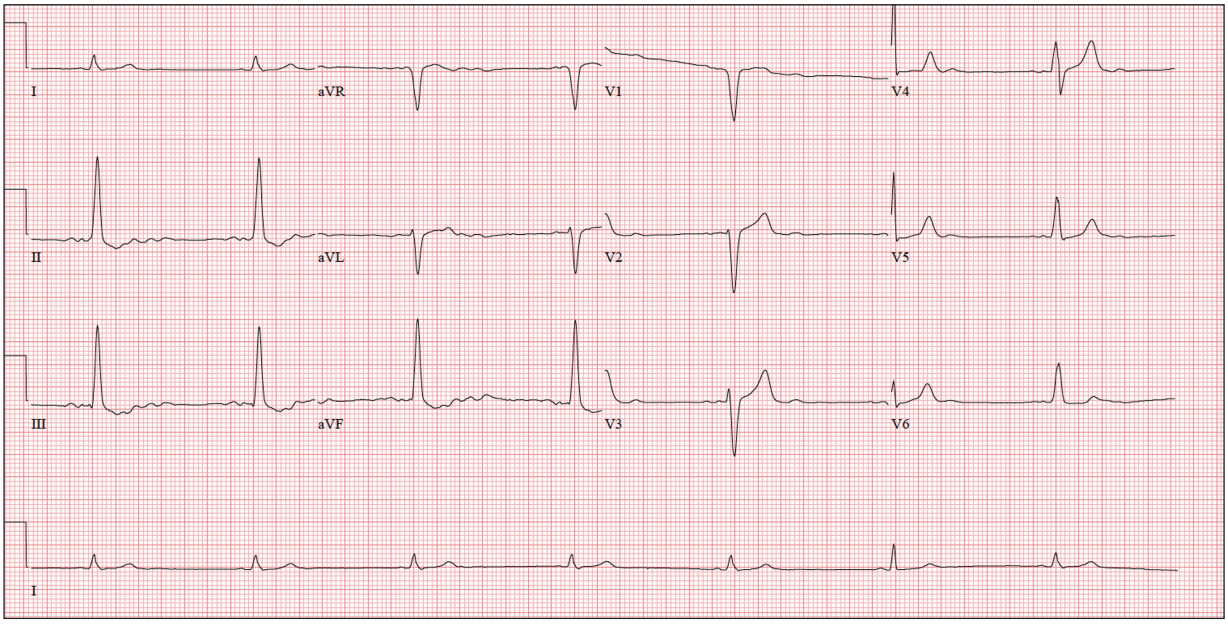
Man With Diverticulitis Undergoes Precolonoscopy Evaluation



A 74-year-old man with recurring episodes of melena presents for a preoperative evaluation prior to colonoscopy. He has had three such procedures in the past five years, all of which indicated diverticulitis. The current episode began about a month ago, but the patient delayed seeking care until last week due to work obligations.

The patient reports feeling more lethargic and becoming more easily tired than he has with previous episodes, which concerns him. He doesn't think he has lost more blood than before but admits he's been "too busy" to notice. He denies chest pain, shortness of breath, palpitations, peripheral extremity swelling, or recent weight change (gain or loss). He has not experienced loss of appetite or abdominal pain.

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Medical history is remarkable for hypertension, cholecystitis, and diverticulitis. There is no history of coronary artery disease, diabetes, or chronic obstructive pulmonary disease. Surgical history is remarkable for cholecystectomy and surgical repair of a high fracture of the left ankle.

The patient owns a 475-acre farm, where he has lived his entire life. He is a widower who relies on his four sons to help with chores, although he insists on driving the combine himself during harvest (which is why he delayed seeking care this time). He does not smoke or drink. His current medications include hydrochlorothiazide and naproxen as needed for musculoskeletal discomfort.

The review of systems is remarkable for fatigue and "the usual aches and pains of working on a farm." The remainder of the review is noncontributory.

The physical exam reveals a thin, weather-worn male in no distress. His height is 76 in and his weight, 172 lb. Both are unchanged from his previous clinic visit (six months ago). Vital signs include a blood pressure of 138/78 mm Hg; pulse, 46 beats/min; O_2 saturation, 96%; and temperature, 98.2°F.

Pertinent findings include normal breath sounds, a regular (albeit slow at 46 beats/min) rhythm, an early grade II/VI systolic murmur heard at the left

upper sternal border, and a soft, nontender abdomen. There is no peripheral edema and no femoral or carotid bruits. The neurologic exam is intact.

While the patient is undergoing preoperative laboratory tests and ECG, you review his medical record. Of note, the bradycardia found during today's physical was not present six months ago.

Laboratory data include a normal chemistry panel and a hematocrit of 38%. The ECG reveals a ventricular rate of 42 beats/min; PR interval, not reported; QRS duration, 130 ms; QT/QTc interval, 514/429 ms; P axis, 83°; R axis, 84°; and T axis, –43°. What is your interpretation of this ECG?

ANSWER

This ECG shows probable ectopic rhythm with second-degree atrioventricular (AV) block and a nonspecific intraventricular conduction block.

The P-wave morphology is unusual; rather than being upright and positive in leads II and aVF, the P waves are biphasic and prolonged, suggesting they originate from an atrial source other than the sinus node.

The rhythm strip of lead I in this ECG isn't of much help in determining the atrial rhythm, as the P waves are small. However, if you look at the strip beginning with either lead II or III and keep in mind that the strip is continuous even though the leads change (eg, lead III becomes lead aVF which becomes V_3, etc), you can see an atrial complex immediately following the T wave that is very similar to the P wave prior to the QRS complex. The rate of the P waves is 84 beats/min, which is twice that of the QRS complex (42 beats/min) and therefore consistent with a 2:1 heart block.

A nonspecific AV conduction block is evidenced by a QRS duration > 120 ms that does not have the appearance of a right or left bundle branch block.

Finally, while the QT interval of 514 ms is worrisome for long QT interval, it is normal when corrected for rate. **CR**