CASE REPORT

Calcific tendinitis of biceps femoris: an unusual site and cause for lateral knee pain

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SUMMARY

A 37-year-old man presented to the acute knee and sports medicine clinic with atraumatic lateral knee pain. He had point tenderness over the lateral aspect of his knee which had not settled with anti-inflammatory medications. Imaging revealed a large opaque lesion lateral to the knee and although there was no clear mechanism, injury to the posterolateral corner was considered. An MRI subsequently revealed a rare case of calcific tendinitis to the biceps femoris tendon insertion. This condition was self-limiting and did not require interventions such as steroid injections. This is the first reported case of calcific tendinitis of biceps femoris as a cause of acute knee pain.

BACKGROUND

Pain originating from the lateral aspect of the knee can be very debilitating. Common causes include injury to the lateral collateral ligament or posterolateral corner of the knee, lateral meniscal tears or iliotibial band syndromes. Symptoms from lateral knee pain may include static or dynamic pain, instability or mechanical locking with stiffness. This patient had an unusual cause for lateral knee pain, and by writing this case report we demonstrate that this previously undescribed cause of knee pain can be managed expectantly with satisfactory resolution.

CASE PRESENTATION

We report a case of lateral knee pain in a 37-year-old male who was seen in an acute knee and sports medicine clinic. This patient reported of a 1 week history of lateral knee pain, gradually worsening with no traumatic history. He described the pain as sharp in nature. He felt that the pain started after home improvement activities and had progressed to include night pain. The pain was worse when performing an activity but also present at rest. He had no history of knee problems in the past and reported no instability or mechanical symptoms.

His medical history was unremarkable and he was not on any medications. He was fit and active and denied any history of systemic illnesses or joint problems and had no associated family history.

On examination, he had a normal body temperature and there were no signs or symptoms of systemic illness. He was able to fully bear weight but with point tenderness over the lateral aspect of the knee. The knee was not warm compared to the other side. There was tenderness on palpation of the lateral aspect of the knee, with point tenderness on the head of the fibula and biceps femoris

tendon. He had full extension and flexion of the knee up to 130° which was pain-free actively but flexion against resistance recreated the pain. Lateral-sided knee pain was reported on extension of the knee. The knee was stable to testing of the lateral collateral ligament and posterolateral corner and symmetrical compared to the other side.

Blood tests showed normal inflammatory markers and plain radiographs showed a dense opacity in the lateral margin of the knee joint (figure 1).

An MRI scan was arranged including T1-weighting, sagittal proton density and T2-weighting which showed calcification in the distal biceps femoris tendon (figures 2 and 3). No other intra-articular pathology was observed.

DIFFERENTIAL DIAGNOSIS

Causes of lateral knee pain include:

- ▶ Lateral osteoarthritis of the knee or osteochondral defects;
- ▶ Injury to the lateral collateral ligament or posterolateral corner of the knee;
- ▶ Lateral meniscal tears;
- ▶ Iliotibial band syndromes;
- ▶ Neoplasm.

TREATMENT

This patient was treated with physiotherapy and anti-inflammatories. The mainstay of physiotherapy was eccentric stretches of the hamstrings. He had an ultrasound-guided injection ordered but by the time he reported for this his symptoms had significantly improved.

OUTCOME AND FOLLOW-UP

The patient was scheduled for an ultrasound-guided aspiration and injection but on the day of the investigation, his symptoms had improved significantly and so therefore the procedure was not performed. The patient was seen again 6 weeks later and his symptoms remained quiescent. Repeat radiographs demonstrated partial resolution of the calcification at the lateral side of the knee.

At 4 months follow-up from initial presentation he was pain free and mobilising normally and repeat radiographs showed gradual resolution of the calcification.

DISCUSSION

Periarticular calcific tendinitis is an inflammatory condition associated with calcium hydroxyapatite crystal deposition disease processes. The aetiology of the disease is unknown but there have been

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Figure 1 Plain radiographs of the left knee demonstrating a dense opacity in the lateral margin of the knee joint.

associations with chronic renal insufficiency, diabetes and trauma.^{1 2} The condition is usually monoarticular and although the condition has been well described it can be mistaken as an avulsion fracture or accessory bone.³ The shoulder is most commonly involved, affecting 3% of adults⁴ but has also been seen in the hip, elbow and wrist joints. Hydroxyapatite crystals may deposit in the tendons, ligaments, joint capsule, soft tissues or bursae.

Calcific deposits around the knee have been described before involving the lateral collateral ligament,⁵ vastus lateralis⁶ and popliteus tendons.⁷⁻⁹ Anderson *et al*⁵ were the first to describe calcification on the lateral aspect of the joint and a series of four cases with MRI confirmed calcification in the lateral collateral ligament's proximal portion. They described the pain as

Figure 2 Coronal MRI, T1-weighted, at the posterior knee. The popliteal artery is midline. The insertion of biceps femoris on the fibula is visualised with evidence of calcification within the tendon.

Figure 3 Axial MRI scan, T2-weighted, demonstrating oedema and calcification in the distal biceps femoris tendon.

inflammatory in nature with worsening night pain, similar to this case report. All patients had resolution of symptoms with conservative management. Tibrewal⁹ reported a series of three cases of popliteal tendinitis treated with local injection and subsequently with anti-inflammatories, physiotherapy and knee splints. All patients had resolution of their symptoms by 6 weeks.

Extracorporeal shock wave therapy has been well documented in rotator cuff calcific tendonitis; however, there is limited evidence with regards to its use in the knee. A satisfactory result was found with this treatment in patellar tendinopathies in 73.5% of a case series of 83 knees.¹⁰

Biceps femoris, together with semitendinosus and semimembranosus, makes up the hamstrings. It arises from two heads, the long head from the ischial tuberosity and the short head from the lateral part of the linea aspera. The two heads join in the mid-thigh and insert into the head of the fibula, splitting around the lateral collateral ligament.

Calcific tendinitis at the biceps femoris insertion has not been described in the literature to the best of our knowledge. Dashevsky¹¹ in 1973 reported a case of calcific tendinitis which involved the long head of biceps femoris rather than its insertion. A 20-year-old man had a 7-month history of pain just proximal to the popliteal fossa with associated sciatic nerve symptoms with no history of trauma. Radiographs of the thigh revealed a calcific density at the level of the infraglenoid crease. This was surgically explored and removed with immediate resolution of his sciatic pain.

When calcification is involved around the knee symptoms include pain and tenderness at the site of attachment. Popliteal calcific tendinitis may present with acute pain and spasm of the popliteus and may mimic a 'locked knee'.⁹ Calcification in the lateral aspect of the knee appears to present in a similar way with localised pain, night discomfort and normal range of movement whether in the lateral collateral ligament⁵ or in the insertion of the biceps femoris tendon. Treatment of this rare condition is similar to other forms of calcific tendinitis and in

acute knee pain with lateral calcification these rare conditions should be considered. Lateral knee pain is a common condition seen in general practice and referral to a sports medicine clinic is recommended.

Learning points

- ▶ There are many causes of lateral knee pain which is a frequent presentation in the general practice setting.
- ▶ In the absence of trauma and tendinopathic pain, calcific tendinitis should be considered in the lateral structures of the knee especially in the setting of night pain.
- ▶ Although calcific tendinitis in the shoulder is much more common, the management for lateral knee calcific tendinitis can resolve with anti-inflammatories and physiotherapy but in the setting of no symptomatic improvement it can be managed with corticosteroid injections.

Competing interests None declared.

Patient consent Obtained.

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