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The Knee

Case report

Snapping knee syndrome caused by semitendinosus and semimembranosus tendons. A case report

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ABSTRACT

We report the case of a 24-year-old female triathlon athlete with a snapping syndrome of both the distal semimembranosus and the semitendinosus tendon which has not been described so far. The semitendinosus tendon was harvested whereupon snapping has diminished. Tenoscopy and digital palpation showed the semimembranosus tendon to cause the snapping, as well. A careful step-by-step release of the anterior insertion of the tendon was performed with the result of a snapping-free range of motion of the patient's knee.

1. Introduction

Snapping syndromes of tendons around the knee joint are rare. Several causes have been described involving the distal semitendinosus (STT), gracilis tendon (GT) and the distal biceps femoris tendon [1–4]. The snapping syndromes may occur without identifiable reason or due to a pathology of the knee joint or the periarticular tissues [5,6]. Patients describe the snapping either as a discomfort or as a pain. As many of the patients reported upon are athletes they expect complete rehabilitation after the medical treatment.

Contained here within is a primary case report from an athlete who sustained an audible and visible snapping of both the distal semimembranosus tendon (SMT) and STT which has not been described so far.

2. Case report

2.1. Clinical findings

Presented here is a 24 year old female Caucasian triathlon athlete with a 10 month history of a postero-medial snapping of her right knee. She cannot recall any trauma and has no possible related illnesses in her medical history. The patient could provoke the snapping with a combined forced extension of her knee with a hyperextension angle of 10°. In addition, the snapping could be provoked passively by flexing the right hip joint coupled with a knee extension which causes stretching of the hamstrings (Supplementary video 1).

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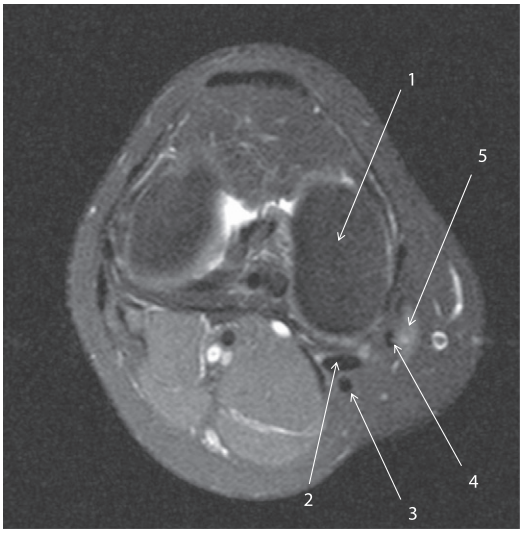

Figure 1. MRI of the right knee (axial): relationship between the SMT and the medial femoral condyle. 1) Medial femoral condyle; 2) semimembranosus tendon; 3) semitendinosus tendon; 4) gracilis tendon; 5) sartorius muscle.

The clinical investigation showed neither an axis deviation of the right leg nor a limb length difference. Circumference of the thigh and lower leg showed no side related difference. Due to the sporting activities of the patient, the skeletal muscles of both legs were strong. Collateral ligaments were intact, there was no pathological antero-posterior translation or a sign for rotational instability. Range of motion was Ex/Flex 15°–0–140°. The snapping could be palpated postero-medial over the medial condyle of the right femur.

2.2. Imaging

X-ray including whole leg radiographs showed no pathologies. Additionally, ultrasound imaging of the right anserine pes, the distal medial hamstrings and the popliteal fossa showed no abnormalities or conditions caused by a trauma. Finally the magnetic resonance imaging (MRI) scan revealed no conspicuous aspects but did show the close relationship between the SMT and the medial femoral condyle (Figures 1, 2).

2.3. Surgical procedure

An open surgical approach to the anserine pes and the medial hamstring tendons was performed in a supine position of the patient under general anesthesia. After the incision of the fascia cruris, the tendons of sartorius, gracilis, semitendinosus and semimembranosus muscles were identified. The tendons were followed from the anserine pes to the musculotendinous transition and to the medial and dorsal area of the medial femoral condyle. The use of tenoscopy had no advantage over digital palpation due to limited visualization with the endoscope in the soft tissues. Passive flexion and extension of the knee were performed

Figure 2. MRI of the right knee (sagittal): relationship between the SMT and the medial femoral condyle. ★ Medial femoral condyle. ◆ SMT.