Eklem Hastalıkları ve Cerrahisi
Joint Diseases and Related Surgery

Case Report / ***Olgu Sunumu***

Eklem Hastalik Cerrahisi
2019;30(3):322-324
doi: 10.5606/ehc.2019.70192

Endoscopic treatment of bilateral hallux saltans in an ordinary woman

Sıradan bir kadında iki taraflı halluks saltansın endoskopik tedavisi

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ABSTRACT

In this article, we present a 47-year-old female patient applying with pain in posteromedial of ankle and trigger toe complaints. There was no predisposing factor such as dance or sports or any radiological sign such as os trigonum. Posterior ankle endoscopy technique was used for evaluation and it was observed that the FHL tendon was triggered. Fibrous thickening around the tendon was released with endoscopic instruments. After release, it was observed that the FHL tendon was not triggered with toe movements. Hallux saltans can be treated by posterior endoscopic methods with an attention to the tibial nerve such as other joint and soft tissue pathologies. To the best of our knowledge, this is the first case report of endoscopic treatment of bilateral HS in an ordinary female patient.

Keywords: Flexor hallucis longus tendon, hallux saltans, posterior ankle endoscopy, trigger toe.

ÖZ

Bu yazıda, ayak bileği posteromedialinde ağrı ve tetik ayak başparmağı yakınması ile başvuran 47 yaşında bir kadın hasta sunuldu. Dans veya spor gibi önceden belirleyici bir faktör ve os trigonum gibi radyolojik bir işareti yoktu. Değerlendirme için arka ayak bileği endoskopisi tekniği kullanıldı ve FHL tendonunun tetiklendiği gözlendi. Endoskopik aletlerle tendonun etrafındaki fibröz kalınlaşma gevşetildi. Serbest bırakıldıktan sonra, FHL tendonunun ayak başparmağı hareketleriyle yeniden tetiklenmediği görüldü. Halluks saltans, diğer eklem ve yumuşak doku patolojileri gibi tibial sinire dikkat edilerek posteriyor endoskopik yöntemlerle tedavi edilebilir. Bildiğimiz kadarıyla, sıradan bir kadın hastada iki taraflı HS'nin endoskopik tedavisinin ilk olgu sunumu budur.

Anahtar sözcükler: Fleksör hallusis longus tendonu, halluks saltans, posteriyor ayak bileği endoskopisi, tetik ayak başparmağı.

Hallux saltans (HS) is defined as the compression and triggering of the flexor hallucis longus (FHL) tendon and it traps commonly at the fibrous bone tunnel below sustentaculum tali.[1] The disease is mostly seen in dancers, particularly in ballerinas. During the ballet, when the 'demi pointe' movement is performed, the overload on FHL tendon causes this injury.[2-4] In addition to dancers, HS cases have been reported in tennis players,[5] football referees,[6] and runners.[7] Repeated excessive joint movements in the foot and ankle result in irritation, inflammation and hypertrophy of the FHL tendon. Inveteracy leads to intra-tendon partial tears, nodules and trigger finger formation. Complaint of pain in the posteromedial foot or triggering in the toe is usually consulted to orthopedic surgeons. In HS, the toe's interphalangeal joint gets stuck in a bent position and is brought to the extension manually with a "click" sound. Nodular

Received: June 18, 2019 Accepted: July 17, 2019 Published online: October 24, 2019

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Presented as podium presentation in congress of 27th National Turkish Orthopedics and Traumatology Congress 24-29 Ekim 2017

Citation:
Tokgöz MA, Kanatlı U, Vural A, Ataoğlu MB, Yapar A, Ergişi Y. Endoscopic treatment of bilateral hallux saltans in an ordinary woman Eklem Hastalik Cerrahisi 2019;30(3):322-324.

thickening of the trapped FHL tendon and tendon tears can be seen on ultrasonography (USG), while pathology cannot be detected on direct radiography. Ultrasonography is also more beneficial than magnetic resonance imaging (MRI) because of its ability to provide dynamic imaging. In this article, we present the endoscopic treatment of bilateral HS in a female patient without any predisposing factor.[8]

CASE REPORT

A 47-year-old female patient presented with similar complaints about ankle and foot on the left side in September 2014 and the right side in April 2017. Pain in the posteromedial of the ankle and trigger toe was the symptom that started two and nine months before, respectively. When toe of a patient who had no trauma history, was not engaged in any sport or did not dance professionally was brought to full extension, the toe remained locked in bent position. Locked toe did not improve with active dorsiflexion but could be corrected passively. There was tenderness on the posteromedial of ankle, in addition to sensation of clicking and popping felt when the locked finger was corrected in same area (Figure 1). Triggering became easier when the ankle was in plantar flexion. Range of motion and neurovascular examination of foot and ankle were normal. No mechanical sign was observed such as os trigonum or elongated lateral tubercle of the talus, which would entrap the FHL tendon on right side. In addition, posterior impingement syndrome was detected on left side. On MRI, edema was detected around the FHL tendon on both sides, while no additional pathology was found. An endoscopic examination of the ankle was decided. A written informed consent was obtained from the patient.

