CHEST

A 49-Year-Old Woman With Right Apical Thoracic Mass

Yevgeniy A. Linnik, MD; Dagmar Hoegemann Savellano, MD; Joseph D. Phillips, MD; and Candice C. Black, DO

A 49-year-old woman with a medical history of essential hypertension presented to the ED with severe pain in the left superior chest and dull aching pain in the upper flank, lasting for the last 2 days.

CHEST 2017; 152(6):e133-e138

The patient's pain was position dependent, moderate in intensity, exaggerated by deep inspiration, and not aggravated by exertion. It was worse with twisting movement. She did not have dyspnea, back pain, leg swelling, or pain in the lower extremities. She denied fever, chills, night sweats, decreased appetite, weight loss, any numbness, paresthesia, or right arm or neck pain. She had neither peripheral neuropathy nor numbness over her upper or lower extremities, and she had normal muscle strength bilaterally. The patient reportedly never smoked, never used illicit substances, and did not have any environmental exposure. Physical examination revealed a woman not in acute distress, with equal breath sounds bilaterally, regular cardiac rate and rhythm, equal ankle size, and negative Homans sign. Palpation over the left superior chest and upper flank did not elicit increased pain. ECG showed normal sinus rhythm without S-T elevation. The hemogram and basic metabolic panel produced normal results. Cardiac biomarkers were not elevated. The symptoms were believed to be musculoskeletal in nature.

Radiology Findings

To further evaluate the chest and flank pain, a posteroanterior chest radiograph was obtained in the ED at an outside facility (Fig 1). The single-view chest radiograph showed a large convex density at the medial right apex. There was no volume loss that would have indicated atelectasis, but rather a mass effect with mild inferior displacement of the right hilum. The initially suggested differential diagnosis of

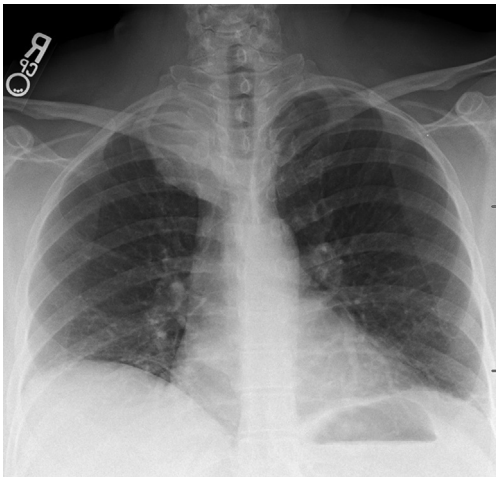

Figure 1 – *Chest posteroanterior radiograph shows a large convex density at the medial right apex.*

AFFILIATIONS: From the Department of Pathology and Laboratory Medicine (Drs Linnik and Black), the Department of Radiology (Dr Hoegemann Savellano), and the Department of Surgery (Dr Phillips), Dartmouth-Hitchcock Medical Center, Lebanon, NH; and the Geisel School of Medicine at Dartmouth College (Drs Hoegemann Savellano, Phillips, and Black), Hanover, NH.

CORRESPONDENCE TO: Yevgeniy Linnik, MD, Dartmouth-Hitchcock Medical Center, Pathology and Laboratory Medicine, One Medical Center Dr, Lebanon, NH 03756; e-mail: yevgeniy.a.linnik@hitchcock.org

