



A 57-Year-Old Woman with Acute Pain After a Fall

The patient is a 57-year-old woman who presented to urgent care complaining of severe pain in her right foot, leg, hip, and elbow. She reported that she fell three to four hours prior to presentation while outside walking her dog; she was “tripped up” in the pet’s leash.

She presented ambulatory, but was unable to bear any weight on her right leg.

Past medical history

Hyperlipidemia
Hypothyroidism
Diabetes type 1

Vital signs

Temp: 98.3°F
RR: 18
Sat: 100%
HR: 88
BP: 113/70

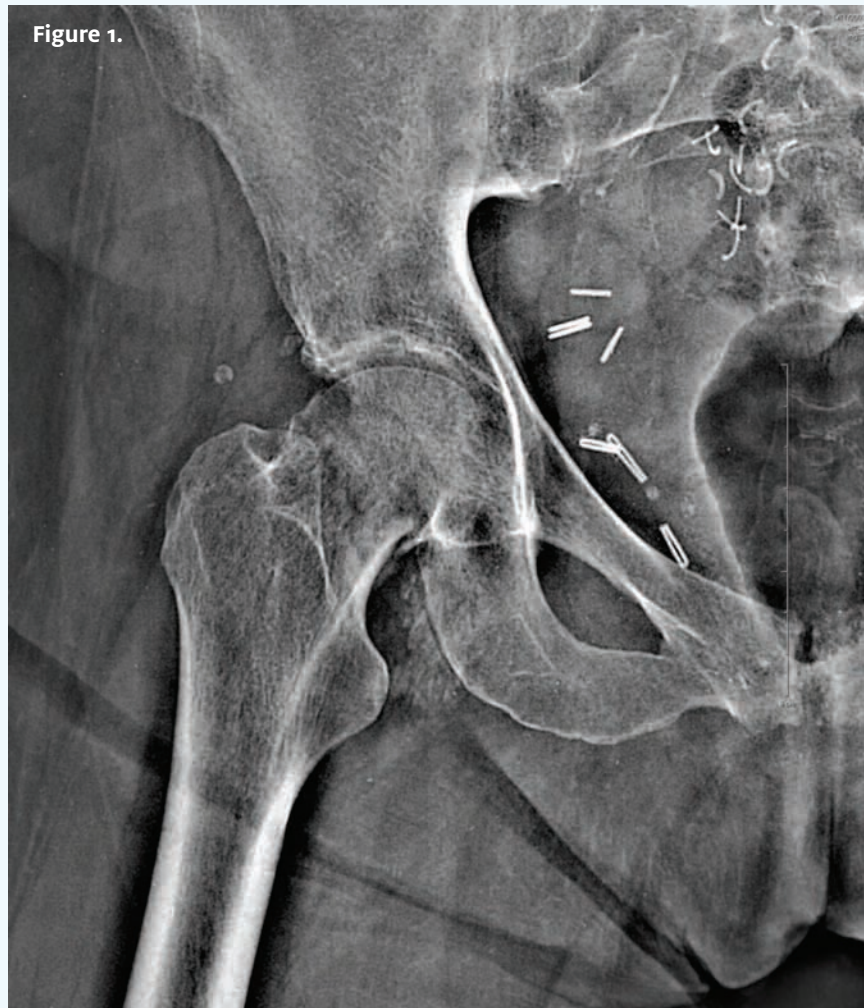
Per in-house triage system and protocols, the patient was triaged immediately due to her complaint of severe pain. She was brought in by wheelchair and placed on a gurney, where she requested to lay down.

The patient was noted to have lateral rotation of her right foot, along with an obvious (1½” to 2”) shortening of the right leg.

A stat hip x-ray (**Figure 1**) revealed an impacted right hip fracture.

The patient was immobilized on the x-ray table with a pillow providing support under her right knee. An IV was established with normal saline at a keep vein open rate; 5 mg of morphine was given a slow IV push.

After a call to 911, the patient was transported to a neigh-



boring hospital by ambulance. There, she was evaluated by orthopedics and taken directly to surgery.

Risk Factors for Osteoporosis

Several risk factors increase the likelihood of osteoporosis. Such factors include age, race, gender, body frame, dietary deficiencies, physical inactivity, and family history. Increasing age is the greatest risk factor in the development of

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osteoporosis, with the highest incidence in females over the age of 50.

In addition, women of Caucasian and Asian ethnicity tend to have higher rates of osteoporosis compared with women in other ethnic groups. Petite and thin women also possess an increased risk for osteoporosis, due to lower bone mineral density measurements.

Other factors include family history of osteoporosis, physical inactivity, calcium deficiencies, use of certain medications (such as glucocorticoids), postmenopausal status, history of tobacco use, excessive alcohol consumption, and chronic renal failure.

The diabetes connection

Type 1 diabetes—which was discovered in eliciting this patient's history—has long been associated with low bone density. The Nord-Trondelag Health Survey from Norway showed an increase in fracture rates among female type 1 patients compared to non-diabetic patients.

In the Iowa Women's Health Study, women with type 1 diabetes were 12 times more likely to report a fracture as compared with non-diabetic women. Due to the fact that type 1 diabetes has a young age of onset when bone mass is being accrued, low bone mass would seem to be a likely complication for type 1 diabetic patients.

Unlike patients with type 1 diabetics, type 2 patients often present overweight and sedentary. For these patients, coordination and balance factors that protect people from falls are impaired or not present. Hence, we might intuit that patients with a larger body size and relatively high bone mass may have a higher fracture rate.

Bone quality changes may also be affected by microvascular events common to diabetes. The Study of Osteoporotic Fractures confirmed that women with type 2 diabetes experience higher fracture rates in regions of the hip, humerus, and foot than do non-diabetic women.

Regardless of the type of diabetes, though, diabetic patients are at increased risk for diabetic retinopathy, advanced cortical cataracts, and diabetic peripheral neuropathy—all of which have been associated with increased fractures. Visual impairment and alterations in balance and gait may also be risk factors for increased falls.

Vigilance for Hip Fracture

Signs and symptoms of hip fracture may include:

- severe pain in the hip and/or groin
- inability to put weight on the leg on the side of the injured hip
- stiffness, bruising, and swelling in and around the hip area
- shorter leg on the side of the injured hip
- lateral rotation of the foot and/or leg on the side of the injured hip.

Pre-hospital care administered in the urgent care center should include:

- addressing the ABCs and immobilizing the cervical spine as appropriate
- immobilization of the hip while on a bed, stretcher, or backboard
- if fracture or deformity of the femur is obvious, applying a traction splint and placing an intravenous (IV) line for hydration.
- if the patient is hypotensive or tachycardic, initiating crystalloid fluid bolus and placing patient on supplemental oxygen
- assisting with pain control
- transport to the emergency department by ambulance.

If hip fracture is suspected and urgent care imaging is inconclusive, treatment regimens should remain the same as above.■

Acknowledgment: Case presented by Matthew McGauran, PA-C, and Bryan Holmes, NREMT, Advanced Urgent Care, Las Vegas, NV.