Case report

CALCIFYING TENDONITIS OF THE GASTROCNEMIUS

A report of three cases

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We describe the clinical features of calcifying tendonitis in the medial head of gastrocnemius in three elderly female patients. The presenting symptom was chronic pain in the posteromedial area of the knee in two patients and acute pain in the back of the knee in one. All had limitation of movement of the knee and marked tenderness in the region of the tendinous origin of the medial head of gastrocnemius with posterior knee pain induced by stretching the tendon. An injection of 1% lidocaine and steroid into the tendon resulted in temporary relief from pain and improved movement.

J Bone Joint Surg [Br] 2002;84-B:431-2.

Received 8 December 2000; Accepted after revision 28 June 2001

In 1981, Martel et al¹ first reported the characteristic radiological appearance of calcification in the tendon of gastrocnemius associated with the deposition of crystals of calcium pyrophosphate dihydrate (CPPD). Although a high incidence of calcification within the tendinous origin of the medial head of gastrocnemius has been described,^{2,3} associated tendonitis has not been reported.

We present the clinical features of three patients with calcifying tendonitis of gastrocnemius.

Case reports

Case 1. A 67-year-old woman farmer presented in March 1998 with a one-year history of posteromedial pain in the left knee. There was a tender swelling measuring 2.5×1.5 cm in relation to

the origin of the tendon of the medial head of gastrocnemius. The range of flexion of the knee was from 25° to 90° and was limited by pain. Pain in the back of the knee was induced by stretching gastrocnemius.

Plain radiography showed degenerative changes affecting the medial compartment of the knee and calcification of the menisci (Fig. 1a). The lateral view showed calcification within the origin of the medial head of gastrocnemius (Fig. 1b). CT revealed inhomogeneous deposition of calcium in the tendon (Fig. 2) and MRI confirmed the presence of a low-intensity lesion (Fig. 3). The symptoms were not relieved by the injection of 1% lidocaine into the knee.

A diagnosis of calcifying tendonitis was made. The symptoms did not improve after conservative management and decompression was performed four weeks later. A considerable amount of calcium deposit was removed at operation. Histological examination confirmed the diagnosis. There was dramatic relief from pain and she returned to work two months later.

Case 2. A 74-year-old female housekeeper presented in July 1998 with a history of post-traumatic posterior pain in the right knee for one week. There was marked tenderness in the region of the medial head of gastrocnemius. The range of flexion of the knee was from 30° to 90° .

Plain radiography showed calcification and CT confirmed that this was in the origin of the tendon of the medial head of gastrocnemius. A diagnosis of acute calcifying tendonitis was made and she obtained dramatic symptomatic relief after a local injection of 1% lidocaine and steroid.

Case 3. A 67-year-old female expert in the tea ceremony presented in October 1997 with a history of pain in the right knee for six months. There was marked tenderness in the region of the medial head of gastrocnemius and the range of flexion of the knee was from 20° to 95° . Plain radiography showed soft-tissue calcification which CT indicated to be within the origin of the tendon of the medial gastrocnemius. Over a period of eight months she was treated with local injections of steroid. The pain improved gradually but some limitation of movement persisted.

Discussion

Calcification in tendons is relatively common in CPPD crystal deposition, especially in tendo Achillis and the tendons of gastrocnemius and quadriceps.² Yang et al³ reported an incidence of calcification in gastrocnemius of 31.9% (44/138) in patients with CPPD crystal deposition in the knee. The mean age of the patients was 72.6 years. These studies have dealt only with the radiological appearances of calcification with no reports of associated tendonitis.

Two of our patients had a probable diagnosis of CPPD crystal deposition according to the criteria of Ryan and McCarty.⁴

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0301-620X/02/311968 \$2.00

Fig. 1a

Fig. 1b

Case 1. Radiographs of the left knee of a 67-year-old woman showing a) an anteroposterior view with osteoarthritic changes and calcium deposition in the menisci (arrowheads) and b) a lateral view with deposition of calcium in the tendon of gastrocnemius (arrow).

Fig. 2

CT confirming inhomogeneous deposition of calcium (arrow) in the medial head of the tendon of gastrocnemius.

Fig. 3

Sagittal MRI showing a low-intensity lesion in the medial head of the tendon of gastrocnemius (arrow).

The cause of calcification within tendons is unknown. Suggested causes include hereditary, metabolic, post-traumatic and post-surgical conditions.⁴ Tendonitis induced by calcium deposition is well known in the rotator cuff⁵ and tendo Achillis.⁶

An inflammatory reaction within the tendon may be induced by the shedding of crystals from the deposits.^{7,8}

In patients with tendonitis of gastrocnemius, there is marked tenderness in the region of the origin of the tendon of the medial head with posterior knee pain induced by stretching the tendon. An injection of 1% lidocaine with steroid into the tendon resulted in relief from pain and improvement in the range of movement of the knee.

Calcifying tendonitis is a differential diagnosis when calcification is found in relation to an osteoarthritic knee.

No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article.

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