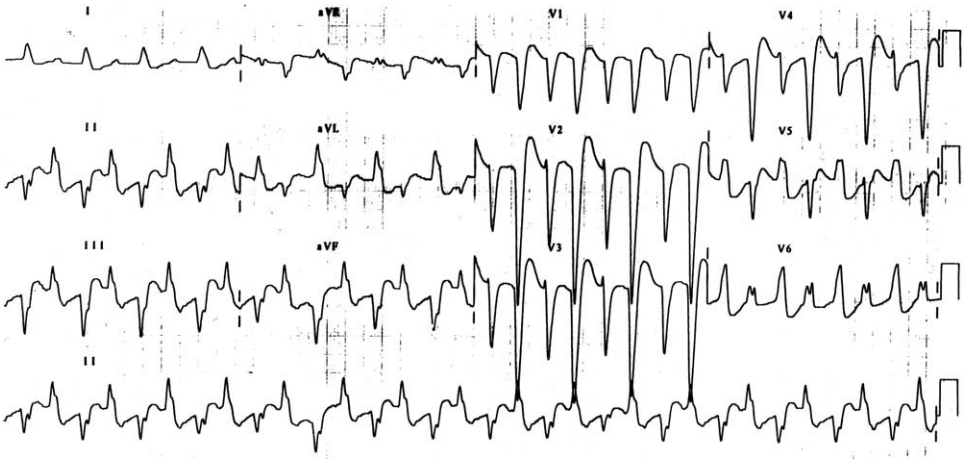

FIGURE 1. Bidirectional ventricular tachycardia after 1 mg digoxin and 690 mg amiodarone.

impression of digoxin intoxication and lidocaine was used. Besides, potassium was supplemented. Serum digoxin level was markedly elevated (4.33 ng/mL). After the treatments, normal sinus rhythm resumed 5 days later and the serum digoxin level was gradually down to 1.47 ng/mL. He was successfully weaned from the ventilator and transferred to the general ward.

Amiodarone is a complex drug with effects on sodium, potassium, and calcium channels as well as α- and β-adrenergic blocking properties. In the International Guidelines 2000 for CPR and ECC, amiodarone became the first choice for SVT and VT in patients with LV dysfunction and was addressed for AF unresponsive to digoxin.[1] In our patient with CHF, approximately 690 mg amiodarone was administered after 1 mg digoxin for treating new onset of AF. Sustained monomorphic VT occurred intermittently then and bidirectional VT associated with digoxin toxicity attacked 17 hours after addition of amiodarone. It returned to normal sinus rhythm after discontinuing digoxin and amiodarone and the addition of lidocaine.

Bidirectional VT is rare but classic arrhythmia of digitalis toxicity.[2] It was defined as VT with a regular rate and 2 QRS morphologies with opposite polarities.[3] The mechanism remains uncertain, and it could be infra-atrioventricular junctional in origin.[4] It is well known that amiodarone increases serum digoxin concentrations by inhibiting tubular secretion or displacing bound digoxin from tissue. The combination will increase the serum level of digoxin. As a result of increased cardiac automaticity, premature ventricular beats are often the earliest dysrhythmia,[5] and bidirectional VT are considered pathognomonic for digitalis toxicity.[6] In our patient, mild deterioration of renal function, relative hypokalemia and mainly, the addition of amiodarone, contributed to digoxin intoxication.

Amiodarone has been a star treatment for SVT and VT. However, it could lead to digitalis toxicity with previous or concomitant use of digoxin in patients with CHF. Amiodarone should be prescribed carefully in those patients.

