Case Report

Painful OsPeroneum Syndrome Presenting as Lateral Plantar Foot Pain: A Case Report

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Abstract

The painful osperoneum syndrome (POPS) results from a wide spectrum of conditions, including fractures, diastases, and other causes. POPS can result in tenosynovitis or discontinuity of the peroneus longus tendon with a clinical presentation of pain in the lateral aspect of the midfoot. We report a rare case of painful Osperoneum syndrome (POPS) of 52 year-old man who had suffered from chronic pain on lateral foot after varus ankle injury and been treated successfully with surgical excision of the Osperoneum and preserved eroneuslongus tendon at a same time.

Keywords: foot pain,syndrome

Introduction

The painful osperoneum syndrome (POPS), a term coined by Sobel et al.,[1]results from a spectrum of conditions, including osperoneum fracture or a diastasis of multipartite os perineum. Either of the aforementioned causes may result in discontinuity of the peroneus longus tendon or peroneus longus tenosynovitis**.**The osperoneum is a round or oval-shaped accessory ossicle within the substance of the peroneus longus tendon, located near the cuboid bone. It consists of a mixture of bony and fibrocartilage tissues.Peroneus longus is a strong foot evertor its tendon passes downwards around the lateral malleolus on the lateral surface of the calcaneum, and the groove of the cuboid, to enter the sole of the foot.The osperoneum can occur in this tendon at the calcaneocuboid articulation.

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The presence of an osperoneum has been reported between 4.7% and 30% of normal feet, and some cases (40%) were unilateral[2,3].We report a rare case of chronic POPS in a 52 year-old male who experienced lateral foot pain for over three month we present the plain film and magnetic resonance imaging (MRI) findings. The purpose of this case report was to show osperoneum can be treated successfully with operative management and retaining of the peroneus longus tendon. Reporting of this case and all investigations were conducted in conformity with the institution's ethical principles of research. Informed consent for participation in the study was obtained from the patient.

Case report

A 52-year-old male patient presented with progressive pain in the lateral aspect of the right midfoot. he denied any history of recent trauma, sprain, or high-impact sport activity. The plain film showed the presence of an accessory ossicle in the lateral aspect of the midfoot, located in the path of the peroneal tendons with cortical discontinuity, fragmentation, irregular margins, and heterogeneous density.

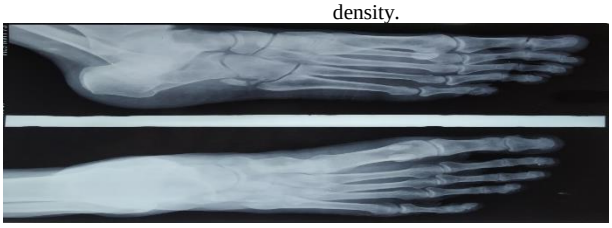

Fig 1: 52-year-old male plain film of the feet in an oblique view. (a) left foot: complaint side, showing an irregular and fragmented osperoneum with heterogeneous density

Following x-ray film, an MRI was performed for soft tissue evaluation. The accessory ossicle was identified within the peroneus longus tendon in the lateral aspect of the midfoot. It showed two well corticated lesion in the peroneus longus tendon at the level of calcaneum cuboid joint. Also, there was edema and intense enhancement in the adjacent soft tissues (Figure 2). The peroneus longus tendon was thickened and heterogeneous, consistent with tendinopathy.

