Available online at www.sciencedirect.com
ScienceDirect
The Knee 15 (2008) 151–154
The Knee
www.elsevier.com/locate/knee

Short communication

Snapping knee syndrome in an athlete caused by the semitendinosus and gracilis tendons. A case report

D. Karataglis [a,*], P. Papadopoulos [a], A. Fotiadou [b], A.G. Christodoulou [a]

[a] *Orthopaedic Department, Aristotelian University of Thessaloniki, "G. Papanikolaou" General Hospital, 57010, Exohi, Greece*
[b] *Radiology Department, "G. Papanikolaou" General Hospital, 57010, Exohi, Greece*

Received 3 October 2007; received in revised form 18 December 2007; accepted 19 December 2007

Abstract

We report a case of symptomatic subluxation of the semitendinosus and gracilis over the posteromedial corner of the tibia manifesting with snapping. This is the first such case recorded in non-Asian population and in a high-demand athlete. Snapping was reproduced on active extension of the knee and at initiation of flexion and could be readily palpated over the posteromedial aspect of the tibia. Dynamic ultrasound, a key diagnostic tool in such conditions, revealed abrupt anterior subluxation of the semitendinosus and gracilis tendons during active terminal extension over the insertion of the semimembranosus as well as areas of tendinopathy corresponding with the site of subluxation.

Due to failure of conservative treatment, surgery was undertaken, involving tenotomy and resection of a 10–12 cm segment of the semitendinosus and gracilis. The patient returned to the same level of sporting activities within 4 months and remained symptom-free 18 months post-operatively.

The role of eccentric loading of the knee joint, as well as the "protective" role of the accessory tendinous bands and aponeurotic expansions of the semitendinosus and gracilis is discussed.

Keywords: Snapping; Semitendinosus; Gracilis

1. Introduction

Snapping symptoms around the knee are a rather rare condition and have been described in association with a number of causes [1–8]. In most cases it involves the lateral aspect of the knee and it has been highly associated with the presence of discoid meniscus [1,2]. It may also result from biceps femoris or iliotibial band pathology and more rarely from intra-articular tumours or cysts [3–6]. Snapping symptoms are even more uncommon around the medial aspect of the knee [6–8]. We report a case of symptomatic snapping of the semitendinosus and gracilis tendons over the posteromedial corner of the tibia in a high-demand athlete.

2. Case report

2.1. Clinical presentation

A 32 year old Caucasian semi-professional volleyball player presented with a 4-year long history of a painful snapping sensation over the posteromedial aspect of his right knee. Relatively mild snapping coupled with discomfort was noted initially following a period of intensive training, but no clear trauma could be related to the onset of his symptoms. Treatment with medication, physiotherapy and local steroid injections only temporarily alleviated his symptoms. This painful snapping sensation progressively worsened causing pain during sporting activities and some discomfort even when he was walking at a brisk pace, eventually forcing him to abandon his sporting career and discontinue all strenuous activities.

On clinical examination there was no angular deformity of his knees, no limb length discrepancy or muscle atrophy and the patient had a normal Q-angle. Furthermore, no linear or

* Corresponding author. 8, Thiseos str, 54250 Thessaloniki, Greece. Tel.: +30 2310 318058.
E-mail address: dkarataglis@yahoo.gr (D. Karataglis).

0968-0160/$ - see front matter © 2008 Elsevier B.V. All rights reserved.
doi:10.1016/j.knee.2007.12.008

Fig. 1. a. MRI (sagittal view) showing existence of fluid in the semimembranosus bursa and the sheath surrounding the semitendinosus and gracilis (arrows) (Philips Intera 1.5 T, Philips Medical Systems Holland BV, Sequence: T2 WFFE). b. MRI (transverse view) showing fluid in the semimembranosus bursa and surrounding oedematous fat (arrows) (Philips Intera 1.5 T, Philips Medical Systems Holland BV, Sequence: T2 WFFE).

rotational instability could be elicited and the patient had full knee flexion and could hyperextend both his knees to about 10°. The snapping sound could be reproduced on active extension of the knee in the arc of 0–15° and at initiation of flexion as the knee moved from slight hyperextension to the initial 15° of flexion. The site of snapping could be readily palpated over the posteromedial aspect of the tibia and the area was moderately tender.

2.2. Imaging

Plain radiographs were normal. Further investigation with an MRI scan did not show any intra-articular pathology. It revealed though abnormal thickening of the semitendinosus and to a lesser extent of the gracilis tendon distal to the myotendinous junction, together with surrounding oedematous fat and existence of fluid in the semimembranosus bursa and the sheath surrounding the semitendinosus and gracilis (Fig. 1a,b).

Dynamic ultrasound examination, that allows for visualisation of the course, relations and position of the tendons over a full ROM, showed an abrupt anterior subluxation of the semitendinosus and gracilis tendons during active terminal extension over the insertion of the direct arm of the semimembranosus tendon at the posteromedial corner of the tibia. A well demarcated hypoechoic area located on the semimembranosus tendon at its insertion site, as well as on the semitendinosus and gracilis tendons, corresponding with the site of subluxation, was also noted, suggesting tendinopathy of the above tendons.

2.3. Surgical technique

The patient was placed supine with a sandbag underneath the contralateral side facilitating abduction and external rotation of the operated leg and a pneumatic tourniquet was applied. A diagnostic arthroscopy of the knee was performed first and no intra-articular pathology was revealed. Subsequently, through a slightly curved 10 cm skin incision the medial patellar retinaculum was incised at the anterior border of the sartorius allowing for the semitendinosus and gracilis tendons that lie underneath to be exposed all the way to the myotendinous junction. The sheath was evidently fibrosed and an area of tendinitis was noted at the insertion of the direct arm and the origin of the reflected (anterior) arm of the semimembranosus tendon, corresponding with the point of contact with the semitendinosus and gracilis (Fig. 2). Forced passive extension of the leg was performed intra-operatively and could only reproduce a small degree of subluxation of the semitendinosus

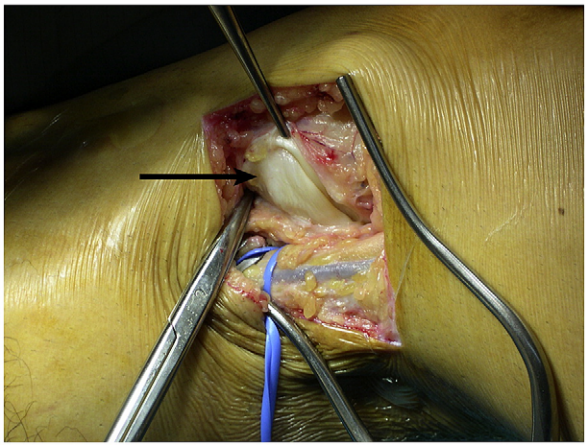

Fig. 2. Intra-operative view. Tendinitis is noted at the insertion of the semimembranosus tendon, corresponding with the point of contact with the semitendinosus and gracilis (arrow).