Kaplan USMLE Step 3 prep: Is an echocardiogram needed in this case?

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If you’re preparing for the United States Medical Licensing Examination® (USMLE®) Step 3 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.

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This month’s stumper

A 36-year-old man goes to his physician for preoperative evaluation prior to an elective rotator cuff repair. Arthroscopic repair has been recommended by his orthopedic surgeon and as per the anesthesiologist, he is at minimal risk for any major complication. Because of the patient’s past medical history of mitral valve prolapsed, the anesthesiologist had asked if the patient ever had an echocardiogram.

The patient is requesting this test today. He is otherwise healthy, with a negative review of systems and no regular medications. No heart murmur is present on physical examination. The procedure is scheduled for tomorrow.

Which of the following is the most appropriate management?

A. Advise the patient that antibiotic prophylaxis is necessary.

B. Obtain a transthoracic echocardiogram and delay the surgery until results are available.
C. Order blood cultures preoperatively.

D. Proceed with surgery.

E. Obtain a transesophageal echocardiogram.

The correct answer is D.

Kaplan Medical explains why

The concern for this patient is his risk of infective endocarditis (IE). Current indications for IE prophylaxis do not include this patient. Patients who do need IE prophylaxis are those with:

- Prosthetic heart valves, including bioprosthetic and homograft valves.
- Prior history of IE.
- Unrepaired cyanotic congenital heart disease, including palliative shunts and conduits.
- Repaired congenital heart disease with residual defects at or adjacent to site of prosthetic...
device.
Cardiac valvulopathy in a transplanted heart.

**Why the other answers are wrong**

**Choice A:** Antibiotic prophylaxis is not appropriate since this patient has no indication for IE prophylaxis.

**Choice B:** Echocardiogram to evaluate for regurgitation is not needed. The point of the question is that asymptomatic mitral valve prolapse is, essentially, clinically irrelevant. This is especially true here because the nature of this patient's procedure is very low risk.

**Choice C:** Since there is no indication that a diagnosis of IE is warranted, preoperative blood cultures are of no value here.

**Choice E:** A transesophageal echocardiogram would be of no benefit.

**Tips to remember**

Patients who need infective endocarditis prophylaxis are those with:

- Prosthetic heart valves, including bioprosthetic and homograft valves.
- Prior history of IE.
- Unrepaired cyanotic congenital heart disease, including palliative shunts and conduits.
- Repaired congenital heart disease with residual defects at or adjacent to site of prosthetic device.
- Cardiac valvulopathy in a transplanted heart.

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