

SNAPPING KNEE FROM ANOMALOUS BICEPS FEMORIS TENDON INSERTION: A CASE REPORT

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INTRODUCTION

Symptomatic snapping of the biceps femoris tendon over the fibular head due to an anomalous insertion is a rare condition. We report a case of painful biceps femoris snapping elicited with knee range of motion with tibial internal rotation. Failing conservative treatment, the patient had anatomic repositioning of the tendon with resolution of snapping and symptoms at follow-up.

CASE REPORT

A sixteen year old male presented with a two week history of right knee pain following a soccer match. Pain was localized to the lateral side of the knee, and was exacerbated with activity. On physical examination a palpable pop was localized to the lateral side of the knee during a McMurray test. Closer inspection demonstrated the snap to be localized over a tender fibular head. The snap was elicited when knee motion was ranged from 120 to 100 degrees and only with internal tibial rotation. The remaining knee examination was normal; however, a similar snap was appreciated on the asymptomatic contralateral knee using the same maneuver. Routine radiographs were normal. The patient was treated with ten days of rest and anti-inflammatory medication with partial resolution of his symptoms.

Three years later the patient returned complaining of steadily increasing pain and functional limitation that was refractory to activity modification. Radiographs and magnetic resonance imaging were normal. The patient was diagnosed with snapping biceps femoris tendon and was indicated for exploration and tendon stabilization.

At surgical exploration the biceps femoris tendon inserted onto the anterolateral aspect of the proximal tibia. No attachment to the fibular head was appreciated. The diagnosis was confirmed as the biceps femoris tendon was noted to displace over the fibular head during knee extension from 120 to 100 degrees with internal tibial rotation (Figures 1 and 2). The tendon was reinserted into

the posterolateral fibular head through a ten millimeter drill hole and sutured to bone and periosteum. Postoperatively, the patient was immobilized for four weeks in a long leg cast in five degrees of flexion. Rehabilitation progressed uneventfully and at one year follow-up the patient was asymptomatic without snapping and no appreciable hamstring weakness.

DISCUSSION

Although anatomical variations to the biceps femoris insertion are known,⁶ symptomatic snapping of the biceps femoris tendon due to an anomalous insertion is a rare clinical entity; only two previous cases have been reported^{3,4}. Other causes of symptomatic knee popping in adolescents include semitendinosus snapping,³ meniscal tears, discoid meniscus,¹ and congenital snapping of the knee². In congenital snapping, articular dysplastic features are associated with subluxation in extension and reduction or snapping with flexion. As in the current report, both previous cases of snapping biceps femoris tendon were bilateral with symptoms on only one side^{3,4}. In contrast with the other cases published, snapping was only appreciated with internal tibial rotation during range of motion from 120 to 100 degrees. During this maneuver, rotation tightens the tendon and places the fibular head in a prominent anterolateral position; both of which enhance the snapping.

During surgical exploration the complete biceps femoris tendon was noted to insert entirely on the anterolateral aspect of the proximal tibia. The tendon was reinserted into the posterolateral fibular head with resolution of symptoms and snapping. Kristensen et al, reported a similar anomalous insertion of the tendon; however, surgical treatment in this case involved fibular head resection³. The possibility of inadequate bone resection and continued symptoms is contrasted with our anatomic positioning and concordant risks of tendon rupture. Lokiec et al, reported an abnormal insertion of the tendon on the anterior aspect of the fibular head; in that case, symptoms were relieved after partial repositioning to the anatomic position⁴.

In conclusion, lateral knee snapping from an anomalous insertion of the biceps femoris tendon may become symptomatic. Although rare, the incidence is not truly known as asymptomatic cases do exist as evidenced in the current and previous reports. Failing conservative treatment the authors prefer anatomic repositioning.

