

# Diagnosis of Sarcoidosis via EBUS-TBNA



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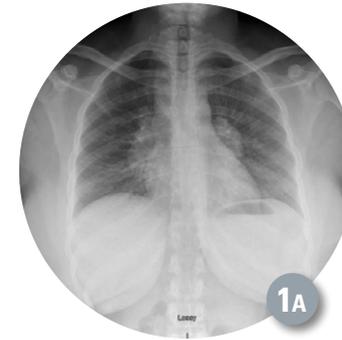
## technique spotlight

### Patient History

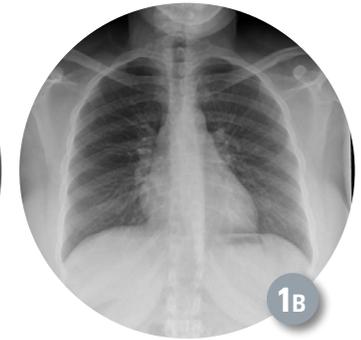
A 26-year-old African American female was referred for further evaluation of mediastinal and hilar lymphadenopathy. This abnormality was identified on imaging during an emergency department (ED) visit for atypical chest pain that was ultimately attributed to costochondritis and gastroesophageal reflux disease. The chest pain has since resolved. A chest x-ray during the ED visit demonstrated enlarged lymph nodes in the mediastinum and hilar areas bilaterally (Figure 1A). These imaging findings were not present on chest x-ray from approximately 6 months earlier (Figure 1B). Computed tomography of the chest confirmed these findings and also revealed mild diffuse bronchial wall thickening and scattered pulmonary nodules, the largest of which was 6 mm (Figures 2A/2B).

Physical examination was unremarkable except for obesity (BMI 36), and she otherwise felt well. Her past medical history was significant for asthma. She had no past surgical history. There was no family history of autoimmune or rheumatologic conditions. She used albuterol as needed and took a proton pump inhibitor (PPI). She smoked 1 pack of cigarettes daily.

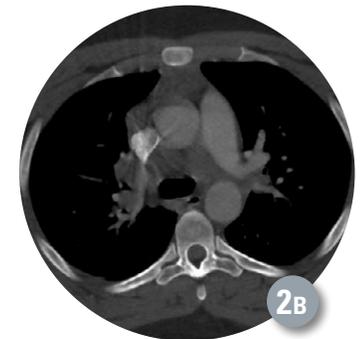
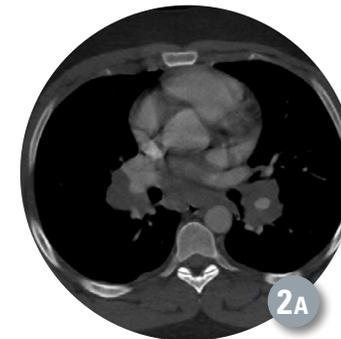
Sarcoidosis was suspected. She did not exhibit any signs or symptoms of infection. A lymphoproliferative disorder was less likely. Bronchoscopy was recommended for further evaluation. The risks, benefits, and alternative options were discussed with the patient who was eager to obtain more definitive answers.



Chest x-ray demonstrating enlarged lymph nodes in the mediastinum and hilar regions, along with interstitial thickening.



These findings were not present on a prior film from approximately 6 months ago.



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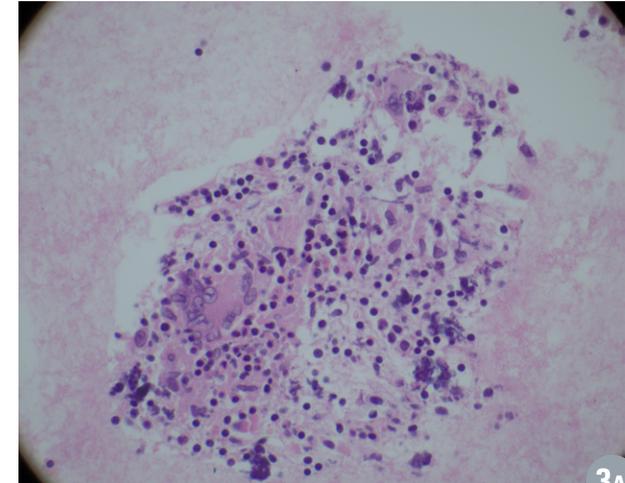
### Procedure

Endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) was performed under general anesthesia through an 8.0 mm endotracheal tube. The hilar lymph nodes (11L & 11R), subcarinal node (7), and lower paratracheal mediastinal nodes (4R & 4L) were biopsied using the Boston Scientific 25 gauge Expect™ Pulmonary EBUS-TBNA Needle. This needle was selected for its ease of use, reliability, and easy visualization under endobronchial ultrasound.

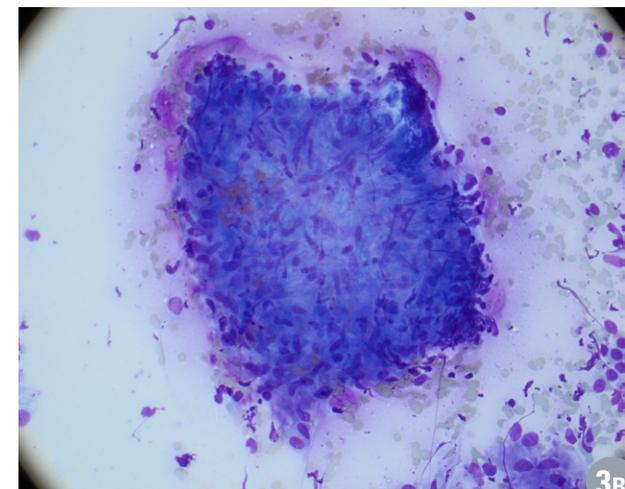
Four to six biopsies were performed at each lymph node station without suction. Granulomas were easily appreciated at all stations on rapid on-site evaluation (ROSE) (Figures 3A/3B). Specimen cellularity was excellent; only scattered red blood cells (RBCs) were present on the slide. The clearly visible granulomas on ROSE obviated the need for higher risk transbronchial and endobronchial biopsies. This also shortened the procedure duration, which was a mere 28 minutes.

The needle's sharpness aided in easily penetrating the endobronchial mucosa with minimal force. No assistant was required to stabilize or advance the bronchoscope during the biopsies.

In my experience, new users must adjust their technique when using this needle. The needle sharpness limits the "jabbing" or excessive force when penetrating the bronchial wall. The needle should be inserted slowly and under direct visualization as it enters the lymph node with little difficulty. With this needle, my experience has been much more about finesse and control than force.



Cell block demonstrating a granuloma with multinucleated giant cells at 60x magnification.



Granuloma with DiffQuik stain on ROSE at 40x magnification.



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### Outcome

The patient tolerated the procedure well and was discharged to home approximately 1 hour after the case ended. She had no cough or sore throat. Prior to discharge, she was informed that granulomas were visible on the preliminary intraoperative cytology evaluation and that these were suggestive of sarcoidosis.

She followed up with her regular pulmonologist approximately 2 weeks later and was diagnosed with stage I sarcoidosis. Systemic therapy was deferred, but the patient was counseled regarding signs and symptoms of possible progression. She was scheduled to follow-up in 6 months.

### Conclusion

A young, African American female was diagnosed with early stage sarcoidosis via a minimally invasive, outpatient biopsy using EBUS-TBNA. The Boston Scientific 25 gauge Expect™ Pulmonary EBUS-TBNA Needle was a component of an efficient, safe, and minimally invasive procedure. Specimen purity and lack of contamination with RBCs enabled a confident assessment on ROSE by the cytopathologist.

As the director of interventional pulmonology at an academic medical center, I am responsible for training new pulmonary and critical care fellows. When working with first year fellows, I intentionally expose them to a variety of EBUS needles from various manufacturers. New fellows, who have never done EBUS before, typically become proficient with the Boston Scientific Expect Pulmonary needle with minimal training.

Images provided courtesy of Dr. Kurman.

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