03/19/21 Morning Report with @CPSolvers

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CC: Chest pain and hemoptysis.

HPI: 18 yo male presented with 7 months of fever, cough and tiredness with physical activity. 5 months before, he started to expectorate bright blood, at that time he was prescribed amoxicillin and acetaminophen in a clinic, but the symptoms did not resolve. 5 days before presentation he was swimming in a river and started to cough bright red blood. That night he also had fever and diaphoresis. He also lost 5 kg and was sleeping 13 hours every day (abnormal for him). At presentation to the ER he couldn't walk many blocks, and complained of chest pain that was worse with inspiration progressively worsening in intensity. Also had sputum with salty taste.

PMH: diagnosed with TB 3 years before presentation and completed treatment
At 3 months suffered from respiratory distress and hospitalized for 6 months
Asthma
Recurrent headache
Meds:
Salbutamol

Fam Hx: orphan, lives with his uncle. 14 yo sister: epilepsy. Brother: 16 yo brother with "heart problem"
Soc Hx: Peru, high populated town
Health-Related Behaviors:
sometimes go to a river
Allergies: nothing

Vitals: **T**: **39C** **HR**: **73** **BP**: **120x80** **RR**: **10** **SpO_2**:
Exam:
Gen: dyspneic, looking tired
CV: normal
Pulm: mild bronchial breath sounds in the lower lobe and crackles.
Abd: mild abdominal pain on palpation, no ascites or hepatosplenomegaly
Neuro: normal
Extremities/Skin: pruritis in the lower extremities + 2 nodules in the inguinal region, not painful or erythematosus

Notable Labs & Imaging:
Hematology:
WBC: 11.000 with eosinophilia (10%)

Imaging:
CXR: bilateral hilar lymphadenopathy, air/liquid level / cavernous structure at the apical lobe. Medium size nodule like radiopacity on the right medium lobe.
Sputum negative for acid fast bacilli.
Thoracic CT: air-fluid level inside the nodule.
ELISA for Echinococcus positive

Final diagnosis: Pulmonary Echinococcosis
He was discharged after treatment with Albendazole, and was recovering very well.

Problem Representation: 18M w/asthma, previously treated TB and river water exposure p/w inflammatory state with pulmonary focus, and found to have hilar LAD, eosinophilia, and pulmonary nodule.

Teaching Points (Rafa):

- **APPROACHING YOUNG PATIENT W/ CHEST PAIN AND HEMOPTYSIS**
  Chest pain: rule out first emergency causes! 4+2+2!
  Heart: ACS, aortic dissection, tamponade, Takotsubo
  Lung: Pneumothorax, pulmonary embolism
  Esophagus: Rupture, impaction
  Anatomical approach - skin (zoter), bone (trauma), muscles (strain), GI (GERD, PUD, diaphragmatic hernia), heart (HF, aortic stenosis), pulmonary (PNA), mediastinal (fat necrosis)
  Hemoptysis: make sure it's not coming from somewhere else - GI tract (esophageal varices), upper respiratory tract
  Abnormal connection between the airway (bronchitis, bronchiectasis) and the vessels (arterial side - PE, pulmonary aneurysm) / venous: HF)
- **FEVER**
  Acute: hyperthermia (drug induced, environmental), hyperthyroidism, heme (blood transfusion reaction), infections
  Subacute to chronic: infections (atypical mycobacteria, TB, Paracocci, Strongyloides, Histoplasma), malignancy (liquid - lymphoma), autoimmune (ANCA-associated vasculitis GPA, EGPA, MPA / Goodpasture/ IgA vasculitis, SLE, Bechet).
- **TB IN PMH** - was this patient treated adequately? Eg, was there any resistance to RIPE therapy? Post-TB complications like Aspergilloma?
- **EOSINOPHILIA -** primary (eosinophilic leukemia, hypereosinophilic syndrome) or secondary (atopy, ABPA, EGPA, parasytes, fungi, adrenal insufficiency)
- **CAVITARY LUNG LESIONS** - chronic process - autoimmune (rare, GPA), infection (lung abscess from anaerobes, granulomatous infections - Nocardia, TB, fungus except Candida, Entamoeba histolytica, Paragonomasus) , malignancy
- **CAVITARY LUNG LESION + EOSINOPHILIA -** Aspergillosis, Coccidioides, Echinococcus (the final dx!!) - Echinococcus - hydatid cysts in yhe liver - cyst can rupture and can cause anaphylaxis - ingestion of eggs in food contaminated with dog feces - sheep are an intermediate host