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## **June 2021 Pulmonary Case of the Month: More Than a Frog in the Throat**

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A 66-year-old woman with a history of gastroesophageal reflux disease (GERD) and previous renal transplant due to lithium toxicity was seen in the clinic complaining of shortness of breath and nonproductive cough. She was on immunosuppression due to her renal transplant done about 5 months ago. These include daily trimethoprim (TMP) - sulfamethoxazole (SMX). She also had asthma and was on a long-acting bronchodilator with an inhaled corticosteroid. Because of a previous history of oropharyngeal candidiasis (thrush), she was doing nystatin swish and swallow daily.

**Key Words:** Aspergillus fumigatus, CT scan, aspergillosis, bronchoscopy, immunocompromised host, tracheitis, differential diagnosis, renal transplant, treatment, voriconazole,

Which of the following should be included in your ***differential diagnosis*** in this clinical setting?

1. Candida esophagitis
2. COVID-19 Infection
3. Cytomegalovirus esophagitis
4. Group A Streptococcus infection
5. All of the above

Correct!  
5. All of the above

Immunocompromised hosts are subject to all the causes of upper respiratory tract infection plus many causes that are usually rare in fully immunocompetent patients. These rare causes are mostly infections and would include candidiasis, COVID-19, and cytomegalovirus (1).

The physical examination including a careful head and neck examination was normal.

What should be done at this time?

1. Chest X-ray
2. COVID-19 testing
3. Outpatient laryngoscopy
4. 1 and 3
5. All of the above

**Correct!**  
**5. All of the above.**

Chest x-ray is noninvasive and indicated. In this day and age just about every pulmonary complaint has been associated with COVID-19 infection so a PCR to determine and active infection is indicated. Outpatient laryngoscopy is also noninvasive (or minimally invasive) and a reasonable choice. Chest x-ray was considered within normal limits. COVID-19 testing was negative. There was evidence of moderate epiglottitis on laryngoscopy.

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

1. An upper GI endoscopy (EGD)
2. Bronchoscopy
3. Thoracic CT scan
4. 1 and 3
5. All of the above

Correct!  
3. Thoracic CT scan

The thoracic CT scan should be done before a bronchoscopy to detect pathology which could potentially be sampled during the procedure.

Selected images from the thoracic CT scan are shown in Figure 1.

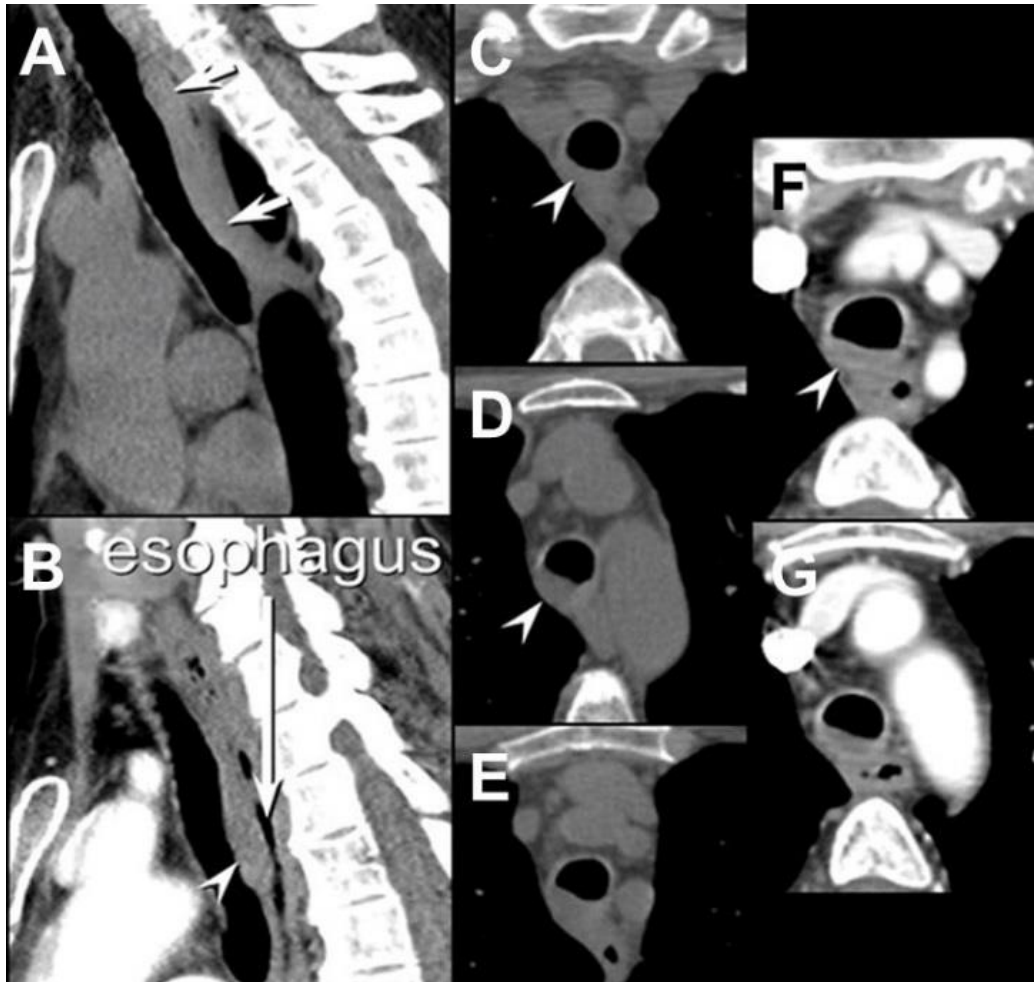


Figure 1. Selected views from the thoracic CT scan showing focal thickening of the posterior wall of the trachea (arrowheads). The thickening is best seen on the sagittal image (Panels A and B, arrows) posterior wall of the trachea (arrowheads). image (Panels A and B, arrows).

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

1. Bronchoscopy
2. Empiric ceftriaxone for epiglottitis
3. Percutaneous transthoracic needle biopsy of the trachea
4. Pulmonary CT angiography
5. Video-assisted thoracic surgery (VATS) biopsy

Correct!  
1. Bronchoscopy

The thoracic CT scan shows thickening of the posterior wall of the trachea. Empiric treatment with ceftriaxone for epiglottitis is not wrong but bronchoscopy is a better choice. Bronchoscopy is indicated because the disease process appears mostly confined to the posterior wall of the trachea. It is relatively easy to perform biopsy; inspect the trachea; and biopsy under direct vision if necessary, through the bronchoscope. It would be difficult and possibly dangerous to attempt to percutaneously needle biopsy the posterior trachea.

Bronchoscopy was performed and showed creamy white lesions on the posterior wall of the trachea (Figure 2).



Figure 2. View through the bronchoscope from the upper trachea showing creamy white lesions on the posterior trachea consistent with Aspergillosis.

Biopsies from the trachea and epiglottis showed a yeast typical of Aspergillosis. *Aspergillus fumigatus* was cultured from the biopsy specimens. First-line treatment for invasive aspergillosis is voriconazole (3). The patient was treated with voriconazole and clinically improved.

**Diagnosis:** Invasive *Aspergillus fumigatus* tracheitis.

*References*

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