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RETROPERITONEAL HEMATOMA AS A COMPLICATION OF CORONARY ANGIOGRAPHY AND STENTING

To the Editor:—Retroperitoneal hematomas (RPH) are usually the result of trauma of the retroperitoneal organs such as the pancreas, duodenum, and kidneys. In elderly people and those with long-standing hypertension and atherosclerotic disease, they could also be a sign of a leaking abdominal aortic aneurysm (AAA).[1] Although most cases are associated with trauma or leakage of an AAA, they could also be caused by vascular procedures such as percutaneous transluminal coronary angioplasty (PTCA), cardiac catheterization, peripheral angioplasty, valvuloplasty, and peripheral arterial access catheterization.[1]

These hematomas are often difficult to diagnose and could masquerade as other retroperitoneal and intestinal pathology. The diagnosis is thus a challenge. We report a case of RPH in a middle-aged man, suffered after cardiac catheterization, to discuss possible misdiagnoses and to review this uncommon entity.

A 43 year-old man presented to the ED with vomiting for 8 hours. He awoke 9 hours prior with sudden onset of left groin/testicular pain. He took a standard over-the-counter dose of ibuprofen, which brought about minor relief. One hour after, the patient had several episodes of vomiting and was unable to tolerate anything by mouth. He denied any chest pain or shortness of breath, hematemesis, diarrhea, melena, or bright red blood per rectum. All other review of systems was negative. His medical history was significant for coronary artery disease, stent placement 7 years previously, and two coronary angiograms with stent placement 1 week ago. His regular medications were metoprolol, clopidrogel, atorvastatin, lisinopril, and aspirin. He had no known drug allergies and denied alcohol, tobacco, or illicit drug use.

On physical examination, the patient was pale, diaphoretic, and writhing in pain. Vital signs were all normal. The physical examination was normal except for the abdominal examination. On

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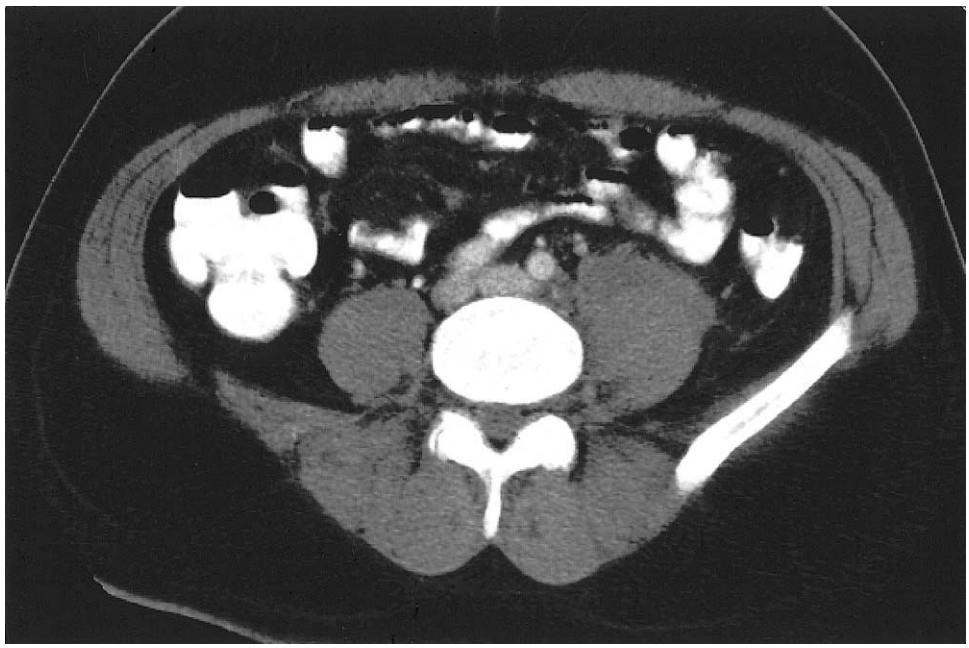

FIGURE 1. Computed tomography scan showing a fluid collection abutting the left psoas muscle.

abdominal examination, the patient was mildly tender to palpation, without rebound or guarding, in the hypogastric area. It was noted that the patient was also tender in the left inguinal canal but no hernias were appreciated and the genitourinary examination was normal. Rectal examination was positive for occult blood.

