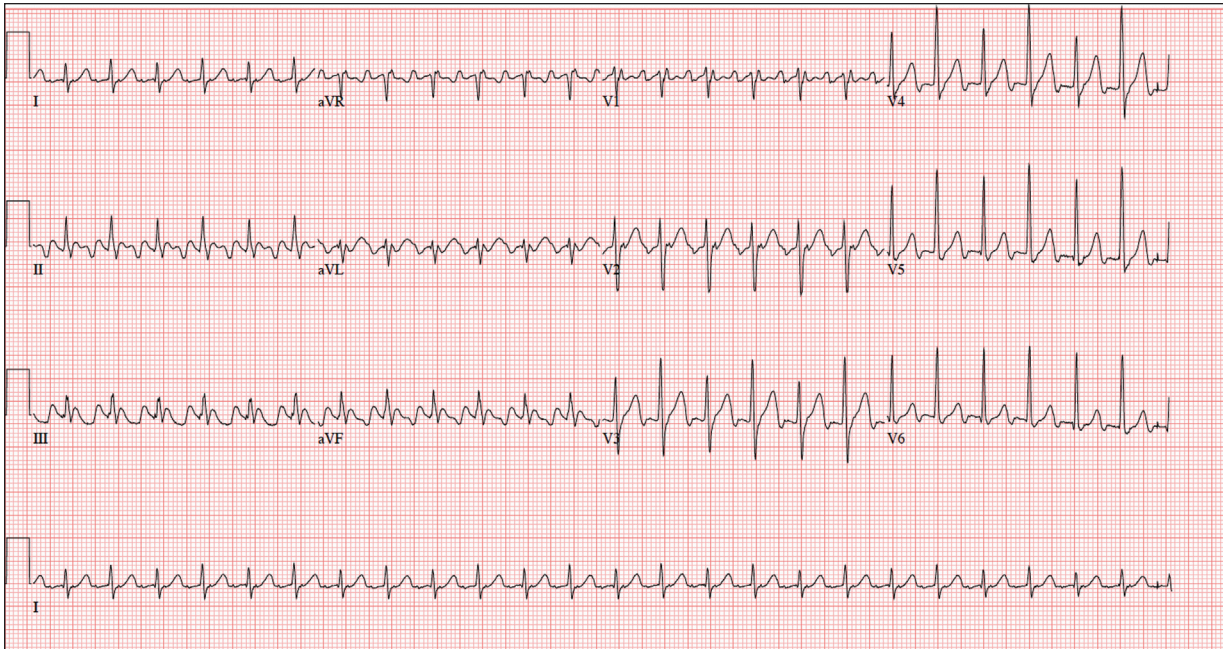


Woman Awakens With Rapid Heart Rate



Three nights ago, a 44-year-old woman awoke with a regular, rapid heart rate that lasted about 15 minutes before abruptly terminating. The next morning, at the hospital where she works as an emergency department (ED) nurse, she had a colleague perform an undocumented ECG that, by the patient's account, was normal.

Early this morning, she was again awakened by a similar regular but rapid heart rate. Not want-

ing anyone at her facility to know about the problem, she presents to your ED instead. She denies chest pain but admits that she is slightly short of breath, adding that her symptoms remind her of how she feels when finishing a 10K run.

The patient has been in excellent health with no underlying medical problems and no prior cardiac history. She is an avid runner, averaging three miles a day, and does not smoke. She does report drinking two or three glasses of wine in the evenings and admits she likes to party on the weekends, frequently consuming three or four margaritas with her coworkers on Saturday nights. She experimented with cannabis in college but hasn't used illicit or recreational drugs since graduating.

The patient is divorced, has a steady boyfriend, and has no children or siblings. Her parents are alive and well, with no history of arrhythmias, cardiovascular disease, or diabetes.

She has no known drug allergies. Her medications include an oral contraceptive and occasional ibuprofen for soreness following exercise.

The review of systems is remarkable for menses, which began yesterday. She denies that she is pregnant. Her vision is corrected with contact lenses.

Physical examination reveals a thin, athletic-appearing woman who seems anxious. Her height is 67 in and her weight, 132 lb. Vital signs include a blood pressure of 118/68 mm Hg; pulse, 150 beats/min; respiratory rate, 14 breaths/min⁻¹; and temperature, 37.8°C.



