CASE REPORT

Hip arthritis presenting as knee pain

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SUMMARY

A 68-year-old man with a history of left total knee replacement presented to his general practitioner with left knee pain. He reported pain onset after a fall in the garden. An X-ray of the knee was arranged but showed no abnormality to explain the pain. He was treated with simple analgesia. However, he reattended with the same knee pain. A further X-ray of the knee was requested, but again showed no abnormality. On his fourth presentation in 6 months, a further musculoskeletal examination was undertaken. This time the hip was also examined and showed that maximal pain was in fact on rotation of the hip joint. A subsequent X-ray of the hip showed severe osteoarthritis of the left hip with complete joint space loss and flattening of the femoral head. The patient was referred to an orthopaedic surgeon for a left hip replacement.

BACKGROUND

A patient with symptoms of hip osteoarthritis will usually initially present to their general practitioner (GP). A thorough history, clinical examination and an X-ray is usually all that is required to make a straightforward diagnosis. However, the pain of hip arthritis can also be confusing and misleading. This is due, in part, to the distribution of the pain. Pain from the hip is often felt in the groin area, lower back and over the front of the thigh. Ipsilateral knee pain, especially anterior knee pain, is also a generally accepted component of hip pain.¹ Owing to this wide distribution of pain, which could originate from other adjacent structures such as the lumbosacral spine or knee, a general musculoskeletal examination is essential to avoid unnecessary investigations and a delay in diagnosis.

Isolated knee pain as the only symptom of hip arthritis is conceptually difficult to appreciate and therefore, as in this case, can cause delay in diagnosis. This case serves as a reminder to the clinician of the pain distribution of hip arthritis and also of the importance of a thorough general musculoskeletal examination to avoid being misled.

CASE PRESENTATION

A 68-year-old man with a history of asthma, osteoarthritis, total left knee replacement (16 years ago) and deep vein thrombosis presented to his GP after a mechanical fall onto grass in his garden. Following the fall he presented with pain and stiffness in his left knee limiting his walking. The knee joint was examined, which revealed anterior knee swelling and tenderness. The concern was that the knee replacement had been compromised and an X-ray was requested. However, the X-ray showed the total knee replacement (TKR) in situ with

satisfactory appearance and no obvious adverse features to explain the pain (figure 1). He was treated with simple analgesia. Over the coming months, he repeatedly attended the GP practice with ongoing knee pain increasing in severity with significant impact on his daily life. A further isolated knee examination was undertaken and a further X-ray was requested to again check the appearance of the knee replacement, which again was reported as normal. On his fourth attendance in 6 months, a generalised musculoskeletal examination (inclusive of the hip) was undertaken, which revealed an antalgic gait with an unwillingness to weight bear on the left side. The examination was limited by pain but showed that maximal pain was in fact not in the knee joint itself but on internal and external rotation of the left hip joint.

INVESTIGATIONS

An X-ray of the pelvis was requested and reported as showing severe bilateral osteoarthritis worse on the left where there was complete obliteration of the joint space, subarticular sclerosis and flattening of the femoral head (figure 2).

DIFFERENTIAL DIAGNOSIS

Owing to the previous X-rays showing a satisfactory TKR with no radiological evidence to explain the pain and the significant features of the hip X-ray allied with the clinical examination, osteoarthritis of the hip was diagnosed as the source of the isolated knee pain.

TREATMENT

The patient was referred to an orthopaedic surgeon for a left hip replacement.

OUTCOME AND FOLLOW-UP

The author plans to follow-up this patient in 6 months and 1 years' time to assess knee pain postoperatively.

DISCUSSION

Referred pain is pain perception distant from the site of the stimulus, the mechanism of which is poorly understood. Referred pain is a well-recognised feature of osteoarthritic hip pain. This is likely to be due to the nerve anatomy of the pelvis and leg. The knee joint is innervated by branches of the femoral and sciatic nerves anteriorly and posteriorly by branches of the sciatic, obturator and saphenous nerves.²

Khan *et al* investigated the lower limb distribution of pain in 60 patients awaiting hip arthroplasty. They found that not only is anterior knee pain reported in 69% of patients, but pain below

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Figure 1 X-ray of the left knee showing total knee replacement in situ, with no adverse features.

the knee was also reported in 47% cases, highlighting that the distribution of hip pain can be unexpected.¹ Wang *et al*, in a diagnostic study, assessed 255 patients with hip disease and ipsilateral knee pain before and after hip arthroplasty. They observed that hip disease is commonly associated with ipsilateral knee pain which improved after hip arthroplasty.³

Although knee pain as a presentation of hip pain is recognised in the literature and understood, in part, by the anatomy, delay in diagnosis is still a problem due to failure to appreciate this known phenomenon. Yilmaz *et al* present a case of hip pain

Figure 2 X-ray of the pelvis showing severe bilateral osteoarthritis which is worse on the left where there is complete obliteration of the joint space, subarticular sclerosis and flattening of the femoral head.

presenting as isolated knee pain, with normal knee radiological investigations resulting in a 9-month delay in diagnosis of a cortical defect of the left femoral head.⁴ Emms *et al* present an extraordinary case of a 71-year-old patient seen by seven different specialists over a period of 4 years with knee pain. He was intensively investigated including with knee MRI and knee arthroscopy. The patient was requiring 160 mg MST daily for pain control. Correct diagnosis was finally made by returning to the beginning—by undertaking a thorough clinical examination and a plain pelvic film, which showed severe degenerative changes of his ipsilateral hip joint. The patient was pain free following hip arthroplasty.⁵

The presentation of this present case (a fall onto the knee and associated knee pain and swelling) explains why the focus was on the knee joint with a concern about the joint replacement. However, the basics of history coupled with a generalised clinical examination appears to have been forgotten. An X-ray showing a well-preserved knee joint should have prompted an earlier interrogation of the original diagnosis rather than subsequently repeating a normal test, with a fixation on the knee joint. A generalised musculoskeletal examination was not undertaken until the patient's fourth presentation, causing a 6-month delay in diagnosis. This is the diagnostic lesson. We should always return to the principal of good clinical examination and not be afraid to interrogate an original diagnosis, especially with a reattending patient with worsening pain.

Patient's perspective

"After my fall in the garden I suspected that I had damaged my left knee replacement so I went to see my GP. I was given an appointment for a knee X-ray and cream to rub in for the pain. Although the X-ray came back as normal I was in so much pain so, after many weeks, I returned again to see my GP. I was sent for another knee X-ray, but it still came back as normal. I carried on as best I could but could not put up with the pain any longer so I went back again. This time another doctor gave me a very thorough examination of my hip area as well as my knees and came to the conclusion that this pain was being caused by my hip, which a hospital X-ray proved right."

Learning points

- ▶ Knee pain can be the predominant pain symptom of hip arthritis.
- ▶ Examination of a patient presenting with knee pain is not complete without an examination of the hip joint.
- ▶ Always be prepared to reassess an original diagnosis.

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