A complete blood count, chemistry panel, including liver enzymes, and urinalysis were performed. All results were normal. Electrocardiogram, chest x-ray, and abdominal series were all normal.

The patient was thought to have a hernia and a surgical consult was obtained. No hernia was present at the time, but the thinking was that the patient could have had a hernia on presentation, which led to the nausea and vomiting but had subsequently reduced by itself. A computed tomography (CT) abdomen/pelvis scan was obtained to evaluate for possible bowel obstruction, hernia (inguinal or obturator), abscess, or fluid collection.

The CT abdomen/pelvis scan demonstrated a RPH and the patient was admitted to the Medicine service (Figs 1 and 2). A unilateral lower extremity arterial duplex was performed to rule out pseudoaneurysm. No evidence of a pseudoaneurysm was found and the patient's hemoglobin/hematocrit remained stable. The patient was discharged home without complication on hospital day 3.

Cardiac catheterization has an incidence of major vascular complications between 0.3% and 6%.[2,3] Hematoma is the most frequent complication (0.9-1.27%), with the incidence of retroperitoneal hematoma resulting from cardiac catheterization reported to be approximately 0.12%.[2-4]

Four distinct types of postcatheterization hematomas are mentioned in the literature: retroperitoneal hematoma, intraperitoneal hematoma, groin and thigh hematoma, and abdominal wall hema-

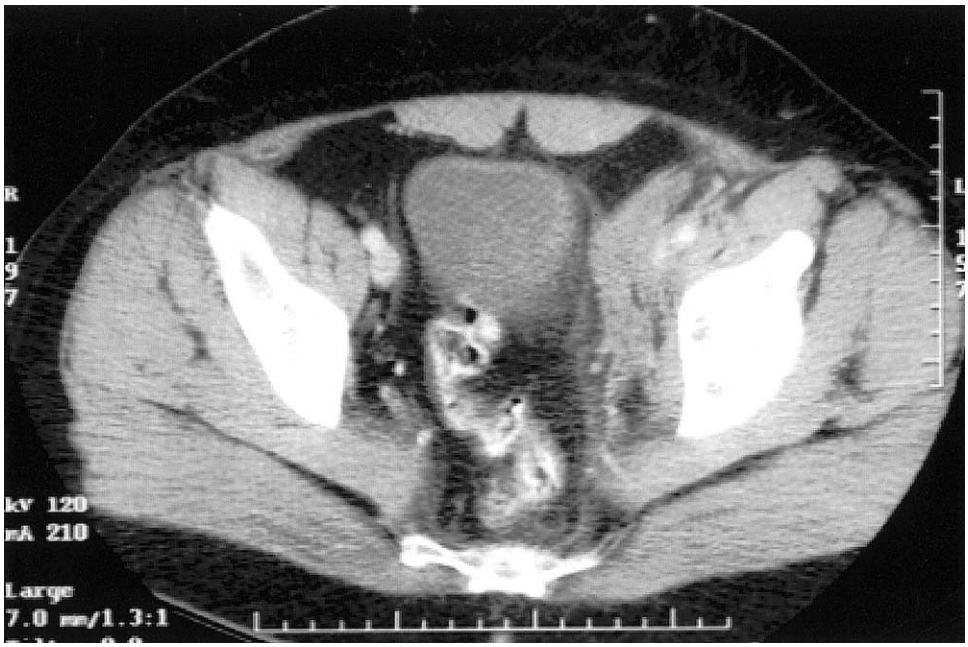

FIGURE 2. Computed tomography scan demonstrating the retroperitoneal hematoma tracking inferiorly into the pelvis.

toma. Other vascular complications include retroperitoneal bleeding, false aneurysms, arterial occlusion, arterial dissection, arterial laceration, arteriovenous fistula, infection, and cholesterol emboli.[4-6]