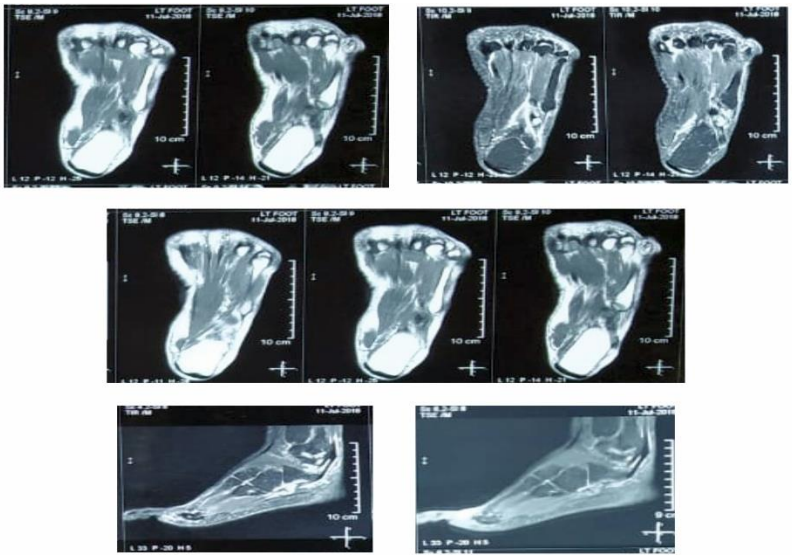

Fig 2: 52-year-old male left midfoot MRI. show the osperoneum within the peroneal tendon. It showed two well corticated lesion in the peroneus longus tendon at the level of calcaneum cuboid joint. Also, there was edema and intense enhancement in the adjacent soft tissues The peroneus longus tendon was thickened and heterogeneous, consistent with tendinopathy

We have also performed computed tomography (CT) images of his left foot showed well corticated bony fragment 13x7 mm and 9x4 mm adjacent to the inferolateral aspect of calcaneocuboid joint

Fig 3: CT: images views, show the osperoneum well corticated bony fragment 13x7 mm and 9x4 mm adjacent to the inferolateral aspect of calcaneocuboid joint

A lateral incision was made parallel to the peroneus longus tendon. During operation, we observed There was no apparent fracture or diastases of OP during inspection. The protuberance was resected. After The resection of OP peroneus longus tendon to glide smoothly along the peroneal tendon track.. The wound was irrigated and closed, and a sterile dressing was applied. Full weight-bearing was allowed postoperatively, as tolerated. The postoperative course was uneventful, and the patient returned to normal activities without any kind of functional disability. We compared the outcomes of the surgery, using the Japanese Society for Surgery of the Foot (JSSF) scale, an objective standard rating system and the Self-Administered Foot Evaluation Questionnaire (SAFE-Q)[4-6]. The SAFE-Q is an ankle-specific subjective evaluation method consisting of six subcategories (i.e., pain and pain-related, physical functioning and daily living, social functioning, shoe–related, general health and well-being, and sports activity). The preoperative JSSF score of 70 points (maximum score of 100 points) significantly improved to 100 points after one year. Compared to the preoperative condition, all subscale scores in the SAFE-Q improved after 1 year: pain and pain-related, 40 to 75 points; physical functioning and daily living, 38 to 82 points; social functioning, 62 to 88 points; shoe-related, 55 to 74 points; and general health and well–being, 48 to 78 points. And also Plain radiographs taken at one year after the surgery showed no signs of recurrence.

Fig 4: Intraoperative photograph shows an osperoneum in the peroneus longus tendon, and excision of multipartite osperoneum

