

HEMOPTYSIS

- Hemoptysis is defined as coughing of blood originating from below the vocal cords
- Hemoptysis can range from blood-streaking blood-streaking of sputum to the presence of sputum to the presence of gross blood the absence of any accompanying sputum.
- True hemoptysis is hemoptysis Below vocal cords , Persists as blood tinged sputum, CXR may be abnormal.
- False hemoptysis Above vocal cords , Not mixed with sputum, examination Obvious by ENT examination CXR Normal CXR

- Life threatening or (massive) hemoptysis defined as coughing of blood >150ml/time or >600ml/24 hours
- **Hemoptysis** is the coughing up of blood or blood-stained mucus from the bronchi, larynx, trachea, or lungs.
- In other words, it is the airway bleeding. This can occur with lung cancer, infections such as tuberculosis, bronchitis, or pneumonia, and certain cardiovascular conditions.

Approach for management of hemoptysis

1. Make sure that this is a true hemoptysis
2. Identify severity of hemoptysis
3. History and examination
4. Diagnostic investigation
5. Treatment

- Past history, history of present illness, family history
 - history of tuberculosis, bronchiectasis, chronic bronchitis, mitral stenosis, etc.
 - history of cigarette smoking occupational diseases by exposure to silica dust, etc.
 - History of use of anticoagulant
- Blood
 - duration, frequency, amount
 - Amounts of blood: large amounts of blood, or is there blood-streaked sputum
 - Probable source of bleeding: Is the blood coughed up, or vomited?
- Bloody sputum
 - color, characters: blood-streaked, fresh blood, frothy pink, bloody gelatinous.
- Accompanying symptoms
 - fever, chest pain, coughing, purulent sputum, mucocutaneous bleeding, jaundice.

Important points to address in History



Clinical Clues

Anticoagulant use

Association with menses

Dyspnea on exertion, fatigue, orthopnea, PND, frothy pink sputum

Fever, productive cough

History of breast, colon, or renal cancers

History of chronic lung disease, recurrent LRTI, cough with copious purulent sputum

Melena, alcoholism, chronic use of NSAIDs

Pleuritic chest pain, calf tenderness

Tobacco use

Toxic symptoms

Weight loss

Suggested Diagnosis

Medication effect, coagulation disorder

Catamenial hemoptysis

Congestive heart failure, Lt V. dysfunction, MS

URTI, acute bronchitis, pneumonia, lung abscess

Endobronchial metastatic lung disease

Bronchiectasis, lung abscess

Gastritis, gastric or peptic ulcer, esophageal varices

Pulmonary embolism or infarction

Acute bronchitis, chronic bronchitis, lung Ca, pneumonia

Tuberculosis

Emphysema, lung cancer, TB, bronchiectasis, lung abscess

Examination

Clinical Clues

Cachexia, clubbing, hoarseness, Cushing's syndrome, hyperpigmentation, Horner's syndrome

Clubbing

Dullness to percussion, fever, crepitations

Fever, tachypnea, hypoxia, working accessory respiratory muscles, barrel chest, intercostal retractions, pursed lip breathing, rhonchi, distant heart sounds

Gingival thickening, saddle nose, nasal septum perforation

Mid diastolic rumbling murmur

LN enlargement, cachexia, violaceous skin lesions

Tachypnea, tachycardia, dyspnea, S1Q3T3, pleural friction rub, unilateral leg pain & edema

Suggested Diagnosis

Bronchogenic carcinoma, SCLC

Lung cancer, bronchiectasis, lung abscess

Pneumonia

COPD, Lung cancer, pneumonia

Wegener's granulomatosis

MS

Kaposi's sarcoma 2ry to HIV

Pulmonary thromboembolism

INVESTIGATIONS

| <i>Test</i> | <i>Diagnostic Findings</i> |
|--|--|
| WBCs with differential | ↑ WBCs count & shift to the left in URTI & LRTI |
| Hemoglobin & hematocrit | ↓ in anemia |
| Platelet count | ↓ in thrombocytopenia |
| PT, INR & PTT | ↑ in anticoagulant use, disorders of coagulation |
| ABGs | Hypoxia, hypercarbia |
| d-dimer | ↑ in pulmonary embolism |
| Sputum Gram stain, culture, AFB smear & culture | Sputum Gram stain, culture, AFB & culture |
| Sputum cytology | Neoplasm |
| Tuberculin Test | Positive in TB |

Investigations

CXR

| <i>Chest Radiograph</i> | <i>Suggestive Diagnosis</i> |
|---|--|
| Cardiomegaly, increased pulmonary vascular distribution | Chronic heart failure, mitral valve stenosis |
| Cavitary lesions | Lung abscess, TB, necrotizing carcinoma |
| Diffuse alveolar infiltrates | Chronic heart failure, pulmonary edema, aspiration |
| Hilar adenopathy or mass | Carcinoma, metastatic disease, infection |
| Hyperinflation | COPD |
| Lobar or segmental infiltrates | Pneumonia, thromboembolism, obstructing carcinoma |
| Mass lesion, nodules, granulomas | Carcinoma, metastatic disease, Wegener's granulomatosis, septic embolism, vasculitides |

- CT scan
- FOB (fiberoptic bronchoscopy)
- Bronchoscopy
- Angiography(PE)

Management

Goal

1. Evaluate the severity.
2. Airway protection.
3. Identify the site of bleeding.
4. Protect the contralateral uninvolved lung.
5. Stop the bleeding.
6. Treatment of the cause of bleeding.

- **Management**

- **NONMASSIVE HEMOPTYSIS**

- The overall goals of management of the patient with hemoptysis are stop bleeding, aspiration prevention, and treatment of the underlying cause.
- evaluation of the “ABCs” (i.e., airway, breathing, and circulation) is the initial step.

- **MASSIVE HEMOPTYSIS**

- The mortality rate from massive hemoptysis depends on the bleeding rate and etiology. Hemoptysis greater than 1,000 mL per 24 hours in the presence of malignancy carries a mortality rate of 80 percent³ therefore, massive hemoptysis warrants a more aggressive, expedient approach.
- These patients require intensive care and early consultation with a pulmonologist. In cases of massive or life-threatening hemoptysis, diagnosis and therapy must occur simultaneously.
- Airway maintenance is vital because the primary mechanism of death is asphyxiation.
- Supplemental oxygen and fluid resuscitation are essential. Assistance by a cardiothoracic surgeon should be considered because emergency surgical intervention may be needed.

• Thank you.