

Case Study

Sciatic Nerve Entrapment Causing Posterior Knee Pain

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ABSTRACT

We report a case of sciatic nerve entrapment resulting in a patient experiencing pain over the posterior aspect of the knee, simulating a Baker's cyst. Surgical exploration revealed a tight fibrous arch compressing the distal portion of the sciatic nerve, proximal to its bifurcation. Decompression of this entrapment led to complete relief of symptoms. This form of presentation is rare and should be considered as a differential diagnosis when a patient presents with complaints of pain in the back of the knee.

Keywords: Sciatic nerve compression, pain in the back of the knee

INTRODUCTION

Sciatic entrapment neuropathy is a relatively uncommon entity in which the typical presentation is that of radiculopathy. Entrapment of the sciatic nerve generally affects the more proximal portion. In such cases, either the tibial or peroneal component may be affected – usually presenting with sensory or motor deficit ^[1]. We present a case where the distal sciatic nerve was compressed by fibrous bands proximal to its bifurcation in a patient presenting with dull ache in the knee joint simulating a Baker's cyst.

CASE REPORT

A 62-year-old woman presented with a history of a dull, throbbing ache in the left knee for a period of 4 months. The ache was localized, deep-seated, continuous, and had progressively worsened when she presented to our clinic with inability to walk without pain. There was no history of trauma or infection of the affected knee.

She is a diabetic and a hypertensive on regular treatment. She also suffers from a previous mild ischaemic stroke with residual hemiparesis (Medical Research Council Grade 4) of the left side of her body. She was otherwise active and ambulated fairly well without aids prior to the onset of her left knee problem.

Clinical examination revealed an obese patient with an antalgic gait. Examination of the knee detected the presence of crepitus of the knee joint without limitation of movement, suggestive of an early osteoarthritis. A deep-seated swelling measuring approximately 2 × 3 cm was felt on the lower aspect of the popliteal fossa – it was fluctuant, mildly tender, and

non-mobile. Neither sensory deficit nor an increase in muscle weakness was noted on neurological examination of the lower limb. Additionally, there was no pedal oedema, nor varicosities. Radiographs of the left knee showed early osteoarthritic changes with a reduced medial joint space and subchondral sclerosis of the medial tibial condyle. A clinical diagnosis of a left Baker's cyst was made and a decision made to excise the lesion because of the pain. No further radiological investigations were done.

Through a lazy-S incision, the popliteal fossa was explored. To our surprise, no cystic lesion resembling a Baker's cyst was discovered. However, a compression of distal sciatic nerve and both the tibial and common peroneal branches as they bifurcate from the sciatic nerve was noted (Figure 1). This was seen in the proximal aspect of the wound. The compression was due to a tight fibrous band forming an arch between the biceps femoris and semimembranosus muscles. The popliteal vein and its tributaries were dilated and tortuous. The fibrous band was divided and the distal sciatic nerve and its branches decompressed. The tortuous and dilated veins returned to normal after the decompression. No other abnormalities were found. The swelling noted clinically was probably just a collection of adipose tissue.

