

A Prescription for Trouble



A 74-year-old man is admitted to your service with gastrointestinal bleeding. He has a history of diverticulitis and has had multiple episodes in which he passed bright red blood per rectum, sufficient to warrant blood transfusion. The last episode occurred about 14 months ago. The current one started 12 hours ago; he presents to the emergency department per your instructions.

Medical history is remarkable for hypertension, hypothyroidism, and prostatic hypertrophy.



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He has no prior cardiac history. Surgical history is remarkable for an appendectomy, cholecystectomy, and left rotator cuff repair. He has a positive psychiatric history of bipolar disorder that has been treated with lithium for more than 40 years.

The patient retired after working as a welder for 50 years. He is currently married to his second spouse. He has a 60-pack-year history of cigarette smoking and drinks one glass of bourbon per day. He denies using recreational drugs.

Family history reveals that his mother died of a stroke at age 97, and his father died of natural causes at 102. The patient has three brothers, all of whom are alive and well. One brother had an MI followed by coronary artery bypass grafting at age 71; the other two brothers' medical histories are unknown.

Current medications include furosemide, metoprolol, L-thyroxine, tamsulosin, and a daily baby aspirin. Three days ago, he started a prescription of azithromycin for an upper respiratory infection (URI) diagnosed at a local urgent care center.

Review of systems is positive for a URI manifest by fever, productive cough, and end-expiratory wheezing. The patient says this has improved considerably since initiation of antibiotic therapy. He also says that lithium has held his manic episodes in check for years, and he has refused several attempts to wean him from it. He still experiences urinary hesitancy and frequency despite starting tamsulosin; he has an appointment with a urologist in four weeks to discuss other options. The remainder of the review of systems is unremarkable.

Laboratory data upon admis-

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ANSWER

The radiograph shows a nondisplaced fracture of the proximal fibular head. No other fractures are evident. There is some evidence of soft-tissue injury and edema over the tibia.

An orthopedics consultation was obtained, with the presumption that the fracture would be nonsurgically managed. **CR**



ECG CHALLENGE

sion include a hematocrit of 38.2% and a white blood cell count of 11.0 cells/dL. All other lab values are within normal limits.

The admission ECG reveals a ventricular rate of 69 beats/min; PR interval, 188 ms; QRS duration, 100 ms; QT/QTc interval, 610/653 ms; P axis, 55°; R axis, 21°; and T axis, 103°. What is your interpretation of this ECG?

ANSWER

The correct interpretation includes normal sinus rhythm, right

atrial enlargement, left ventricular hypertrophy, and a prolonged QT interval. Normal sinus rhythm is indicated by a P for every QRS and a QRS for every P, with a constant PR interval (see rhythm strip of lead I).

Right atrial enlargement is evidenced by the tall P waves in leads II, III, aVF, and V₁. Note that there is no biphasic P wave in lead V₁, so there is no evidence of accompanying left atrial enlargement.

High-voltage limb leads (sum of R in lead I and S in lead III ≥ 25

mm) or precordial leads (sum of S in V₁ and R in V₅ or V₆ ≥ 35 mm) are indicative of left ventricular hypertrophy.

The QTc interval of 653 ms with a normal sinus rate is worrisome for prolonged QT syndrome. A review of the history shows the patient to be taking two drugs (lithium, azithromycin) known to prolong the QT interval. Although it is not known whether this patient has inherent QT prolongation, use of these types of agents should be avoided. **CR**