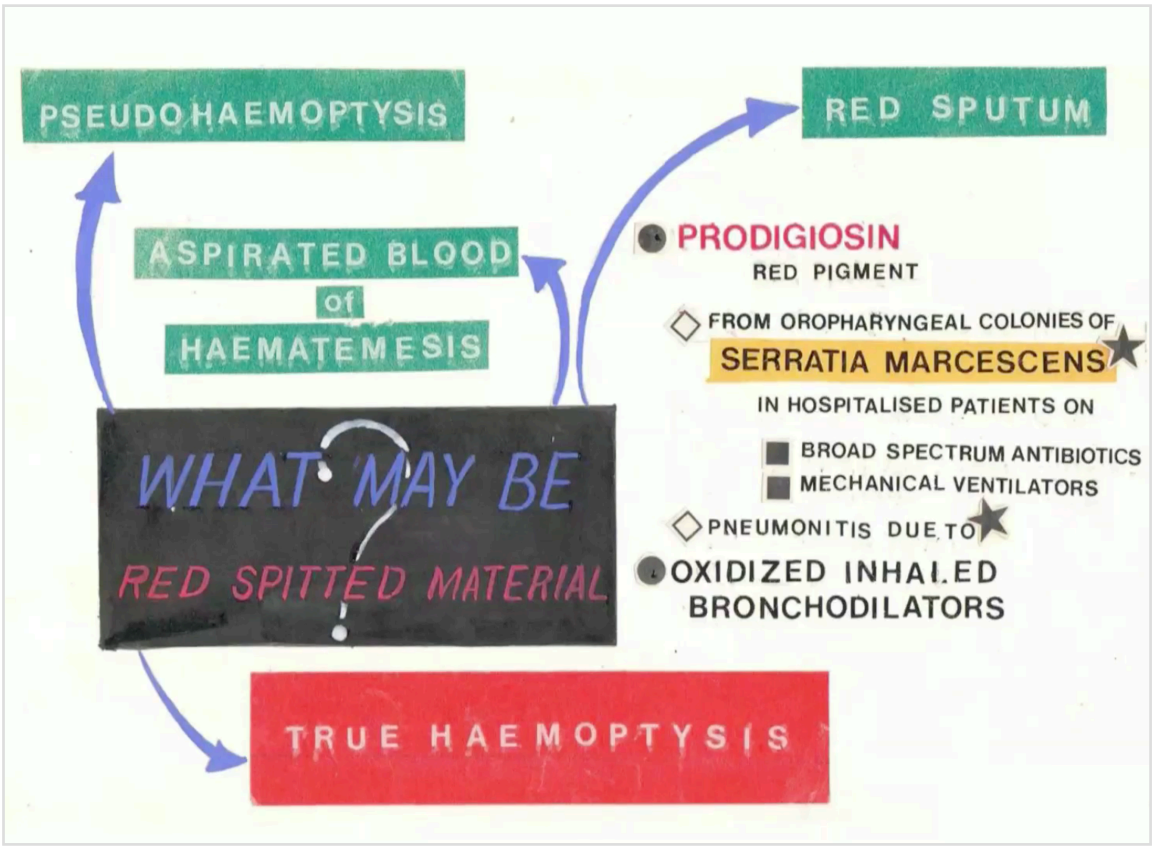
Mucus mem bleeding

## *By history taking.*

- *If fever+ night sweats + weight loss =TB.*
- *If fever + chills or history of HIV =* TB or *pneumonia.*
- *If the patient is male with age >50 with chronic cough, Repeated small haemoptysis, weight loss, loss of appetite and fever with history of smoking = lung cancer.*
- *Pneumococcal pneumonia ='rusty'-colored sputum but can also cause frank haemoptysis.*
- *History of previous DVT , sudden haemoptysis with SOB = pulmonary embolism.*
- *History of recurrent infections and large amount of sputum = bronchiectasis.*
- ***All suppurative pneumonic infections, including lung abscess, Bronchiectasis can cause catastrophic bronchial haemorrhage.***