With the patient in prone position, the two-portal technique was used for both sides. The posterolateral and posteromedial portals are located at the lateral and medial side of the Achilles tendon just above the posterior calcaneal tubercle. All soft tissues attached to the posterior of the ankle and around the FHL were removed with 5 mm shaver. Endoscopically, it was observed that the FHL tendon was triggered. On left side, degenerative and partially torn FHL tendon was found and on right side, circular pressure mark due to compression of the fibrous sheath was seen on the tendon when tissues around the tendon were removed (Figure 2). The fibrous thickening around the tendon was released with endoscopic instruments. After the release, it was observed that FHL tendon was not triggered with toe movements.

After the surgery of right side, electromyography examination was performed on the patient, who described pins and needles in the right footpad while neuropraxia was detected in the tibial nerve. However, this condition recovered in the follow-up examination in the ninth month. There was no trigger toe symptom on the follow-up examination after four years for left side and after one-and-a-half years for right side.

DISCUSSION

Hallux saltans is a rare clinical condition about locked FHL tendon. The tendon is most often stuck due to the thickening of the fibrous pulley structure at the level of the sustentaculum tali. However, it has been reported that the FHL tendon is compressed by bone formations such as os trigonum[1] and sesamoids,[9] Henry node (which is a fibrous thickening at the

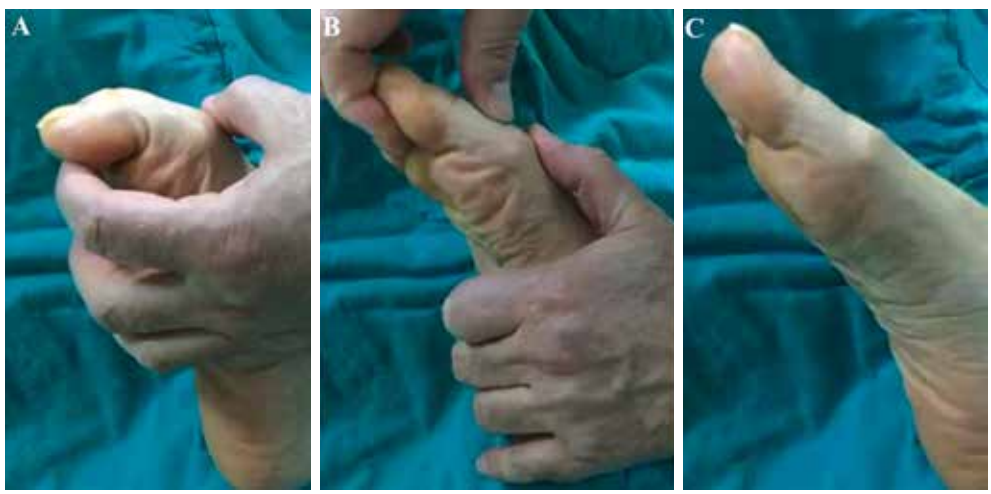

Figure 1. Clinical view of trigger toe (Hallux saltans). **(a)** Toe locked in flexed position. **(b)** Passive correction. **(c)** Released position after manual correction.

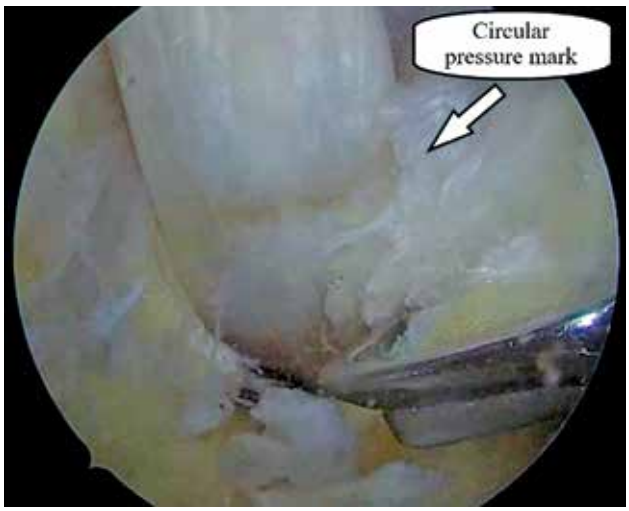

Figure 2. Posterior ankle endoscopic view of circular pressure mark on flexor hallucis longus tendon.

crossing area of FHL and flexor digitorum longus),[10] and accessory anatomic structures.

A review of the literature reveals that open surgery is preferred for releasing FHL tendon.[1,2] However, it has been shown many times in the literature that endoscopic treatment is more beneficial than open surgery in many respects such as operative time, hospitalization, rehabilitation and recovery time. Also, intra-articular and peri-articular structures of the posterior ankle are better evaluated and treated than open surgery with this method.[11]

In conclusion, bilateral HS can be seen without any predisposing factor and treated with endoscopic methods such as the majority of joint pathologies. However, the fact that the tibial nerve is close to the FHL tendon sheath requires careful handling of surgical devices, which is a limiting condition for endoscopic release technique. To the best of our knowledge, this is the first case report of endoscopic treatment for bilateral HS in an ordinary female patient.

Declaration of conflicting interests

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

Funding

The authors received no financial support for the research and/or authorship of this article.

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