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Endoscopic management of posterior ankle impingement syndrome—A case report

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ABSTRACT

Posterior ankle impingement syndrome (PAIS) is a clinical condition characterized by pain in the posterior aspect of ankle on performing activities requiring extreme plantar flexion. The impinging lesion could be bony and/or soft tissue. The operative treatment aims at removing the impinging lesion either by open or endoscopic surgery. The later has been shown to have benefits of early return to sports, better cosmesis, less wound complications.

We report a case of a 19 year old footballer with PAIS secondary to Os Trigonum. The patient complained of pain on performing running and on kicking football. Conservative treatment in form of NSAIDS, rest, physiotherapy modality use could not ensure pain free return to sports.The patient was managed using endoscopic excision of the Os Trigonum followed by aggressive rehabilitation. The patient returned to competitive football at the end of 14 weeks after surgery. There were no wound complications. AAFOS score had changed from 73 to 100 and NPS scale showed pain score reduce from 7/10 to 1/10.

We concluded that endoscopic management of PAIS to remove the impinging lesion is a minimally invasive technique that ensures early return to sports, good cosmesis, less risk of wound complications and good patient satisfaction.

1. Introduction

Posterior ankle impingement syndrome (PAIS) is a clinical disorder characterized by pain in posterior ankle on performing activities involving forced plantar flexion.[1,2]Professions involving regular use of such ankle movements like ballet dancers, footballers, gymnasts, cricketers, horizontal jumpers more commonly experience features of PAIS.[1,3,4,5]

The impingement occurs due to entrapment of a bony (viz os trigonum,Shepherd's fracture, steida's process) or soft tissue (viz hypertrophied/torn posterior inferior tibiofibular ligament, pathological labrum of posterior ankle joint, soft tissue scar, FHL pathologies, anomalous muscles) structure between the posterior malleolus of tibia and posterolateral aspect of talus. The incidence of os trigonum is 10% unilateral and 2% bilateral in general population.[18]50% patients of os trigonum have bilateral involvement.[19] Os trigonum results from failure of fusion of a secondary ossification center at the posterolateral aspect of talus.

The treatment includes conservative management by rest, cessation of activity, modification of technique, NSAIDS, physiotherapy modalities, local corticosteroid injections, rehab exercises and orthotic/footwear modification.[5] Patients not responding to the conservative treatment are managed operatively. Traditionally surgery is by open technique and aims at removal of the pathology causing the impingement either bony or soft tissue.[5] Open surgery is reported to cause longer time to return to sports and certain complications like poor wound healing, wound hematoma collections and inability to address intraarticular associated pathology.[5]

With advances in minimally invasive techniques the pathology can now be successfully addressed using endoscopic techniques.[5]We report a case of a 19 year old footballer with symptoms of PAIS secondary to os trigonum treated using endoscopic excision of the lesion.

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Fig. 1. Plain X rays in neutral and plantarflexion showing impinging os trigonum (*arrow*).

2. Case report

The patient was a 19 year old male footballer who visited the opd with complaints of pain in the back of his right ankle since one year. The pain was insidious in onset and aggravated on activities like running for long distance and kicking football. It was now interfering with his sporting activities. On examination of his right ankle the patient used to walk with inversion at his hind foot (sickling foot). There was diffuse swelling along the posteromedial aspect of the ankle with tenderness on the postero medial and poster lateral aspect. Flexion of great toe against resistance was painful. The AAFOS score was 73. NPS score was 7/10.Plain X-rays (in neutral and plantarflexion) and MRI ankle were performed. The X-rays showed the presence of os trigonum impinging with the posterior aspect of tibia in extreme plantarflexion (Fig. 1). The MRI confirmed the findings of os trigonum along with edematous changes in the flexor hallucis longus tendon sheath (Fig. 2). A trial of conservative treatment in the form of physiotherapy, NSAIDS, activity restriction and ankle strengthening exercises implemented for a period of three months was not successful as the patient could not pursue active life style like playing football. As the patient was not satisfied with the results of conservative treatment methods, the decision for operative treatment was taken. We opted for the endoscopic excision of the os trigonum because of reported advantages of minimal scar and good soft tissue healing, ability to assess and address any associated intraarticular pathology and the advantage of early return to sports. After taking informed consent from the patient the surgery was performed in prone position under general anesthesia with tourniquet control (pressure set at 300 mm Hg) .Surface marking demarcating the achillis tendon, both malleoli and the desired portal sites was done.

A horizontal line was made from lateral to medial across the achillis tendon, starting at the tip of lateral malleolus. Standard poster medial and poster lateral portals were made 5 mm anterior to tendoachillis just above the horizontal line. A 4 mm arthroscope and normal saline through a pressure pump set at 40 mm Hg pressure was used as the irrigating fluid. Diagnostic endoscopy was performed. The crural fascia was removed using a shaver till the subtalar joint space could be visualized. The rent in the fascia was slowly enlarged to get the full view of the os trigonum (Fig. 3) and then of the medially lying tendon of flexor hallucis longus (Fig. 4). The tendon acts as an anatomical landmark and use of shaver or burr medial to it carries a high risk of neurovascular injury to the adjacent posterior tibial neurovascular bundle. The soft tissue around the os trigonum is gradually cleared to obtain a full view of the bony lesion. In the process ligament attachments viz talar attachment of posterior talo fibular ligament and posterior

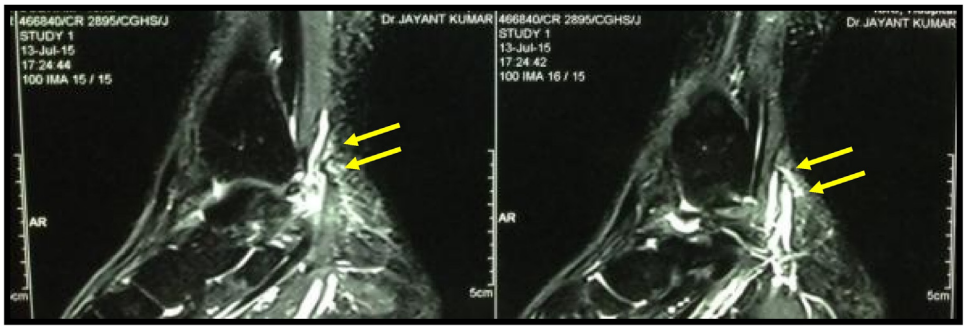

Fig. 2. MRI showing FHL tendinitis (*arrow*).

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