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Left Arm Pain, Numbness, and Weakness

A 40-year-old woman presents to the urgent care clinic complaining of left arm pain with associated numbness and weakness. She denies any injury or trauma, adding that the pain manifested several months ago but has recently progressed. She has already undergone outpatient MRI of her neck; she was told she had some “herniated discs” and would need to see a specialist.

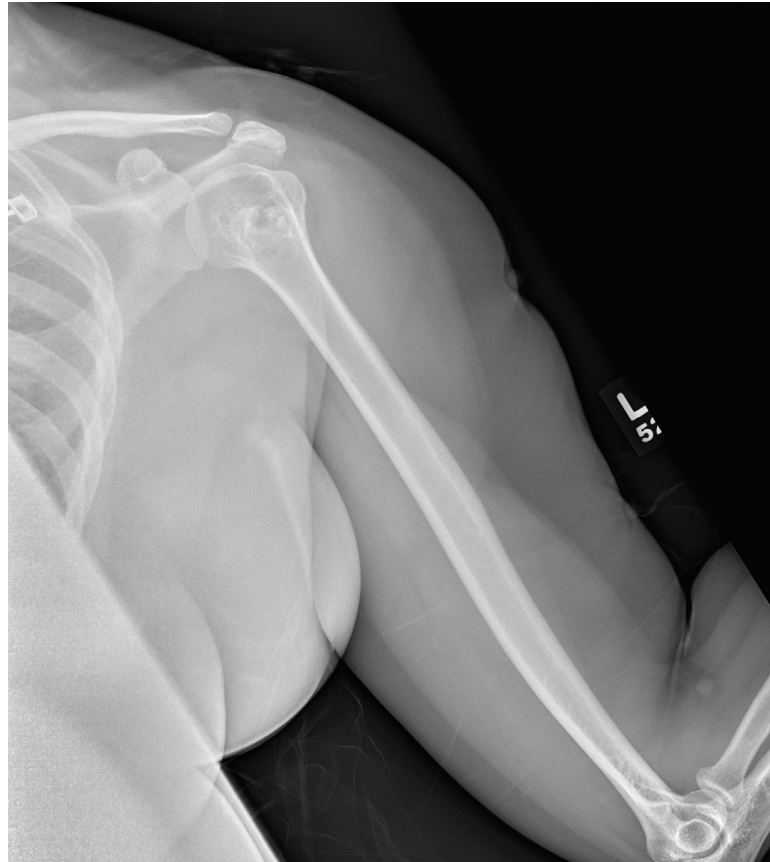
Her medical history is significant for hypertension. On physical examination, the patient appears uncomfortable but in no obvious distress. Vital signs are normal. Tenderness is present at the left trapezius and the left shoulder. Mild weakness is present in the left arm; strength is 4/5 and grip strength, 3/5. Pulses are normal, and sensation is intact.

Available medical records include a report from her recent MRI of the cervical spine. Findings include a moderate left-sided disc osteophyte at the C6-C7 level and resultant cervical stenosis.



A radiograph of the left shoulder is obtained. What is your impression?

see answer on page 37 >>



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ECGCHALLENGE

The HEENT exam is normal with the presence of contact lenses. There is no thyromegaly. The lungs are clear in all fields.

Her cardiac exam reveals a regular, rapid rate of 150 beats/min, without murmurs, rubs, or extra heart sounds. The abdomen is soft and nontender without palpable masses. The peripheral pulses are strong and equal bilaterally. There is no peripheral edema.

The neurologic exam is intact.

Laboratory tests, including a complete blood count, thyroid panel, and chemistry panel, are performed. All values are within normal limits.

An ECG reveals a ventricular rate of 149 beats/min; PR interval, 150 ms; QRS interval, 102 ms; QT/QTc interval, 270/425 ms; P axis, 103°; R axis, 78°; and T axis, -18°. What is your interpretation of this ECG?

ANSWER

The correct interpretation of this ECG is atrial flutter with a 2:1 block. Careful inspection of lead I reveals a P wave at the terminal portion of the QRS complex, in addition to the P wave seen with a consistent PR interval of 150 ms. This results in two P waves for each QRS complex. Given the presence of the flutter waves, an accurate assessment of the ST segment is not possible. **CR**