

“Something Abnormal” on a Chest X-ray

You are doing preoperative orders on a patient scheduled for surgery tomorrow morning. The patient is a 75-year-old woman who was admitted with an acute left subdural hematoma after sustaining a ground-level fall.

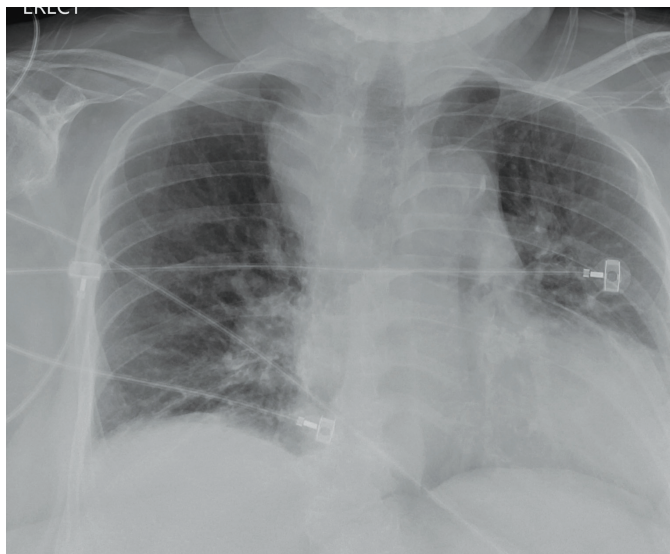
Her medical history is significant for hypertension and diabetes. Social history is unremarkable. She is neurologically intact except for occasional confusion and aphasia. She moves all her extremities well.

As you review her lab results, one of the nurses mentions that the radiology department called about “something abnormal” on the patient’s chest radiograph. You pull up the patient’s portable chest radiograph on the computer to review. What is your impression?

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ECGCHALLENGE

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Pertinent findings on physical exam include corrective lenses, pearly white skin with a blue hue on the nose and ears secondary to long-term amiodarone therapy, no evidence of thyromegaly or jugular distention, a regular rate and rhythm with a soft midsystolic murmur of mitral regurgitation, and no extra heart sounds. Her lungs are remarkable for consolidation in the right lower lobe, with crackles that change with coughing. Her abdomen is soft and nontender, and there is no peripheral edema. Her neurologic exam is intact. She is alert, attentive, and very witty in her responses to questions.

Laboratory data include urinalysis findings suggestive of a UTI, a white blood cell count of $9.8 \times 10^3/\mu\text{L}$, and a hematocrit of

35%. A chest x-ray shows evidence of consolidation in the right lower lobe, which the radiologist says is strongly suggestive of pneumonia. An ECG shows a ventricular rate of 71 beats/min; PR interval, 152 ms; QRS duration, 142 ms; QT/QTc interval, 476/517 ms; P axis, 76°; R axis, -48°; and T axis, 161°. What is your interpretation of this ECG?

ANSWER

This ECG shows normal sinus rhythm, a right bundle branch block (RBBB), and a left anterior fascicular block (LAFB). RBBB and LAFB are consistent with bifascicular block.

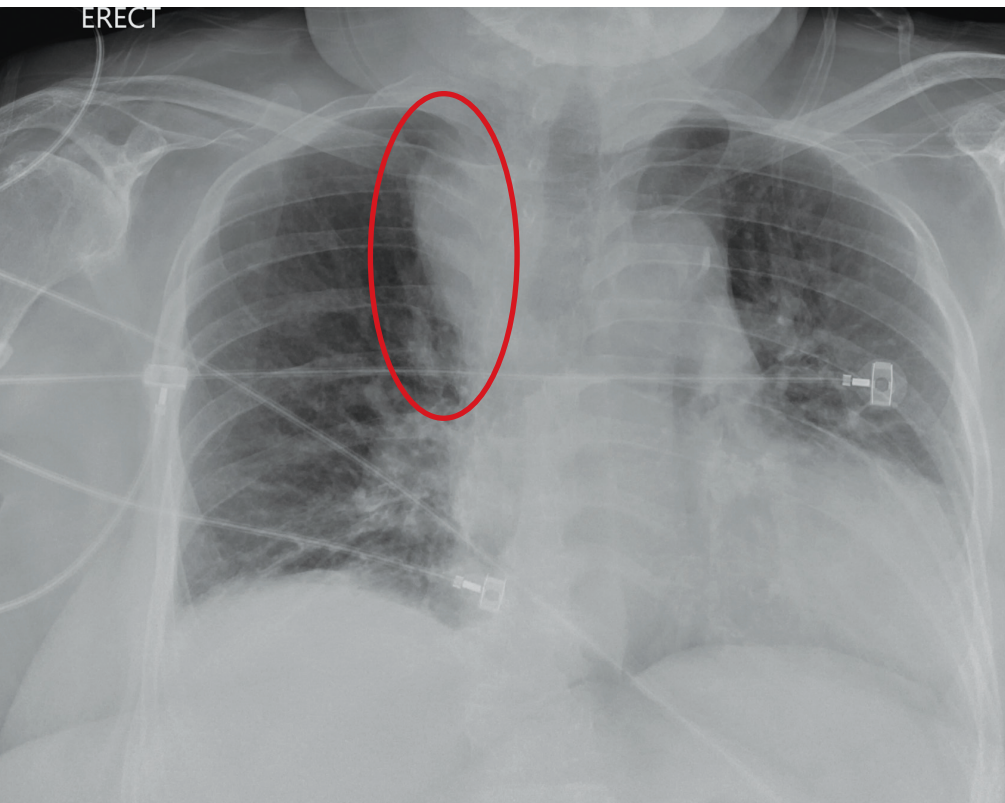
Criteria for an RBBB include a prolonged total QRS complex of 120 ms or longer and an RSR' complex (“rabbit ears”) in lead V_1 . LAFB criteria include a QRS of normal duration with an S wave

greater than an R wave in leads II, III, and aVF and left-axis deviation (-48° in this case).

The astute reader may question the disparity between RBBB and LAFB, since the criteria for the former include a prolonged QRS interval and the criteria for the latter include a normal QRS interval. It should be noted that the requirements for QRS duration for RBBB vary.

Bifascicular block (RBBB and either LAFB or left posterior fascicular block [LPFB]) is indicative of more advanced conduction system disease. However, it is not an indication for permanent pacemaker placement in an asymptomatic patient.

This patient was treated for a community-acquired right lower lobe pneumonia and a UTI. **CR**



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ANSWER

The radiograph demonstrates a fairly large (4 x 6 cm) right paratracheal mass of unclear etiology. This type of finding warrants further evaluation with contrasted CT.

Fortunately for this patient, a subsequent study demonstrated a slightly enlarged thyroid gland. This correlated with the radiographic finding. **CR**



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