

Acute non-traumatic knee pain in the elderly - osteoarthritis?

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We describe a patient with spontaneous osteonecrosis of the knee presenting with acute knee pain. This condition is less often thought of especially among elderly patients who present with knee pain and with no accompanying history of trauma. They are often assumed to be suffering from osteoarthritis. However, we believe that radionuclide bone scan is helpful especially when the plain radiographs are of little or no diagnostic value. (*Hong Kong j.emerg.med.* 2000;7:107-109)

Keywords: Spontaneous osteonecrosis, non-traumatic, plain radiographs, radionuclide bone scan

Introduction

Spontaneous osteonecrosis of the knee is commonly encountered especially in our aging population. Often clinicians attribute elderly patients' complaints of knee pain, to osteoarthritic degenerative changes. We present a case where radionuclide bone scan plays an important role in establishing the diagnosis, thus providing early identification and improvement in prognosis.

Case report

A 85 year old Chinese woman complaint of acute onset of left knee pain which was localised to the medial aspect for a few weeks. There was no preceding history of trauma. There was also no history of long term steroid ingestion. Physical examination revealed tenderness over the medial aspect of the left knee with preservation of full range of motion.

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Plain radiograph showed minimal osteoarthritic change. A subchondral lucency with surrounding sclerosis is seen in the outer aspect of the medial femoral condyle. (Figure 1) Bone scintigraphy (Tc-99 m MDP) of the right knee performed about a



Figure 1. Plain frontal radiograph. Medial femoral condyle subchondral lucency with a narrow zone of increased radiodensity.

month later showed intense uptake of in the medial condyle. (Figure 2)

The combination of clinical and imaging findings was diagnostic of spontaneous osteonecrosis of the knee.

Discussion

Spontaneous osteonecrosis of the knee, also known as Ahlback disease, occur commonly in the elderly around the 7th decade. Clinical symptoms and signs vary in severity. The patient characteristically presents with acute onset of pain and at the medial aspect of the knee, which is at the site similar to our patient. On occasion, this condition may mimic a meniscal tear or osteoarthritis.

The nature of the cause remains unknown. However, conditions such as meniscus tear, osteoarthritis, intra-articular steroid injection and trauma have been implicated.^{1,2}

Plain radiograph of the involved knee is usually normal within 2 to 3 weeks after the onset of symptoms while the bone scan study will reveal intense uptake.³ Later, a subchondral lucency in the medial femoral condyle can be seen. Although uncommon, the lateral condyle and tibia plateau

may also be involved. Subsequently, flattening of the area of subchondral lucency occurs with a narrow zone of increased radiodensity.

The bone scan when performed shows the characteristic focal increased uptake in the three phases (flow, pool and delayed). This helps to confirm the specific diagnosis of spontaneous osteonecrosis of the knee.⁴ It also plays an important role in patients with symptoms but has a 'normal' plain radiograph. In the case of a torn meniscus, there is no increased activity on the bone scan.^{5,6}

If the lesion is small, patient is usually managed conservatively with protected weight bearing. After a few months, patient usually becomes asymptomatic and the bone scan returns to normal.⁵ On the other hand, large lesions may have poorer prognosis and surgery may be required. Arthroscopy is usually performed to justify intra-articular procedures such as drilling and bone grafting.⁷ The long term complications include osteoarthritis and loose bodies.⁶⁻⁹

Spontaneous osteonecrosis of the knee should be included in one of the differential diagnosis in an elderly patient presenting with acute non-traumatic knee pain especially when the pain is localised to medial aspect of the knee.

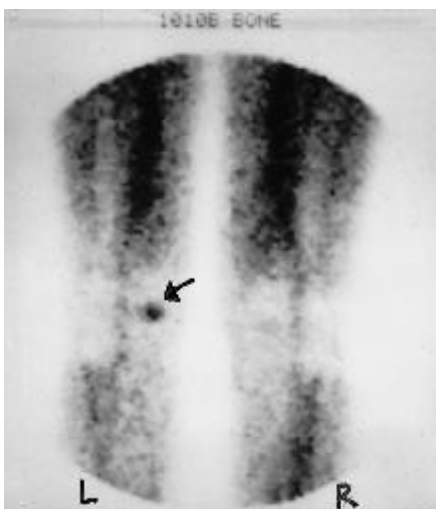


Figure 2a.

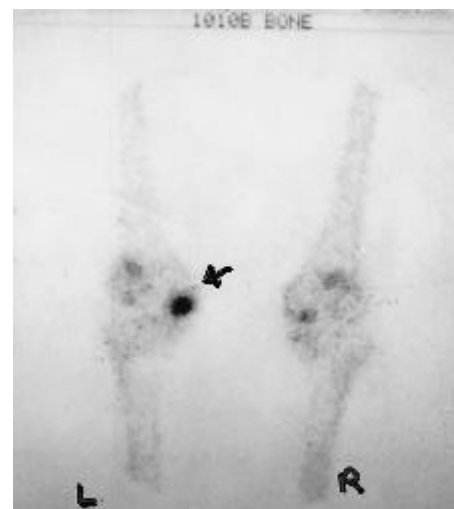


Figure 2b.

Figure 2. Radionuclide bone scan. (a) Blood flow phase. (b) Delayed phase. Both showed focal intense uptake in the subchondral region of the medial condyle.

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