



Case Report

Sartorius muscle tear presenting as acute meralgia paresthetica

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ABSTRACT

We present an unusual case of sartorius muscle tear presenting as acute meralgia paresthetica. A healthy 67-year old male was referred to our department with a one-week history of pain, numbness and bruising over his hip and anterolateral thigh. Extended ultrasound assessment revealed an intramuscular tear of sartorius, with acute hematoma surrounding the adjacent lateral femoral cutaneous nerve. Meralgia paresthetica from acute trauma is rare, with only three published cases relating to fractures of the anterior superior iliac spine. To our knowledge, this is the first case caused by muscular tear in the literature. The presence of features attributable to neuropraxia of the lateral femoral cutaneous nerve allowed for proper localization and diagnosis of the patient's injury.

1. Introduction

Meralgia paresthetica is a well-described neuropathy of the lateral femoral cutaneous nerve, which manifests as pain and paresthesia over the anterolateral aspect of the thigh. Nearly eighty causes of meralgia paresthetica have been described [1], most due to mechanical irritation of the nerve as it exits the abdominal cavity adjacent to the anterior superior iliac spine [2].

Traumatic injury presenting as acute meralgia paresthetica is rare, with only three cases reported in the literature [3–5]. Each of these cases involves avulsion fractures of the anterior superior iliac spine in adolescent males. We describe the first reported case of meralgia paresthetica secondary to acute muscle tear.

2. Case report

A healthy 67-year old man was referred for outpatient ultrasound with a history of pain and bruising over his left hip and anterolateral thigh. He reported a history of feeling a “snap” at his hip after jumping onto his left leg while playing table tennis, with subsequent onset of symptoms. Neurologic assessment in the emergency department at the time of initial presentation revealed no focal deficits. Assessment in the ultrasound department four days later revealed normal, symmetric muscle bulk, with decreased light touch sensation over the anterolateral thigh. Power was not assessed in view of the traumatic history and stated pain.

Routine ultrasound of the left hip joint demonstrated no significant abnormality. In view of the anterolateral thigh numbness and traumatic

aetiology, the US assessment of the hip was extended to include the proximal anterior thigh musculature extending superiorly to the anterior superior iliac spine. This extended assessment demonstrated a 10 × 19 mm grade 2 tear of the proximal sartorius muscle (Fig. 1), 3 cm distal to the anterior superior iliac spine. Hematoma extended laterally from the muscle tear to surround the perineural fat of the lateral femoral cutaneous nerve, increasing the conspicuousness of the nerve (Figs. 2, 3). The individual nerve fascicles were hypoechoic and thickened, measuring up to 1 mm in anteroposterior diameter. A diagnosis of post-traumatic lateral femoral cutaneous nerve neuropraxia secondary to the irritant effect of the adjacent haematoma was made.

At three-month follow-up, the sartorius tear could no longer clearly be delineated. Residual hyperechogenicity at the site of the tear was noted, consistent with post traumatic intramuscular fibrosis (Fig. 4). The hematoma surrounding the lateral femoral cutaneous nerve had essentially resolved. Centrally, the nerve fascicles were less hypoechoic, with interval decrease in maximum anteroposterior diameter to 0.5 mm (Fig. 5). The patient reported improvement in his symptoms, with mild residual numbness remaining over his anterolateral thigh.

3. Discussion

The lateral femoral cutaneous nerve is a sensory nerve which originates from the dorsal roots of L2 and L3 [6]. It passes between the psoas major and quadratus lumborum muscles, and then travels over the anterior margin of the iliacus muscle toward the anterior superior iliac spine [7]. Its exit from the abdominal cavity is variable, with passage ranging between 4 cm posterior and 6 cm medial to the anterior

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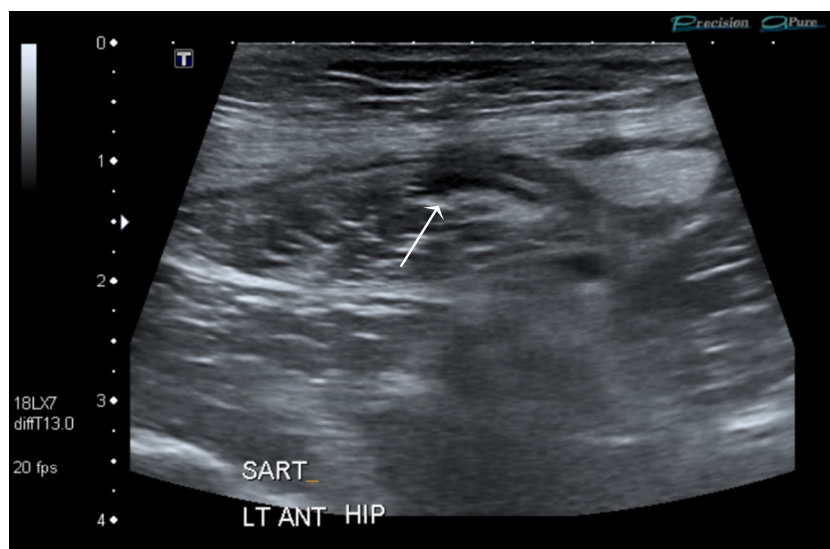


