July 2015 Critical Care Case of the Month: An Unusual Presentation

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History of Present Illness

A 79 year old man was admitted because of a possible seizure. His wife found him unresponsive, displaying tonic-clonic motions with a right facial droop and right-sided weakness. He returned to consciousness, but was confused. A similar episode occurred 2 weeks prior to the present episode. He has additional symptoms of dysphagia with solid food for 6-8 months, a somewhat intentional 20 pound weight loss, night sweats for 4-5 months and fatigue for 1 year.

Past Medical History

- Coronary artery disease with a percutaneous transluminal coronary angioplasty in 1990, placement of 2 drug eluting stents in 2012.
- Idiopathic pulmonary fibrosis on 2-4 L/min home O2
- Myelofibrosis on ruxolitinib, a monoclonal antibody against JAK receptors
- Hypertension
- A remote history of DVT/PE related to surgery with an IVC filter placed
- Splenectomy due to trauma

Social and Family History

- He has a 15 pack-year smoking history, quitting in 1985.
- One brother with lung cancer, another with bladder cancer.

Medications

- Aspirin 81 mg daily
- Plavix 75 mg daily
- HCTZ 25 mg daily
- Metoprolol XL 50 mg daily
- Niacin 500 mg daily
- Protonix 40 mg daily
- Acetaminophen with hydrocodone
- Fish oil

Physical Examination

- Dysarthric
- No facial droop
- Some dysmetria

Which of the following should be ***done at this time***?

1. A CT scan of the brain
2. Begin tissue plasminogen activator (TPA)
3. Chest x-ray
4. 1 and 3
5. All of the above

Correct!
1. A CT scan of the brain

The most emergent consideration is a stroke or cerebrovascular accident since urgent and early treatment of acute ischemic stroke holds a better promise of better neurological outcomes (1). The goal is to complete an evaluation and to begin fibrinolytic treatment within 60 minutes of the patient's arrival in an emergency department. . Emergency imaging of the brain is recommended before initiating any specific therapy to treat acute ischemic stroke. In most instances, non–contrast-enhanced CT or MRI will provide the necessary information to make decisions about emergency management. These imaging studies should take precedent over laboratory and chest radiography evaluation.

The CT of the brain showed a small posterior frontal mass with surrounding vasogenic edema. This was followed by a MRI (Figure 1).

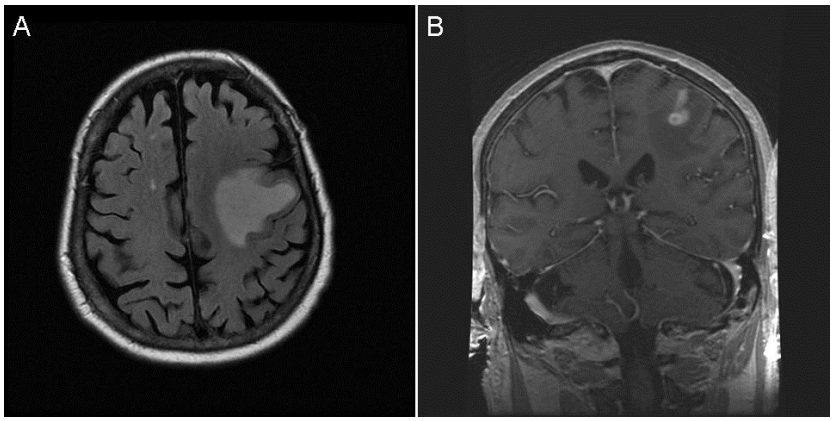

Figure 1. Panel A: Representative axial view of the MRI of the head. Panel B: Representative coronal view.

A chest x-ray was also obtained (Figure 2).

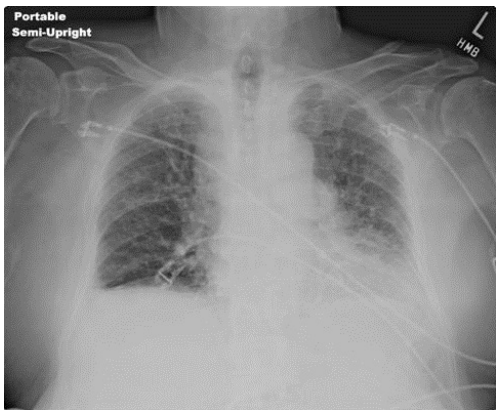

Figure 2. Admission portable chest x-ray.

