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Case Report

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Atypical Os trigonum syndrome: a case of FHL entrapment

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ABSTRACT

Os trigonum is an accessory bony growth from posterior aspect of talus, which presents as swelling and pain behind the ankle causing hinderance to daily activities secondary to impingement. The overuse of ankle with repetitive stress on plantar flexion is usually seen in ballet dancers. Unusual cases can be seen irrespective of the profession and can be symptomatic. Sometimes symptomatic patients may improve with activity modification and rest. Syndromic involvement is featured by entrapment of FHL tendon. In that case, excision of the mass with entrapment release can improve the functional outcome.

Keywords: Ankle impingement, Talus, FHL entrapment, Radiography, Excision

INTRODUCTION

Os trigonum is an extra ossicle that arises from the posterolateral aspect of talus. Rosenmuller first described the term "os trigonum" in 1804.[1] The posterior aspect of talus has two process- posteromedial and posterolateral, the latter being larger with a central groove in between. During the development if the secondary ossification center fails to fuse, it remains as an accessory bone which is sometimes connected to the native talus by a fibrotic band. The tendon of flexor hallucis longus passes through the central grove between both the tubercles to enter the tarsal tunnel. The prevalence ranges from 1.7% to 7%.[2] If the secondary ossification center fuses, activities causing repetitive plantar flexion stress can result in a fracture called 'Sheperd fracture'. Hence, it can also be referred to as posterior ankle impingement syndrome. This is usually seen in ballet dancers, swimmers and soccer players. Nonathletes should be suspected for os trigonum Syndrome when no response is observed with the standard non operative treatment, especially in females.[3] It usually remains asymptomatic, chronic irritation to flexor hallucis longus tendon during extremes of plantarflexion and dorsiflexion creates symptoms which is consistent with tarsal tunnel syndrome. The disease is seen around the age of 18 to 35 years. Meanwhile, symptomatic os trigonum in late adulthood is atypical, has been discussed.[4]

CASE REPORT

A 63-year-old female, factory worker by occupation presents to the OPD with left ankle swelling and pain for 2 years.

Figure 1: Pre-operative clinical pictures of left ankle and foot showing restricted plantarflexion and dorsiflexion.

Figure 2: Pre-operative X-ray of left ankle- AP and lateral views showing the os trigonum.

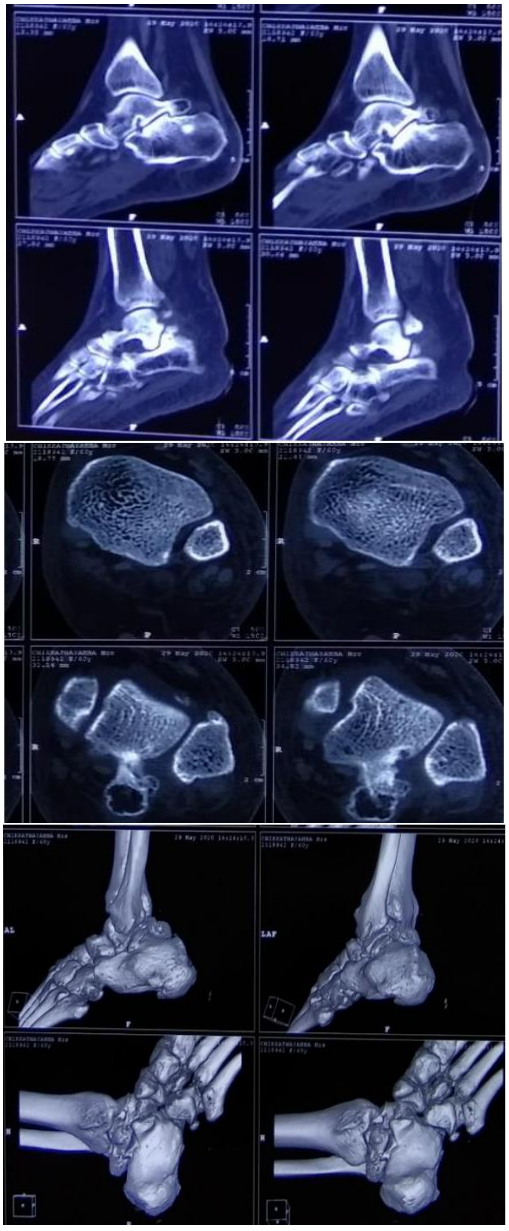

Figure 3: Pre-operative CT images showing the position and size of os trigonum.

