Kaplan USMLE Step 2 prep: Dypsnea, wheezing, cough. What’s next?

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If you’re preparing for the United States Medical Licensing Examination® (USMLE®) Step 2 exam, you might want to know which questions are most often missed by test-prep takers. Check out this example from Kaplan Medical, and read an expert explanation of the answer. Also check out all posts in this series.

This month’s stumper

A 40-year-old woman with a nine-year history of scleroderma comes to the physician because of shortness of breath and a dry cough for four months. She has had weakness, dyspnea with minimal exertion, arthralgias, and difficulty with swallowing. Her temperature is 36.8 °C (98.2 °F), blood pressure is 135/75 mm Hg, pulse is 112 beats per minute, and respirations are 26 per minute.

Bilateral basilar crackles are heard on auscultation. Cardiac examination shows a normal S1 and S2; no murmurs are heard. A chest radiograph shows reticulonodular interstitial markings at the lung bases. Pulmonary function tests show a DLCO of 55%.

Which of the following is the most appropriate next step in diagnosis?

A. Arterial blood gases.

B. Echocardiogram.

C. Electrocardiogram.

D. High-resolution computed tomography.


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E. Pulmonary angiogram.
The correct answer is D.

Kaplan Medical explains why

Patients who have scleroderma may develop two pulmonary problems: interstitial lung disease and pulmonary hypertension. This patient who has scleroderma has a clinical presentation that is more consistent with interstitial lung disease.

Patients may present with fatigue, dyspnea on exertion, cough, hemoptysis, wheezing and chest pain. On physical examination, the most frequent finding is bilateral basal crepitations; individuals may also have clubbing. Several studies can be used in the diagnosis of interstitial lung disease, including chest radiograph, pulmonary function tests, high-resolution computed tomography, bronchoalveolar lavage, radionuclide scanning, and lung biopsy.

Chest radiograph usually shows symmetric, basal, reticulonodular shadowing. Chest radiograph is not very sensitive for the diagnosis of fibrosing alveolitis, however, and should be used for initial screening only. Diagnosis can be established based on pulmonary function tests and high-resolution computed tomography. Pulmonary function testing shows reduction in the diffusion capacity for carbon monoxide (DLCO) and a restrictive pattern of ventilatory dysfunction.

High-resolution computed tomography can show the character and distribution of fine structural abnormalities that may not be visible on chest radiographs. Common findings of high-resolution computed tomography of the lungs are ground-glass opacification and fibrotic disease.

Why the other answers are wrong

Choice A: Arterial blood gases may show the presence of hypoxia but do not confirm the diagnosis of interstitial lung disease.

Choices B and C: Echocardiogram and electrocardiogram may reveal nonspecific findings if interstitial lung disease causes secondary heart problems. These studies, however, are not used in the diagnosis of interstitial lung disease.
Choice E: Pulmonary angiogram also is not used in the diagnosis of interstitial lung disease. Pulmonary angiogram is the gold standard diagnostic study for pulmonary embolism.

Tips to remember

- Interstitial lung disease: shortness of breath, wheezing and cough.
- PFTs show decreased diffusion capacity and a restrictive pattern.
- HRCT shows reticular opacities, ground-glass opacification and fibrosis.

For more prep questions on USMLE Steps 1, 2 and 3, view other posts in this series.