emDocs

The EM Educator Series

Mini-Case: He's coughing or throwing up blood…

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Mini-Cases:
1: A 34-year-old female presents with chest pain, shortness of breath, and hemoptysis. She has a history of SLE and appears pale and sick on initial impression. She is tachycardic and hypotensive.

2: A 69-year-old male with over 20 years of smoking presents with worsening cough and blood within his sputum. He denies other symptoms, and his VS are normal. However, he is concerned about the blood.

Questions for Learners:

1) Hemoptysis vs oropharyngeal bleeding vs epistaxis vs hematemesis – how to differentiate?

2) What are the etiologies of hemoptysis?

3) What should consist in your ED-based work-up?

4) ED management – what can the EP do / who can help us?

Suggested Resources:

- ✓ Articles:
  - emDOCs Hemoptysis: Key principles and management
  - First 10 EM – Massive Hemoptysis
  - Hemoptysis – Taming the SRU
  - Crashing Patient – Hemoptysis
  - LITFL – Massive haemoptysis
- ✓ Podcasts:
  - EMCrit Podcast 199 – Management of Massive Hemoptysis with Oren Friedman
  - EMCrit-RACC – A Wee Bit More on Massive Hemoptysis
  - FOAMcast Episode 33 – Hemoptysis
- ✓ Book Chapters:
  - Tintinalli's, 8th edition, Ch. 63

Answers for Learners:

1) Hemoptysis vs oropharyngeal bleeding vs epistaxis vs hematemesis – how to differentiate?

- Hematemesis usually has history of dark stools, nausea or abd pain, + GUAIAC
- Epistaxis – identify on exam
- Hemoptysis – bright colored, concern about asphyxiation

2) What are the etiologies of hemoptysis?

- Infectious => acute bronchitis (leading cause US), TB (leading cause worldwide), parasites, Mycetoma
- Structural => bronchiectasis, tracheoarterial fistula, aortobronchial fistula, pneumonitis
- Vasculitis => Wegener's, Goodpasture, Lupus, Behcet's
- Cardiovascular => PE with infarction, pulmonary HTN (mitral stenosis, CHF, left sided endocarditis)
- Neoplastic => bronchogenic CA, bronchial adenoma
- Iatrogenic => bronchoscopy, biopsy, pulmonary artery catheter injury
- Trauma => ruptured bronchus, penetrating, contusion
- Misc => cocaine inhalation, nitrogen dioxide inhalation, catamenial (pulmonary endometriosis)
- 90% of bleeds from bronchial arteries

3) What should consist in your ED-based work-up?

- ABCs, if stable thorough PEx to identify source of bleeding (epistaxis, wheezing or crackles)
- If minor hemoptysis, no tests unless anticoag medicine
- If major, CBC, coags, UA, CMP, type and screen => CBC can be normal for 6 hours
- CXR, CT/CTA if stable
- Minor vs major: 100 ml per 24 hours vs > 1000 ml per 24 hours; minor is HDS patient

4) ED management – what can the EP do / who can help us?

- Severe hemoptysis: consult CT surgery and IR immediately after airway management
- If trach, look for fistula and attempt to apply direct pressure
- If no trach, consider RSI with large diameter ETT for bronch access; can consider intubating good lung
    - High risk intubation, preoxygenate, head of bed up, 2 working suctions, large ETT, direct probably better than video due to secretions, can use meconium aspirator to assist clearing secretions
    - Get cric kit ready
    - Consider anesthesia assistance vs ENT vs pulm for bronch/bronchial blocker
- Affected lung down
- ? Fogarty catheter (14 Fr) to tamponade affected lung
- Cric if unable to intubate
- Reverse anticoag if they are anticoagulated