Which of the following should be ***done next***?

1. Bronchoscopy
2. Echocardiogram
3. Pulmonary angiogram
4. Thoracic CT scan
5. Video-assisted thorascopic biopsy (VATS)

Correct!
4. Thoracic CT scan

The portable AP of the chest shows a widened mediastinum (> 6 cm on upright chest x-ray). The next appropriate test would be a thoracic CT scan to evaluate the mediastinum (Figure 3).

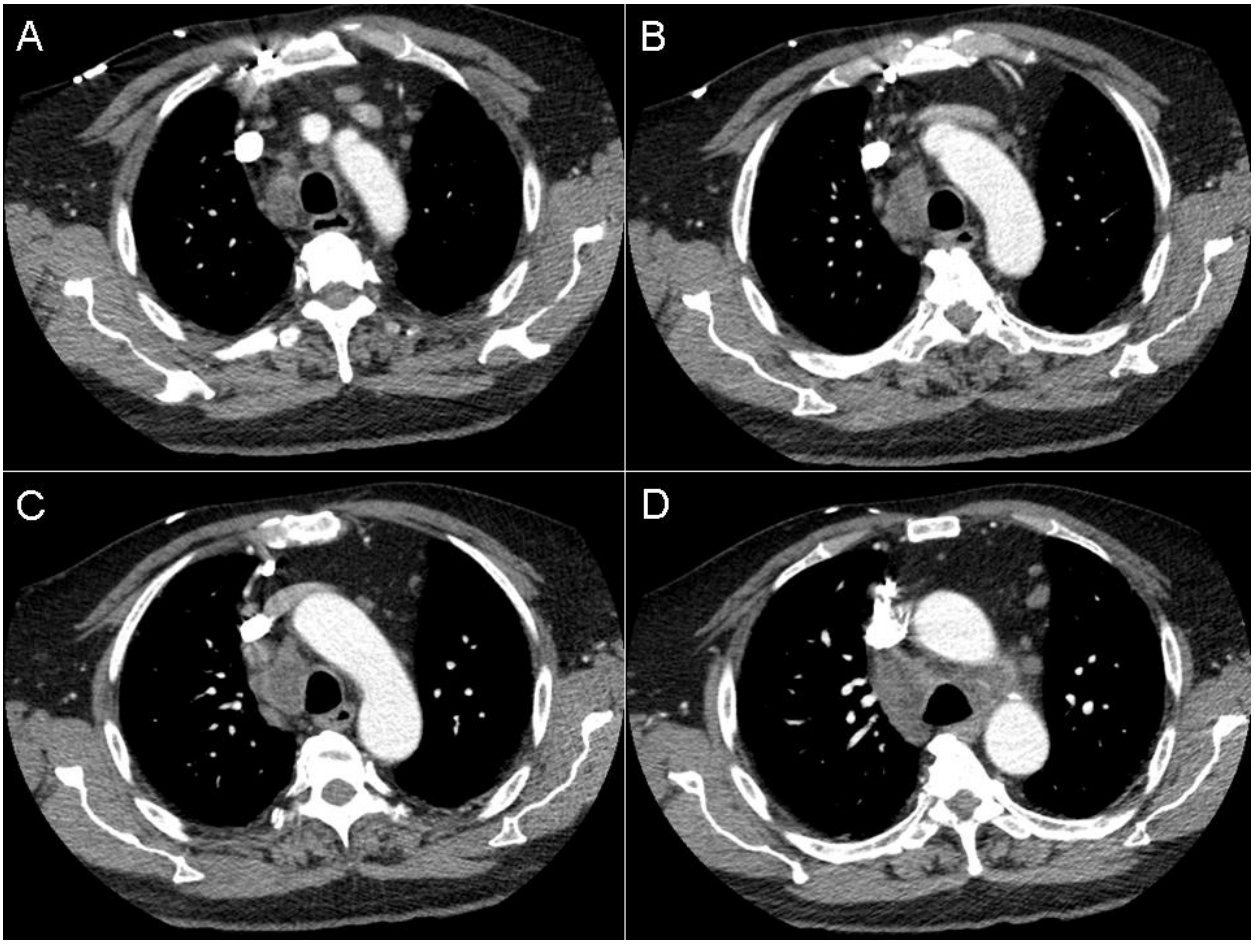

Figure 3. Representative images from the contrast-enhanced thoracic CT scan in soft tissue windows.