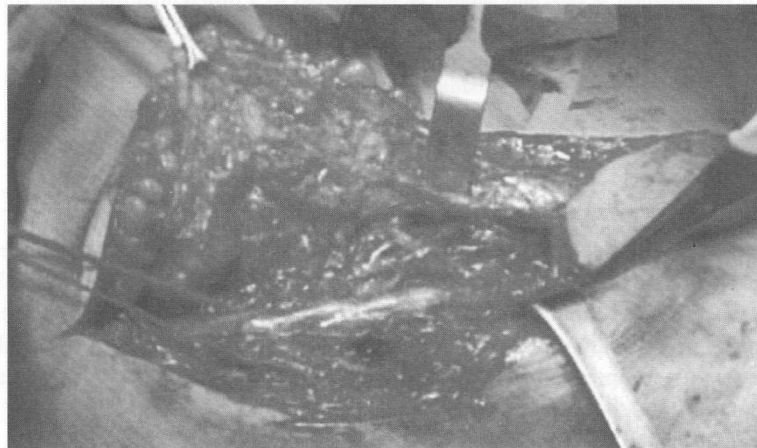


Figure 1. Constriction of the distal sciatic nerve and its branches

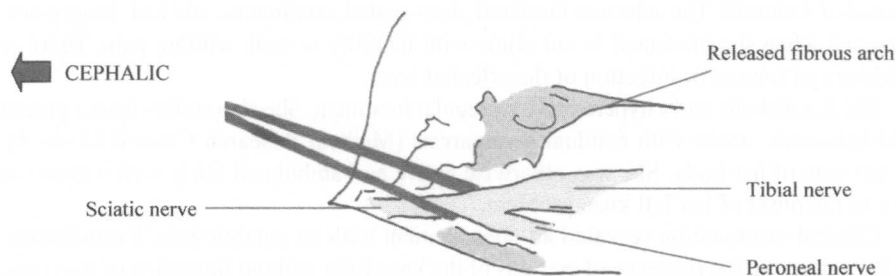


Figure 2. Schematic representation of findings

Postoperatively, the patient suffered no more aches of the knee joint. At the last follow-up, six months post-operatively, she complained of similar aches in the contralateral knee but no surgical intervention is anticipated for the time being.

DISCUSSION

Compression of the distal trunk of the sciatic nerve is an uncommon entity judging by the rarity of its description in medical literature. As with other forms of nerve compression syndromes, it can present as a dull ache. However, in this case, the patient did not present with the usual radiculopathy with associated sensory and motor loss, as is normally the case. We could only speculate that compression of this particular nerve was not as severe as other compression syndromes. The distal sciatic nerve was entrapped within a fibrous band between the biceps femoris and semimembranosus muscles. The diameter of the tunnel thus created may not be narrow enough to incur sensory or motor symptoms and signs.

To our knowledge, there have only been a few previous reports describing such a condition [2-4]. There are only two other reported cases of distal sciatic nerve entrapment caused by fibrous bands. Banerjee *et al.* described a patient with posterior thigh pain and paralysis due to a tight myofascial band connecting the biceps femoris and adductor magnus muscles [2]. Venna *et al.* reported on a child presenting with progressive sciatic nerve dysfunction due to a fibrovascular band constricting the sciatic nerve between the middle and distal thirds of the thigh [3]. Beaudry *et al.* also described distal sciatic nerve compression; not by fibrous bands but by a thrombosed popliteal artery aneurysm [4]. Unlike our patient, theirs presented with progressive sensory and motor complaints. We believe ours is a rare case of distal sciatic nerve compression by fibrous bands proximal to its bifurcation into the tibial and peroneal nerves and presenting only with pain in the knee joint.

Most reports of nerve entrapment in the popliteal fossa have described compression of the tibial nerve only. A case of tibial nerve entrapment was described by DiRisio *et al.* whereby the nerve was selectively compressed by a Baker's cyst [5]. Ekelund reported on a case of tibial nerve compression from the fibers of the medial gastrocnemius [6]. Iida *et al.* also gave a similar account in a 58-year-old patient presenting with pain in the sole of the foot [7]. Another 5 cases of tibial nerve entrapment were reported by Mastalgia *et al.* [8]. In their report, the tendinous arch of the soleus muscle origin was the source of compression. Podore described a case whereby the tibial nerve was entrapped by fibrous bands between the gastrocnemius heads [9]. Psathakis described the so-called pseudo-entrapment syndrome in which the popliteal artery and tibial nerve were compressed by fibrous bands [10] whereas Tani reported a case of compression of the tibial nerve by fibrous bands in a 42-year-old farmer [11]. In all these cases, as with other entrapment syndromes, decompression gave prompt and long-lasting relief.

This case demonstrates the need to fully investigate the cause of posterior knee joint pain. The presence of pain and a 'lump' in the popliteal fossa region, even in the face of established osteoarthritis of the knee, does not necessarily mean a painful Baker's cyst is the diagnosis. It may be more prudent to resort to at least an ultrasound investigation to establish such a diagnosis.

In conclusion, although rare, compression of the distal sciatic nerve must be kept in mind when dealing with patients presenting with posterior knee pain.

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