ABSTRACT

A 23 year old amateur football player presented nine months after suffering acute severe pain and a lump in the distal posterior knee after lifting a heavy box. He was unable to return to football or climb stairs. The clinical diagnosis suspected a form of bakers cyst however MRI study was essentially normal. Subsequent ultrasound demonstrated a dynamic ‘Popeye sign’ of the distal semimembranosus (SM) tendon, the sequelae of an intra-substance tear of the distal myotendinous junction. The patient was reassured by the diagnosis and was able to return to play after 3 months of physiotherapy.

INTRODUCTION

23 year old male, amateur striker football player, presented with a lump in the posterior distal third of the thigh. He described a nine months history of right posterior knee pain associated with an injury that he sustained whilst lifting heavy boxes in a warehouse (Fig 1). He describes 6/10 constant pain, but this did not disturb his sleep. He had noticed that it has increased in size over the last nine months and over the last month it has limited his activity and he is unable to play football, run or even walk upstairs. The initial diagnosis was made of mass of unknown cause but possible bakers cyst. The patient was then referred from an MRI study by the general practitioner for characterization of the lump. The MRI study (Fig 2.) revealed no bakers cyst, no mass or definite cause for the mass. In particular the SM and pes anserine tendons appeared normal. A focused ultrasound study was then requested after review by a sports doctor to correlate the ‘Popeye’ sign to real-time imaging.

IMAGING FINDINGS AND TREATMENTS

An ultrasound was performed at Charing Cross Hospital Site using an Aplio 500 Toshiba machine and a linear 14MHz transducer. The probe was placed longitudinal to the myotendinous junction of the SM. Initially this appeared unremarkable however after a resisted isometric contraction was performed a bulging muscle was demonstrated (Fig 3.) This corresponded to the area of presumed injury which corresponds to the region of distal described by Woodley and Mercer, 2005 as region C of the bulky distal muscle belly

DISCUSSION

The SM muscle is one of the three hamstring tendons, which include the biceps femoris (BF) and the semitendinosus (ST). This group of muscles are located in the posterior compartment of the thigh. The proximal myotendinous junctions of the long head of the biceps femoris and SM are the more commonly affected hamstring injury in football players Pollock et al., 2014. The ‘Popeye sign’ is well recognised in the injury of the long head of biceps tendon in the upper limb. To our knowledge, this appearance of a pop eye sign of the distal semi-membranosus myotendinous junction tear has not been previously reported.

REFERENCES


Watura, C. and W. Harries (2009). “Isolated tear of the tendon to the medial head of gastrocnemius presenting as a painless lump in the calf”. In: Case Reports 2009;may18 1, bco0120091468-bcr0120091468. doi: 10.1136/bcr.01.2009.1468. url: https://doi.org/10.1136/bcr.01.2009.1468.