Which of the following should be ***done next***?

1. Begin tissue plasminogen activator
2. Bronchoscopy with endobronchial ultrasound biopsy (EBUS)
3. Mediastinoscopy
4. Thoracentesis
5. Video-assisted thorascopic biopsy

Correct!
2. Bronchoscopy with endobronchial ultrasound biopsy

The thoracic CT scan shows multiple masses within the mediastinum. These should be accessible to needle biopsy through the bronchus or trachea with a bronchoscope. Mediastinoscopy would also be acceptable in obtaining a diagnosis but bronchoscopy is simpler and does not require general anesthesia. There are no striking abnormalities in the lung, pleural effusion or pulmonary embolus identified so choices 1, 4, and 5 are not appropriate.

Bronchoscopy was performed and surprisingly two masses were seen in the trachea and the right mainstem bronchus which were biopsied (Figure 4).

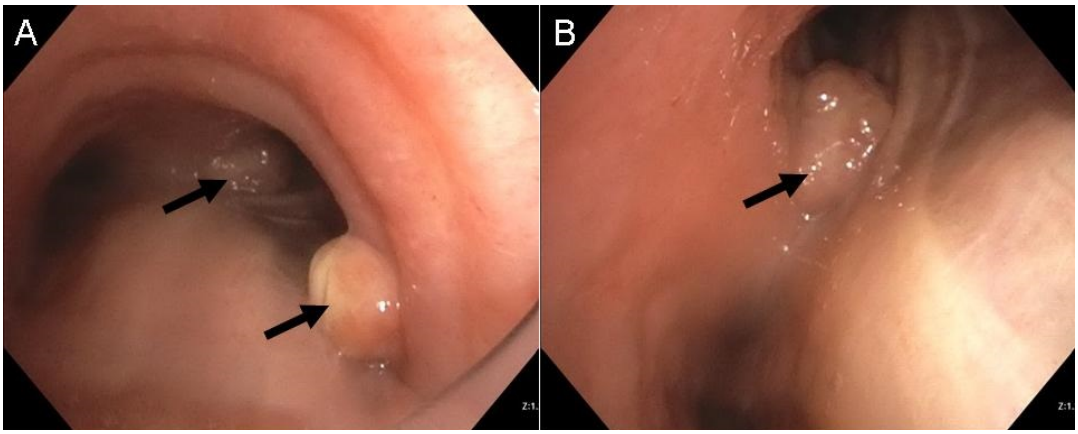

Figure 4. Panel A: view from the trachea showing tracheal lesion and right mainstem bronchus lesion (arrows). Panel B: view from just above the main carina showing right mainstem bronchus lesion.

An EBUS with biopsy was performed (Figure 5).

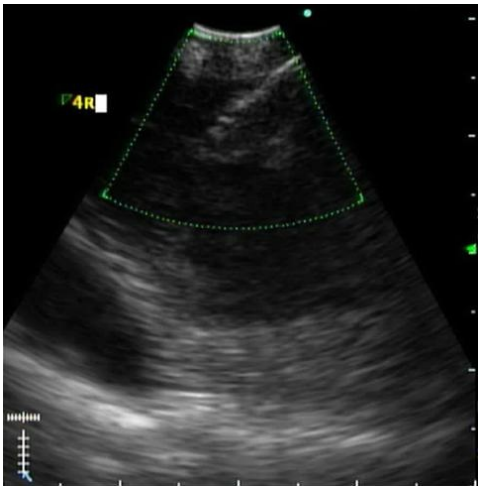

Figure 5. Endobronchial ultrasound showing needle biopsy of mediastinal mass.

What is the ***most likely diagnosis***?