DOI: http://dx.doi.org/10.1016/j.chest.2017.08.012

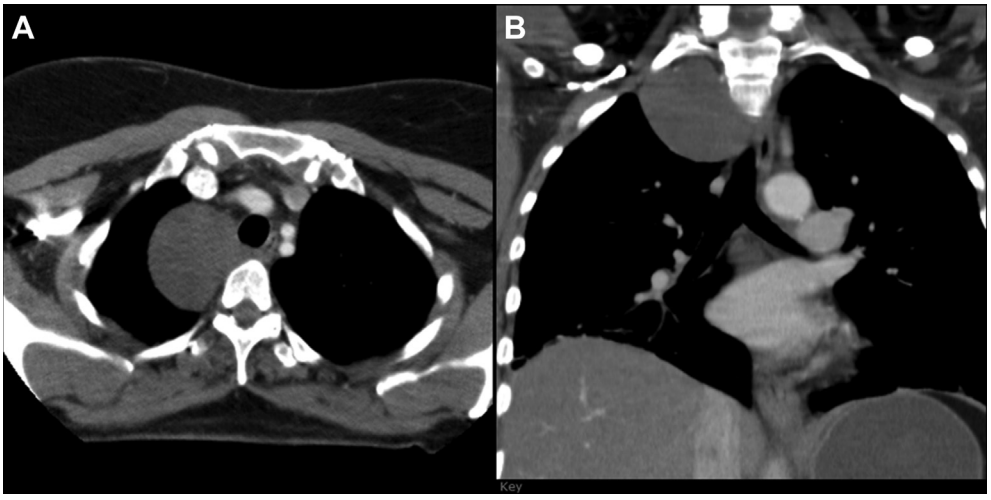

Figure 2 – *CT scanning showed a well-circumscribed, homogeneous 6-cm mass at the medial apex of the right hemithorax with extension into the upper mediastinum along the trachea, in between the trachea and esophagus, and along the right subclavian vessels.*

consolidation in an azygos lobe was not supported by the clinical presentation, raising concern for a mass.

A contrast-enhanced CT scan was obtained the same night, 2 h after the initial radiograph (Fig 2). The images showed a well-circumscribed, homogeneous 6-cm mass at the medial apex of the right hemithorax with extension into the upper mediastinum along the trachea, in between the trachea and esophagus and along the right subclavian vessels, with a density of 30 Hounsfield units. No definite evidence of invasion was seen. Otherwise the findings of the adjacent ribs, lungs, and mediastinum were normal. No noncontrast CT images were obtained, which limited the evaluation for enhancement. There was no fluid-fluid level or any evidence of macroscopic fat on the CT scan.

The initial radiologic findings showed no evidence of overt invasion into adjacent structures, and no lymphadenopathy, but were still mostly concerning that this could represent a malignant lung mass. This was probably because the mass was centered in the medial aspect of the apex of the right hemothorax, and the apical chest wall soft tissue could not be separated from the tumor margin because of similar density on CT scanning. The evaluation was suspicious for Pancoast tumor, and the patient was discharged from the ED with a plan for thoracic surgery evaluation.

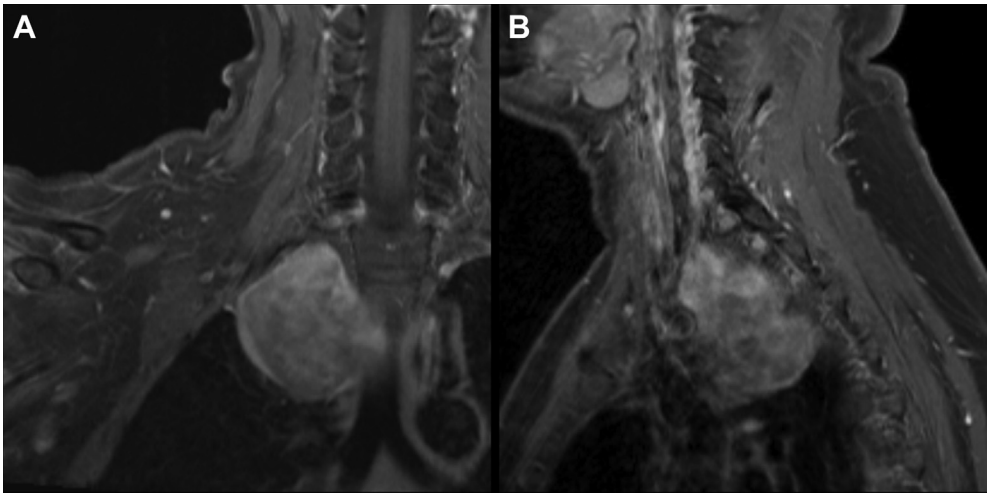

Figure 3 – *T1-weighted MRI scan with spectral fat saturation after intravenous contrast enhancement showed diffuse heterogeneous enhancement of the mass. It confirmed its well-circumscribed borders without any evidence of invasion into adjacent structures.*