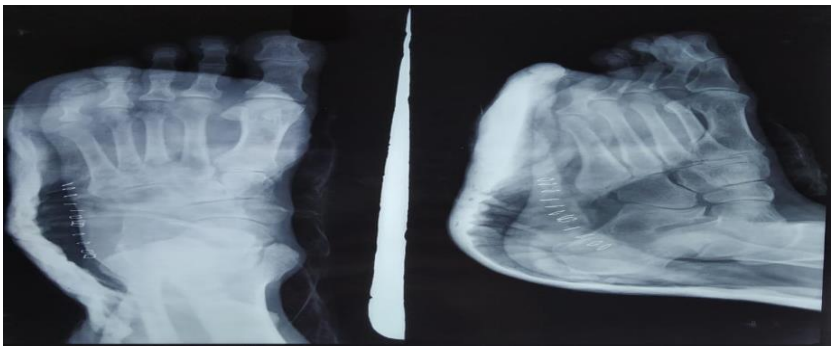

Fig 5: Immediate postoperative x-ray- anteroposterior and oblique view

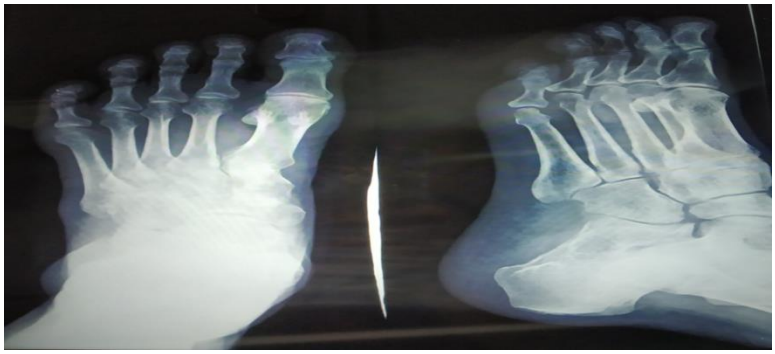

Fig 6:The patient's Left foot x-ray-anteroposterior/oblique view one year after the procedure

Discussion

There are different sesamoids and accessory ossicles in the skeleton. few of them are known to be associated with painful syndromes, such as ostrigonum, osnavicular, and fabela. These syndromes may be caused by different etiologies such as trauma, infection, impact, and degenerative changes[7].The osperoneum is an accessory ossicle which is round or oval, within the substance of the peroneal tendon , and can be classified accordingly to Nwawka et al. and Blitz and Nemes as a sesamoid[8,9]. Its histological structure is composed of different degrees of ossification and fibrous tissue.The peroneus longus tendon is located proximal and posteriorly to the lateral malleolus on the lateral surface of the calcaneus, cuboid, and distally inserting at the base of the first metatarsal and medial cuneiform.

There are several causes for pain in the lateral aspect of the foot, including dislocation or subluxation of the peroneal tendon, injury, to the talofibular ligament or calcaneofibular ligament, or fractures in the fifth metatarsal, anterior process of the calcaneus, or cuboid.

POPS has two main types: acute and chronic. The acute form occurs as a result of trauma, commonly with ankle sprain or supination movement, resulting in fracture or diastasis of the osperoneum, which may or may not be associated with peroneus longus tendon rupture. Chronic presentation is closely linked to a healing process of a fracture with subsequent calcification, remodeling, or chronic diastasis of the osperoneum with a variable frequency of tenosynovitis of the peroneus longus tendon.The osperoneum is usually detected on routine radiographs and the internal oblique projection of the foot shows the osperoneum to best advantage.Other diagnostic imaging techniques including computed tomography (CT), ultrasonography (US) and magnetic resonance (MR) imaging are also useful in the evaluation of normal osperoneum as well as bipartite and fractured osperoneumOsperoneum is present in 26% of the population, may be unilateral (40%) or bilateral, may be bipartite (30%), fracture may be associated with rupture of the peroneus longus tendon[10].We concluded that our patient classified as suffering from a chronic presentation of POPS, with chronic fatigue without fracture of osperoneum and associated with peroneal tenosynovitis.The radiographic differentiation between a fractured or split osperoneum may be difficult. In an acute event, fracture margins seem relatively nonsclerotic and bone fragments generally fit together, as “pieces of a puzzle.” In the bipartite sesamoid, margins become rounded and sclerotic. It is possible that over time due to remodeling, the edges of the fracture resemble the appearance of a

split os perineum[11].Brigido et al. suggested that a diastasis between fragments of osperoneum, greater than five millimeters, must indicate the diagnosis of fracture[12].Treatment includes casting, excision of the ossicle or tendon segment, direct tendon repair, direct bone-to-bone repair, and attachment using a graft. In the case presented, because of severe tenosynovitis, fatigue fracture, and repetitive aggravation of pain, regardless of conservative treatment, excision of osperoneum were performed.In conclusion, we report a rare case of painful osperoneumsyndrome andperoneal tenosynovitis that presented with lateral plantar foot pain, along with a review of related literature.

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