An Elderly Man with Hip Pain

Clinical History

A 75 year old male suffered a mechanical fall at home. He was initially pain free but developed progressive right hip pain over the following two days. Despite normal radiographs, he was unable to weight bear and had difficulty caring for himself at home. He was admitted to hospital for further management. On examination, there was no shortening or rotation of the right leg. He was unable to "straight leg raise" and had tenderness in the groin to deep palpation and limitation of rotation due to pain. The provisional diagnosis was occult hip fracture; bed rest was instituted; a bone scan performed.

Scan Findings

The bone scan demonstrates abnormal tracer uptake in the right intertrochanteric region typical for fracture *(Figure 1).* The corresponding pelvic radiograph showed no fracture *(Figure 2).* The patient proceeded to internal fixation of the right intertrochanteric fracture and rehabilitation.

Discussion

Hip fractures are common and occur predominantly in women over 65 years. One year mortality after this injury ranges from 15-20% and 50% of patients living independently before sustaining a hip fracture are unable to regain their independent lifestyle. Delayed recognition can result in increased mortality and morbidity. Symptoms are not always as typical as in this case and some patients may have normal ambulation and complain only of vague pain in their buttocks, knees, thighs, groin or back. If radiographs are negative and symptoms persist, or the clinical suspicion for fracture is high, a bone scan is an appropriate next step. At 72 hours post injury, the sensitivity of the bone scan for detecting fracture is greater than 95%. A negative bone scan virtually excludes fracture. Bone scans will detect a variety of other conditions which may explain the patients' symptoms. These include: fractures in other sites - proximal femoral shaft, neck of femur, pelvis, sacrum and lumbosacral spine; bursitis - ischial and trochanteric; enthesopathy; soft tissue inflammation; metastatic disease; and arthritis - hip, facet and sacro-iliac joints. Following falls, whole body images are often performed to exclude fractures at distant sites.

Conclusion

Bone scans are a highly sensitive appropriate investigation to confirm or exclude suspected fracture following trauma in patients with negative radiographs. In addition, alternate causes for the patients' symptoms can be detected and the whole body can be imaged. In suspected femoral fracture, the early diagnosis and management is important to decrease morbidity and mortality.

References:
Brunner LC et al. Hip Fractures in Adults. Am Fam Phys 2003: 67: 537-42

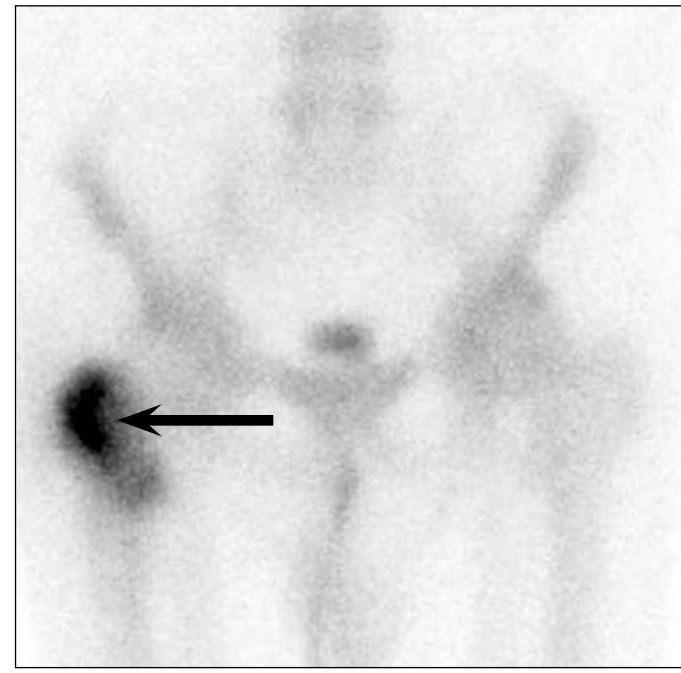

FIG. 1 *Delayed bone scan demonstrating a fracture in the right intertrochanteric region (arrowed).*

FIG. 2 *Pelvic radiograph showing degenerative arthritis of the hips without evidence for fracture.*

Case Study submitted by

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