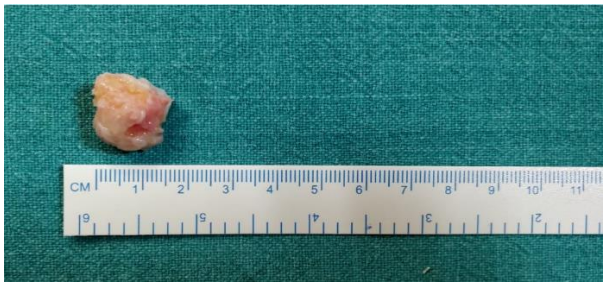

Figure 4: Dimension of the excised mass.

The pain was over the left ankle, gradual in onset, dull aching type of pain, progressive in nature and the pain increased on walking, squatting and as the day progressed. No history of trauma/fever. She also had difficulty while climbing down slope and squatting. No symptoms in the contralateral ankle. Examination of the left ankle and foot showed a swelling over the posterolateral aspect of left ankle. Swelling was diffuse and soft in consistency. No scars or sinus were seen. On palpation, no local rise of temperature was felt. Tenderness was present over the posteromedial and posterolateral aspect of the left ankle. Plantarflexion and dorsiflexion of the left ankle was restricted and painful terminally. Pain aggravated on flexion of great toe. Gait examination was pain during the push off phase.

Figure 5: Post operative X-ray of left ankle- AP and lateral views showing adequate excision of the mass on posterior aspect of talus.

Figure 6: Post-operative clinical pictures of left ankle showing improvement in the range of movement.

Tendoachilles was intact and normal. Patient was given a trial of rest and symptomatic management. No response was observed. Physiotherapy, stretching exercises and hot fomentation were advised, but symptoms persisted. Basic

blood investigations like complete blood count and acute phase reactant tests showed no abnormalities. Patient did not have any systemic disorders or any comorbidities. Patient was suspected for os trigonum and was advised radiological investigations such as X-ray and 3D CT of left ankle. X-ray of left ankle showed a large rounded well defined cortical margined mass in continuity with the posterior aspect of talus and 3D CT of the ankle showed a cystic bony mass extending from the posterolateral aspect of talus. Based on these findings, the patient was diagnosed for symptomatic os trigonum. Patient was planned for open excison of the mass and exploration of flexor hallucis longus tendon. Excision of the mass with FHL release was done with an approach posteromedial to tendoachilles. A bony mass of 1×1×1.5 cm was excised and sent for histopathological examination which showed features of chronic non-specific inflammation. Post operative movement of left ankle improved, follow up was done on a regular basis at 2 weeks, 1 month, 6 months and showed satisfactory results. Now the patient is back to her work and is pain-free.

DISCUSSION

Os trigonum, also known as posterior ankle impingement syndrome is a triangular shaped bone as its name suggests.[5] It is a fibrotic or a bony extension of the posterolateral aspect of talus, called the stedia process.[1] It is usually oval to rounded in shape, remains asymptomatic and detected incidentally on radiograph in 7% of the population following a traumatic event.[4] Occupations such as ballet dancers, soccer players which promote repetitive stressful plantarflexion of ankle are more prone for os trigonum.[4] In our case, we call it atypical as the patient is a factory worker, who is not prone for the above-mentioned aetiology.

Os trigonum is diagnosed by both clinical as well as radiologically. Our patient initially had a swelling of left ankle which was managed by non-surgical means. Since the non surgical methods did not show any improvement. Patient was asked for radiological investigations which showed a incidental os trigonum. Hence, the disease is more of a radiological diagnosis.

The tendon of FHL run through the central groove on posterior aspect of talus. This can cause tenosynovitis of the tendon which can present as a restriction of movement of left great toe like in our case.[1]

Many patients respond with non-operative methods but operative methods are considered when non operative method is ineffective.[6] The operative methods can be open or arthroscopic approach. Arthroscopic methods show better outcomes than open methods.[7] In our case, we went with open post-eromedial linear incision in view of economical constraints. No complication was observed after the surgery and also during the follow up period.

CONCLUSION

As a conclusion, a diagnosis of os trigonum syndrome should be considered in such patients who are not responding to non-operative management. A early diagnosis can help the patient to prevent fractures of the accessory ossicle and to improve the functional outcome of the patient.

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