Fig. 1. Short-axis view of the sartorius muscle demonstrates linear intramuscular hypoechoogenicity in keeping with a grade 2 tear (white arrow).

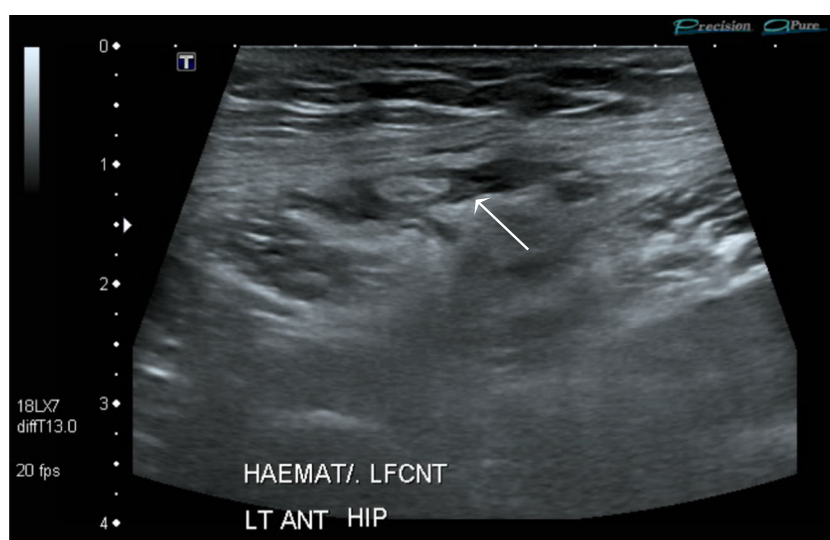


Fig. 2. Short-axis view demonstrates hypoechoic extramuscular hematoma surrounding the perineural fat of the lateral femoral cutaneous nerve (white arrows).

superior iliac spine [8]; most commonly, it originates superficial to the origin of the sartorius, directly medial to the anterior superior iliac spine [7]. The nerve becomes most susceptible to injury at this point, particularly when near the inguinal ligament [2].

While there exist many causes of meralgia paresthetica [1], presentation due to acute trauma is rare. We know of three published cases, each of which involve fractures of the anterior superior iliac spine in adolescent males. Open reduction and internal fixation was performed in two cases. At the time of surgery, mechanical entrapment of the lateral femoral cutaneous nerve was observed by the fracture fragment [4] and hematoma [3]. In the third case, it was hypothesized that symptoms were due to neuropraxia from edema and hematoma, as conservative therapy resulted in eventual resolution of symptoms [5].

We present a case of meralgia paresthetica following acute muscular tear, which to our knowledge is the first such case in the literature. Our patient presented for evaluation of the left hip and thigh; it was upon further questioning which revealed the additional history of numbness,

prompting evaluation of the lateral femoral cutaneous nerve.

The lateral femoral cutaneous nerve was easily identifiable adjacent to the tear in sartorius, encircled by subacute hematoma. It has been previously described that perineural hematoma can result in structural nerve injury, including neural inflammation and myelin damage [9]. In our patient, the nerve was demonstrated to be hypoechoic and thickened, which we postulate was caused by irritation from the surrounding hematoma. The patient's symptoms had improved at 3-month follow up, with sonographic evidence of decreased fascicular thickening and interval resolution of the perineural hematoma. Images of a normal lateral femoral cutaneous nerve in an asymptomatic patient are provided in Figs. 6 and 7 for comparison.

In summary, we present an unusual case of sartorius muscle tear presenting as acute meralgia paresthetica. The presence of symptoms attributable to the lateral femoral cutaneous nerve aided in localization of the traumatic injury. To our knowledge, this is the first such case in the literature.

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