***Make sure it is true hemoptysis.***



## *Physical examination indications.*

1. *Hepatomegaly, lymphadenopathy, cachexia —> malignancy*
2. *Clubbing —> primary lung cancer or bronchiectasis*
3. *Dullness on percussion , pleural rub + fever —> pneumonia*
4. *Heart murmur + pectus excavatum —> mitral valve stenosis*
5. *Oro-facial and mucus membrane telangiectasia + epistaxis —> Osler-Weber-Rendu disease*
6. *Unilateral lateral leg swelling or pain + dyspnea + pleural friction rub—>DVT and PE*
7. *Rashes, hematuria, digital infarcts —> Systemic disease; ex. Vasculitis*
8. *Tympani to percussion over lung apices, cachexia —> TB*

| Clinical physical clue | 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 |


Cachexia

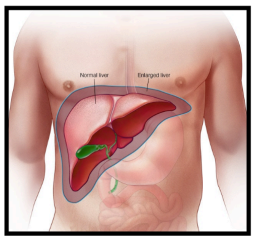

Clubbing


Leg swelling


Pecuts excavatum


Lymphadenopathy


epistaxis



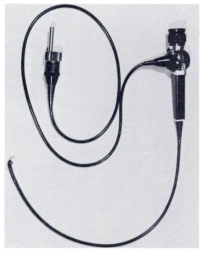
Hepatomegaly


telangiectasia

# *Investigations.*

***1. Careful history and examination***
***2. Chest Xray (gives findings of malignancy, TB, pneumonia, pulmonary edema)***
***3. Chest commuted tomography (CT pulmonary angiography is gold standard in diagnosing PE / high resolution CT is gold standard in diagnosing bronchiectasis)***
***4. Direct visualization by bronchoscopy (should be performed by an experienced endoscopic team)***

| ***Bronchoscopy usings:*** |
|---|
| *Identify the anatomic site and side of the bleeding* |
| *Assess the nature of the bleeding source (endobronchial lesion, central vascular fistulas vs parenchymal)* |
| *Assess the severity of bleeding* |
| *Evaluate the feasibility of therapeutic bronchoscopic intervention if required* |
| *Collect samples for cytologic, pathologic, and microbiologic purposes, which will impact the treatment and prognosis.* |



*Rigid bronchoscopy has some advantages over flexible fiberoptic bronchoscopy in patients with hemoptysis. It permits effective airway toilet (hygiene), facilitates endobronchial control and, with techniques such as cold saline lavage, instillation of epinephrine, and laser photocoagulation, may allow hemostasis to be achieved.*

***5. 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 )***

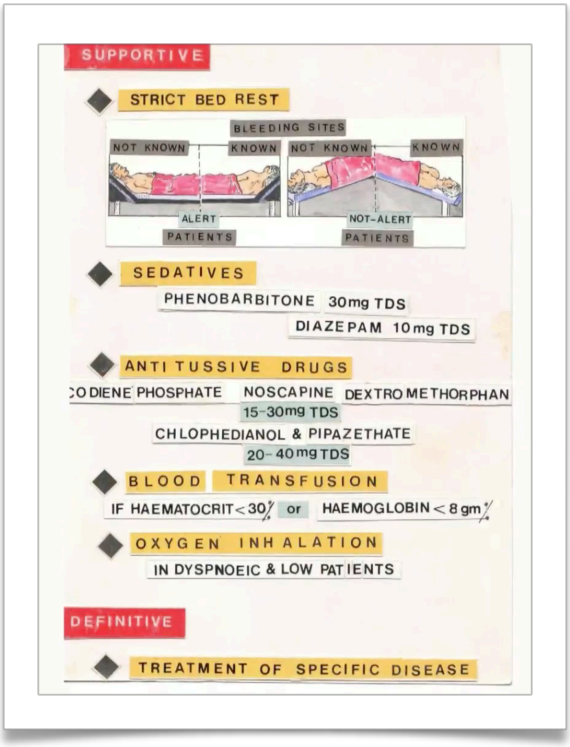
---

# *Clinical approach.*

*All patients 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 comprises absolute bed rest, cough suppressant medications like codeine, mild sedation with alprazolam, antibiotics, and other supportive measures. Some studies warrant a relieve percentage up to 90% only by conservative supportive approach.*

*Massive hemoptysis patients require intensive care and early consultation with a pulmonologist. In cases of massive or life-threatening hemoptysis, diagnosis and therapy must occur simultaneously.*

*In severe acute haemoptysis, the patient should be nursed upright (or on the side of the bleeding, if this is known), given high-flow oxygen and resuscitated as required. 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 stabilize the patient.*




---

# *Thank you*