1. Coccidioidomycosis (Valley Fever)
2. Histoplasmosis
3. Lung carcinoma with metastasis to the mediastinum and brain
4. Sarcoidosis
5. Tuberculosis

Correct!
3. Lung carcinoma with metastasis to the mediastinum and brain

All the diagnosis are possible. However, the most likely diagnosis with an endobronchial mass, mediastinal lymphadenopathy and an intracranial lesion would be lung cancer with metastases. Biopsy of the endobronchial masses was non-diagnostic. However, the needle biopsy of the mediastinal mass showed a single, classic coccidioidomycosis spherule (Figure 6).

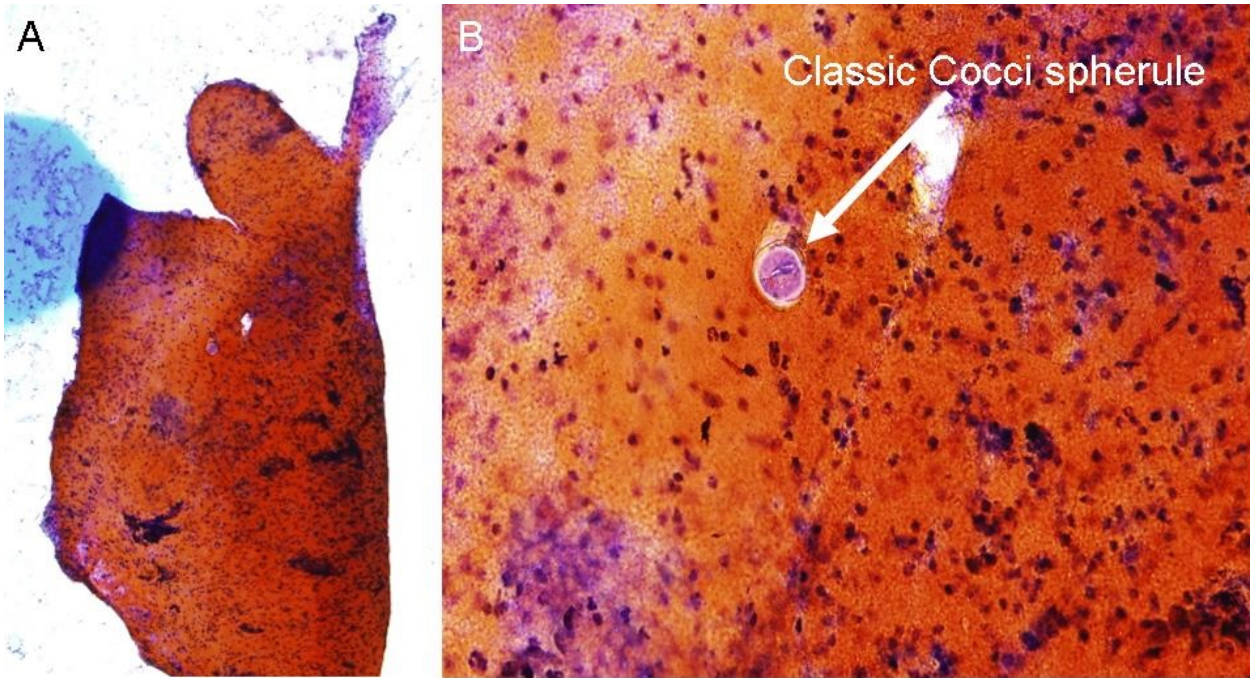

Figure 6. Histology from the needle biopsy of the mediastinum. Panel A: Low power view of the biopsy. Panel B: High power view showing the cocci spherule (arrow).

The patient was begun on fluconazole and was both clinically and radiographically improving at his last visit.

References

1. Jauch EC, Saver JL, Adams HP Jr, et al. Guidelines for the early management of patients with acute ischemic stroke: a guideline for healthcare professionals from the American Heart Association/American Stroke Association. Stroke. 2013;44(3):870-947. [CrossRef] [PubMed] Available at: http://stroke.ahajournals.org/content/44/3/870 (accessed 6/23/15).
2. de Groot PM, Carter BW, Betancourt Cuellar SL, Erasmus JJ. Staging of Lung Cancer. Clin Chest Med. 2015;36(2):179-96. [CrossRef] [PubMed]