

# Friendly Advice Goes Awry



**Y**ou have been following a 57-year-old man for gastroesophageal reflux disease (GERD). He presents for routine follow-up stating that his reflux has subsided; you presume this is a result of the 14-day course of a proton pump inhibitor that you prescribed. However, the patient confesses that, for about three months, he's taken his omeprazole at twice the dose—because a friend told him that OTC medications are half the

dose of the prescription versions.

His primary concern today is that his heart has started flip-flopping in his chest for brief periods at bedtime. The symptoms typically last for 30 to 60 minutes and recur when he wakes in the morning—particularly if he is startled by his alarm clock. They began approximately a week ago, and he reports that they start and stop abruptly.

The patient denies chest pain, dyspnea, and syncope or near-syncope, but he does note that it feels like something is “sticking in his throat.” His active medical problems include GERD, hypertension, and obesity. Surgical history is remarkable for repair of bilateral ankle fractures and a left femur fracture sustained in a motorcycle accident six years ago.

Current medications include

omeprazole, metoprolol, furosemide, and potassium chloride. He says he ran out of his potassium about a month ago and hasn't refilled it yet. He also reports that he hasn't taken his metoprolol in more than six months, because it makes him lethargic. He has no known drug allergies.

The patient, who works as a welder, is married and has one son. He drinks approximately one six-pack of beer per week and smokes half a pack of cigarettes per day. He uses marijuana recreationally once or twice a month but denies use of any other illicit or naturopathic drugs.

Review of systems is remarkable for a smoker's cough, which clears with coughing. He also states his right eye twitches uncontrollably, and he feels weak and washed out. He denies nau-



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sea, vomiting, diarrhea, and constipation. While you are conducting the review, he states, "It just started again." You immediately check the patient's pulse; it is 110 beats/min and irregular.

Additional vital statistics include a blood pressure of 124/74 mm Hg; respiratory rate, 14 breaths/min; O<sub>2</sub> saturation, 96% on room air; and temperature, 98.4°F. His weight is 245 lb and his height, 72 in.

Pertinent physical findings include inspiratory and expiratory crackles that change with coughing, an irregularly irregular rhythm without evidence of a murmur or rub, a soft abdomen,

and no evidence of jugular venous distention or peripheral edema. Laboratory values are within normal limits, with the exception of the potassium (2.8 mmol/L; normal range, 3.6-5.2 mmol/L) and magnesium (0.9 mg/dL; normal range, 1.8-2.6 mg/dL).

An ECG reveals a ventricular rate of 108 beats/min; PR interval, not measured; QRS duration, 78 ms; QT/QTc interval, 352/471 ms; no P axis; R axis, -64°; and T axis, -58°. What is your interpretation of this ECG?

### ANSWER

The correct interpretation is coarse atrial fibrillation with a

rapid ventricular response and left-axis deviation.

Coarse atrial fibrillation is evidenced by the irregularly irregular rhythm with a normal QRS duration and flutter/fibrillation waves arising from the atria. Rapid ventricular response is defined as a ventricular response > 100 beats/min (seen in this case). Finally, an R-wave axis between -30° and -90° is indicative of left-axis deviation.

Correcting the patient's hypokalemia and hypomagnesemia resulted in a return to normal sinus rhythm. At one-year follow-up, he had had no further episodes of atrial fibrillation. **CR**

## DERMIDIAGNOSIS

>> continued from page 11

### ANSWER

The correct answer is all of the above (choice "e"). This particular form of tinea capitis is called *black dot tinea capitis* (BDTC), a somewhat unusual dermatophytosis (superficial fungal infection) that mostly affects children. The causative organisms are anthropophilic—that is, acquired from human sources, such as other children, during activities that involve skin-to-skin contact (eg, sports).

The vast majority of these organisms are from the *Trichophyton* family, such as *T tonsurans* or *T violaceum*. They invade the hair shaft itself, leaving the hard

covering (the cuticle) intact. The black dots represent the tips of broken-off hairs, themselves full of fungal elements, seen in the photomicrograph. The term *endothrix* is given to this kind of fungal infection, in which the organisms are contained within the hair shaft, which, as a result, becomes brittle and breaks off. This is a relatively common type of infection.

A more unusual form of tinea capitis is caused by zoophilic organisms, such as *Microsporum canis* (from dogs and cats), *Microsporum gypseum* (pigs or cows), or *T equinum* (horses). These infect the external surface

of the hair shaft, breaking down the cuticle. This allows for identification of the infection by Wood's lamp, which causes the affected area to turn a yellowish color. These infections also tend to provoke a more brisk inflammatory response in the victim and are more difficult to treat.

Diagnosis can be made from a combination of clinical findings, KOH prep (as in this patient), and/or fungal culture.

Treatment can entail griseofulvin or terbinafine; the case patient was treated with a two-month course of the latter (125 mg/d). Topical treatment is of limited usefulness. **CR**