Snapping Knee Syndrome of the Medial Hamstrings

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abstract

Snapping of the medial hamstrings is a rare condition, with few cases reported throughout the literature. The snapping sensation reportedly occurs when a hamstring tendon passes over the medial tibial condyle, a muscle belly, or another tendon. The semitendinosus tendon is frequently involved, but concomitant involvement of the semitendinosus and gracilis tendons has also been described. Although the exact etiology remains unclear, authors have theorized that the condition results from a congenital malformation or degradation of the accessory tendinous expansions of the semitendinosus. Whereas most cases resolve with conservative treatments, select cases require surgical intervention. Both the distal surgical release and tendon harvest have proved viable surgical procedures, achieving symptom alleviation with minimal patient morbidity. In this article, a case of medial snapping hamstring tendons involving both the semitendinosus and gracilis tendons is reviewed. A 17-year-old African American girl presented with extreme pain and snapping on the posteromedial aspect of her knee was appreciated. Radiographs were ordered and showed no acute fracture, no acute dislocation, normal medial joint space, normal lateral joint space, and normal patellofemoral space. Conservative and surgical options were reviewed, and the patient elected to undergo harvest of the tendons. Four weeks postoperatively, the patient reported complete resolution of symptoms. To date, there has been no recurrence of symptoms. The authors hope to increase awareness of this condition and add to the existing body of literature. [Orthopedics. 2015; 38(10):e940-e942.]
Snapping syndrome has been described as “a sudden jerk movement...” and reportedly affects numerous joints throughout the body.2-7 The hip,2 shoulder,5,7 and ankle6 are most frequently reported, whereas snapping of the medial hamstrings is a rare condition, with few reports throughout the literature.1,8-11

Snapping of the medial hamstrings has been attributed to a tendon passing over the medial tibial condyle, a muscle belly, or another tendon.1 It is often appreciated with active contraction of the knee9,11 but also can occur with passive movements.10 Case reports have described the isolated involvement of the semitendinosus tendon8-11 and the concomitant involvement of the semitendinosus and gracilis tendons.5-10 Although the etiology of the condition remains unclear, investigators have theorized that the snapping syndrome results from a congenital malformation or degradation of the accessory tendinous expansions of the semitendinosus.9,11 Although operative treatment is seldom required, in some instances, the symptoms progress and surgical intervention is required for resolution.

The following case describes the clinical, radiologic, and operative findings of symptomatic medial snapping pes syndrome, involving both the semitendinosus and gracilis tendons.

Case Report
A 17-year-old girl presented to the authors’ orthopedic clinic for an evaluation of her left knee. At the time of the clinical evaluation, she was using crutches for ambulation. She reported injuring her knee 1 year earlier. The symptoms resolved, but the pain returned approximately 9 months later and she noticed a snapping sensation on the posteromedial aspect of her knee. On a scale of 0 to 10, with 0 representing no pain and 10 representing excruciating pain, the patient reported a pain score of 8.

The patient’s knee pain complaints were reviewed for location, severity, aggravating factors, and acuity. No visible abnormalities were observed during the knee examination. Palpation of the left knee demonstrated medial joint line tenderness and medial hamstring tenderness. No effusion was observed, and the knee demonstrated full range of motion. The patient reported knee pain with flexion and extension. With active contraction of the knee, snapping of the semitendinosus and gracilis tendons was evident, both visually (Video) and on palpation. The patient was neurovasculary intact in both the right and left lower extremities. No signs of deep venous thrombosis were observed. Radiographs showed no acute fracture, no acute dislocation, normal medial and lateral joint space, and normal patellofemoral space.

Both conservative and surgical treatment options were reviewed with the patient. The risks and benefits were discussed at length. However, given the intractable knee pain, it was determined that surgical harvest of the snapping hamstring tendons was the best option for long-term pain relief.

A straight incision was made and centered over the pes anserinus and the dissection was carried down through the subcutaneous tissue. Hemostasis was obtained with electrocautery. The superior border of the pes anserinus was identified and incised transversely, which brought the gracilis into view. The tendon was tagged and released using a tendon stripper. Next, the semitendinosus tendon was identified, tagged, and incised. This tendon was also released using a tendon stripper. After the tendons were removed, the knee was examined to ensure there was no other cause of the snapping.

The patient was seen 1 week after tendon harvest for staple removal. Physical therapy was initiated 1 week later. During the initial evaluation, the patient was instructed in and performed a home exercise program. The physical therapist also instructed the patient on the use of crutches. Partial weight bearing was maintained for approximately 3 weeks, after which full weight bearing was permitted. At 7 weeks after harvest, the symptoms have completely resolved; she reports no pain, no further snapping of the hamstring tendons, and no longer requires crutches for ambulation. She is currently attending physical therapy.

Discussion
The current report described a case of medial snapping hamstring syndrome. Previous case reports describing snapping of the semitendinosus and gracilis tendons of the knee have been restricted to Asians and Caucasians.1,10,11 To the authors’ knowledge, this is the first description of medial snapping hamstring tendons in an African American patient.

The patient in the current report experienced extreme pain and elected to undergo harvest of the hamstring tendons. Similar to previous research,1,8 the patient demonstrated resolution of pain and snapping following surgical treatment. Currently, there has been no recurrence of symptoms.

For operative treatment of medial snapping hamstring syndrome, either a distal surgical release or tendon harvest can be used.1,8,9 Both techniques have been shown to alleviate symptoms with minimal patient morbidity. The senior author (M.F.B.) has extensive experience with knee ligament reconstruction. Because autologous harvesting of the hamstring tendons is well-established with no documented functional deficits, harvest of the tendons was elected.

Although not used in the current study, ultrasonography has proven a useful diagnostic tool.1 In an earlier report, Bollen and Arvinte1 used dynamic ultrasound to visualize snapping hamstring tendons in real time. The visualization of the soft-tissue structures moving through flexion and extension afforded adequate delineation to determine which tendons were snapping and over which structures.

Currently, case reports are the primary means of learning more about this rare
condition. The sharing of individual experiences will eventually compile more information to optimize patient care. The current report demonstrates that snapping of the semitendinosus and gracilis tendons extends beyond Asian and Caucasian populations and that pain resolution can occur following hamstring harvest.

REFERENCES
2. Geeslin AG, LaPrade RF. Surgical treatment of snapping medial hamstring tendons.