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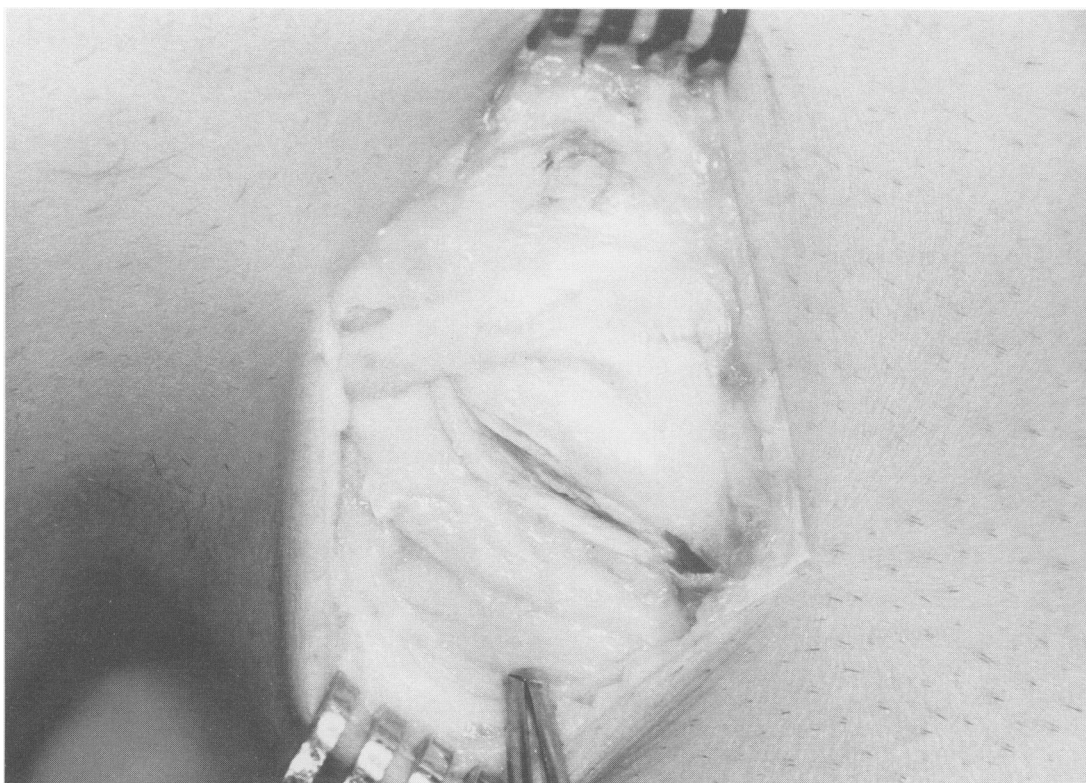


Figure 1. Intraoperative photograph demonstrates anterolateral tibial insertion and anterior positioning of the biceps femoris tendon over the fibular head at 90 degrees of knee flexion.

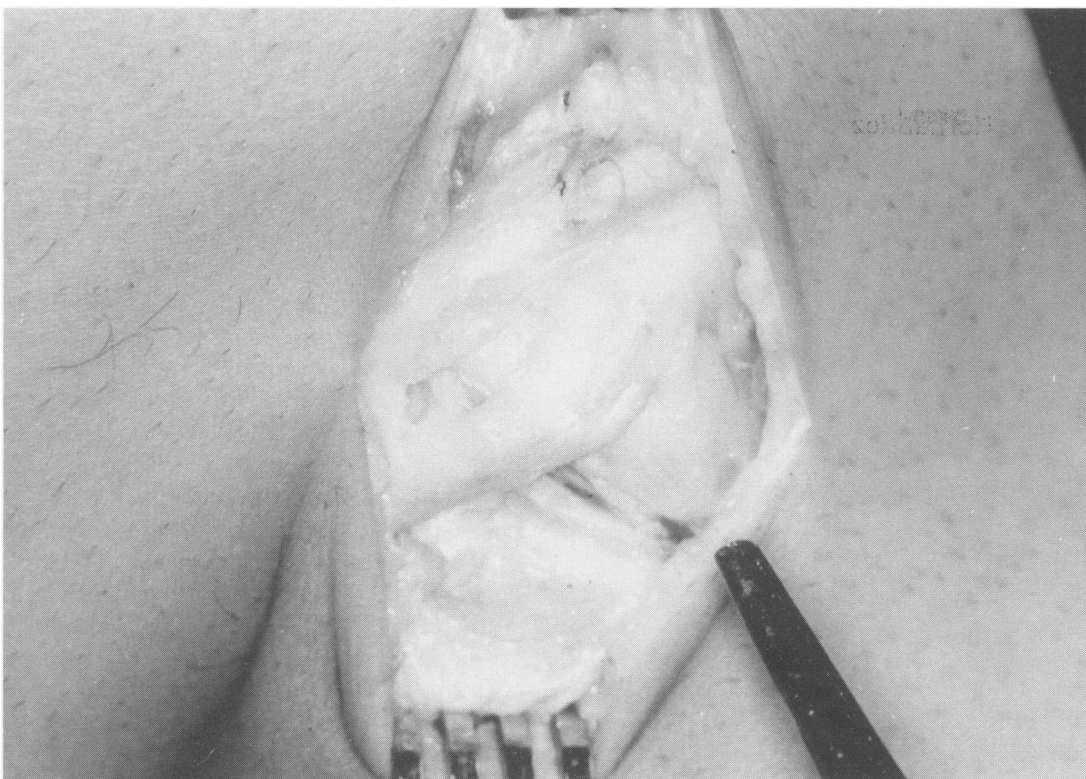


Figure 2. Intraoperative photograph demonstrates that with further flexion greater than 120 degrees and internal rotation the biceps femoris tendon displaces over the fibular head.

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