



Hemoptysis in immigrant populations

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Introduction

This case describes an immigrant from Puerto Rico who presents to the emergency department with complaints of hemoptysis. This case serves as a reminder of the numerous etiologies of hemoptysis including infectious, malignant, cardiogenic, and rheumatologic among others. When faced with a broad differential, remember the axiom "worst first."

Presentation

HPI: Patient is a 31 yo M who presents with 2 episodes of hemoptysis today described as blood-tinged sputum. He notes an insidious onset of cough persisting for 4-5 months which precipitously worsened 1 week ago. He now reports central CP worse with cough.

ROS: + fever, dental problem, cough, hemoptysis, chest tightness, SOB, CP, back pain. - Skin color changes

PMH: noncontributory

PSH: Wisdom tooth extracted 6 days prior located to the left lower jaw without complications and without drainage. Appendectomy, ACL repair

Allergies: PCN (unknown reaction)

Medications: None

Social: Smokes 1/2 PPD for 3.5 pack years. Occasional alcohol, no illicit drug use. Immigrant from Puerto Rico, last there 4 months ago.

Immunization history unknown. Works as a janitor exposed to strong chemicals, uses a respirator.

Physical Exam:

Vitals: BP 113/70, P 82, T 98.9, RR 20 @ 95%

General: Alert, no distress

HEENT: Bilateral tympanic membranes normal. Posterior oropharynx erythematous. Wisdom tooth surgical site left lower jaw intact with good wound approximation, no active drainage or signs of infection.

Neck: Bilateral submandibular and anterior cervical chain tender lymphadenopathy. No supraclavicular or posterior lymphadenopathy.

Heart: Regular rate and rhythm, no murmurs

Lungs: Clear. Multiple deep coughs during exam, dry. No respiratory distress.

Abdomen: Soft, nontender.

Skin: Warm and dry. No petechiae or purpura. No erythema nodosum.

Differential

- Atypical pneumonia
- Bronchogenic carcinoma
- Bronchopulmonary Aspergillosis
- Chronic sinusitis
- Dental wound dehiscence
- Goodpasture syndrome
- Lung abscess
- Mitral stenosis
- Subacute hypersensitivity pneumonitis
- Tuberculosis
- Viral bronchitis

Course

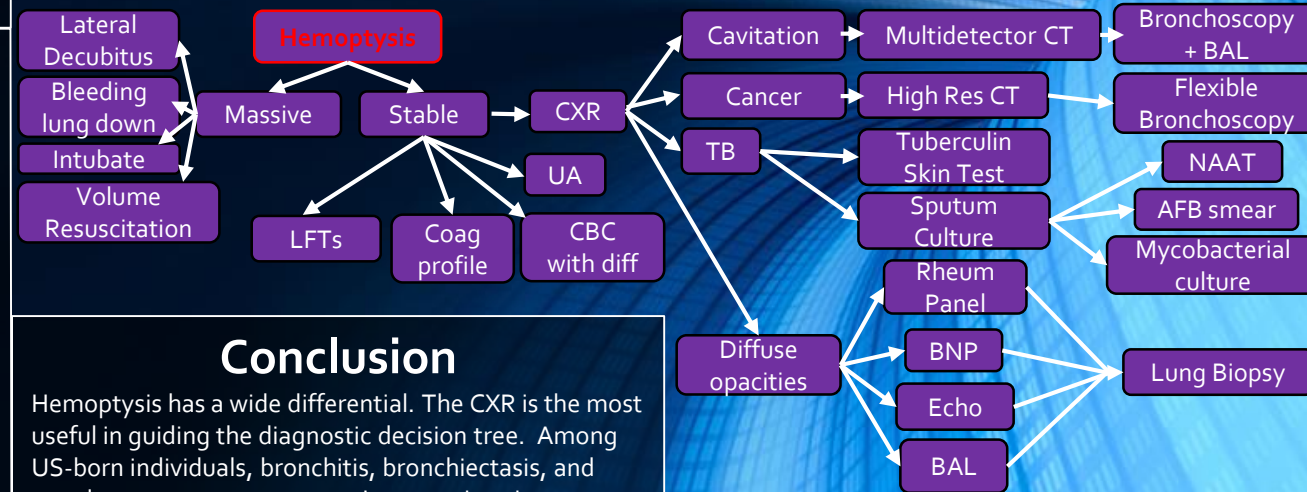
CBC: WBC 11.8 (H)
Hemoglobin 13.8 (N)
Hematocrit 41.7 (N)
Neutrophils % 77.3 (H)
Lymphocytes % 9.6 (L)
Monocytes 11.9 % (H)
Abs Eosinophils 0.1 (N)
CMP: Normal
Respiratory Filmarray:
Influenza A
AFB culture: pending
CXR: Normal

Diagnosis

Impression: Influenza A
Disposition: Discharge
Treatment: Albuterol Inhaler

Discussion

The emergency department sees everything but will only have one opportunity to get it right meaning we cannot miss fatal diagnoses. While the most common causes of hemoptysis in developed countries are bronchitis, bronchiectasis, and neoplasm, in underdeveloped countries Tuberculosis and *Paragonimus Westernmani* (lung fluke) predominate. During 2016, 9272 cases of TB were reported in the US. US-born incidence was 1.1/100,000 while foreign-born was 14.7/100,000. Asian immigrants had the highest case rate at 18.0/100,000. Other endemic regions include Latin America, Eastern Europe, and Africa. TB is the 9th leading cause of death worldwide and is the leading cause of death from a single infectious agent. Given this patient's immigration status from Puerto Rico, TB is highly worrisome. The most important diagnostic tool for evaluation of hemoptysis remains the CXR. This patient's CXR is negative, making TB very unlikely. One lingering area of uncertainty remains the 4-5 month prodromal cough which may be due to cigarette smoke or chemical exposures from work leading to chronic sinusitis or early subacute hypersensitivity pneumonitis. It could also be recall bias. Given the Influenza A positive respiratory filmarray, it is likely the viral infection which precipitated a pseudo-hemoptysis from the recent dental surgical procedure.



Conclusion

Hemoptysis has a wide differential. The CXR is the most useful in guiding the diagnostic decision tree. Among US-born individuals, bronchitis, bronchiectasis, and neoplasm are most common. In recent immigrants, consider TB and *P. Westernmani*.

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