There are several risk factors for the development of a postcatheterization hematoma. These include advanced patient age (greater than 60), female sex, hypertension, low platelet count, large-bore catheters, operator inexperience, poor groin compression after catheter removal, high puncture site, abnormal vessel or graft, clinical evidence of peripheral vascular disease, and anticoagulant–thrombolytic therapy.[2,4,7] The likelihood of a vascular injury is higher after coronary angioplasty or stent placement than after angiography alone.[2,5]

The diagnosis is elusive and could mimic other diseases. Spontaneous RPHs usually do not present with a Cullen's sign or Grey-Turner's sign. Retroperitoneal blood could also dissect into the perineum or groin and cause scrotal hematomas, inguinal masses, or scrotal/inguinal pain, as observed in this case.[1] It has also been reported that retroperitoneal blood could irritate the psoas muscle and produce an iliopsoas sign such as is occasionally seen in appendicitis. Neurologic signs could be present as a result of compression of the femoral, obturator, and lateral femoral cutaneous nerves.[3] Nonspecific symptoms could be the only clue to intraabdominal pathology and recently performed procedures must be considered.

In cases in which the diagnosis of RPH is suspected, the definitive diagnosis can be made by CT scan. Ultrasound is a useful adjunct because it could demonstrate free fluid in the peritoneal cavity and provide a clue to the diagnosis.

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ZIPRASIDONE FOR SEDATION OF THE AGITATED ED PATIENT

To the Editor:—Recently, the Food and Drug Administration added a black box warning restricting the use of droperidol (Inapsine, Akorn Pharmaceuticals, Buffalo Grove, IL) citing "reports of deaths associated with QT prolongation and torsade de pointes in patients treated with doses of Inapsine above, within, and even below the approved range." This warning has resulted in significant changes for EPs in treating several common conditions encountered in ED practice. Of primary concern is the management of the acutely agitated patient.

Current recommendations from Akorn Pharmaceuticals reserve droperidol "for use in the treatment of patients who fail to show an acceptable response to other adequate treatments, . . .[and] all patients should undergo a 12-lead ECG prior to the administration of Inapsine to determine if a prolonged QT interval . . . is present." Further recommendations include "ECG monitoring should be performed prior to treatment and continued for 2-3 hours after completing treatment to monitor for arrhythmias."

Many EPs have had droperidol removed from their hospital's formulary; or, in cases in which agitation precludes the determination of the QT interval, EPs are forced to use alternative, less desirable treatments. These could include longer-acting antipsychotics, prolonging ED stays, or medications such as benzodiazepines, which carry a higher risk of respiratory depression.

A new class of antipsychotic has recently been approved for use in the acutely agitated, psychotic patient. Ziprasidone (Geodon; Pfizer Inc., New York, NY) has been shown effective in the management of acute psychotic agitation.[1-3] We have successfully used ziprasidone in the ED for the management of agitation in approximately 10 cases. Control of agitation is generally within 15 minutes of a single 20-mg intramuscular dose. This could be repeated for a total of 40 mg (total recommended daily dose) if indicated. Sedation is generally less prominent than with other antipsychotics, but treatment was effective in controlling agitation.

The primary limitation we have seen with the use of ziprasidone in the ED has been preparation for injection. Ziprasidone for injection is in the lyophilized form and must be reconstituted with sterile water. In practice, this takes approximately 3 minutes, and without preservative or bacteriostatic additives, must be prepared before each use or refrigerated for less than 1 week.

Our limited experience suggests that ziprasidone could be useful in the management of the acutely agitated ED patient. Future research could substantiate these findings and provide a new method for EPs to manage the acutely agitated ED patient.

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CAN SEVERE ACUTE PAIN ESCAPE VISUAL ANALOG SCALE SCREENING IN THE ED?

To the Editor:—Pain relief is certainly one of the most important components of medical care for all patients of all times

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