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Symptomatic os trigonum in a football player- an anatomical disadvantage

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ABSTRACT
Os trigonum is a secondary ossification center at postero-lateral process of talus. The Steida process is an anatomical defect comprising of fused os trigonum. The entity has been linked with symptomatic Flexor hallucis longus (FHL) tenosynovitis. Activities or profession requiring hyper-plantar flexion of ankle trigger tenosynovitis and other related disorder. Symptomatic os trigum is an uncommon etiology of recalcitrant foot pain and diminished performance in sports involving intricate foot movements. The associated tendon disorders may further aggravate the problem. The cases refractory to conservative management should undergo detailed radiological evaluation to rule out any underlying defects. Appropriate management is warranted in the settings of anatomical variations like os trigonum or Steida process.
Keywords: Os trigonum, Flexor Hallucis Longus, tenosynovitis, Physical Therapy.

Introduction

Football is a popular sport that requires supple joints and strong bones apart from appropriate skills. A good range of motion and painless function of the foot is strong determinant of long term career. The sport of football has inherent risk of severe musculoskeletal damages both in acute and chronic settings. The wear and tear process requires protracted course of treatment including supervised rehabilitation programme. Certain anatomical anomalies may predispose a player to bear the brunt of repetitive stress injuries more often than normal counterparts. Our case depicts one such anatomical deviation that was a cause of recalcitrant foot pain in a budding player[1-3].

Case Report

A 21 year old budding football player presented to us with complaints of episodes of pain after the practice session for last six months that were disabling and affecting his performance. Initially mild and occasional, the symptoms have been increased in frequency and severity for last two weeks. The case was managed considering as repetitive stress and advised periods of rest apart from proper warm up before the exertion. The relief was transient and recently the patient complained of pain even on movement of toes.

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There was no diurnal variation, radiation or referral pattern associated. The pain relieved transiently on rest and taping. There was no clinical history suggesting any 'red flags'. The refractory nature of pain warranted radiological evaluation of the ankle and foot. The plain radiograph of the ankle showed bony prominence over the postero-lateral aspect of talus suggestive of os trigonum.(Figure 1 and 2)
The defect seemed not fused with the talus and a provisional diagnosis of symptomatic os trigonum was made. The patient declined the request for further imaging like Magnetic resonance imaging for some reasons. The case was managed as per the provisional diagnosis.

Result

The supervised FHL stretching exercises and ultrasonic therapy was initiated with the help of department of physical medicine and rehabilitation. The clinical improvement was evident with improvement in parameters like 10 point visual analogue scale (VAS) and 100 point numerical rating scale(NRS). The patient was given the course of therapy for three weeks. The patient was also advised postural modifications and exercises for strengthening of calf and tendo-achilles. The patient returned to sports after three months and voluntarily chose backward position for decreased impact on foot. The patient was advised periodic review with options of surgical management as per the clinical profile and requirement.

Conclusion

The understanding of anatomical variants as a cause of foot pain can be helpful in anticipating and managing the condition appropriately. The judicious use of radiographs often shows underlying anatomical disorders and dedicated rehabilitation process is key to successful management.

Fig1: Antero-posterior radiograph of the ankle

Fig 2: Lateral Radiograph showing Os trigonum as prominence at posterior part of talus

Discussion

The painful tenosynovitis may be managed well with stretching exercises and appropriate physical therapy. [3] The success rate cited by the author is 68% with conservative management. Certain refractory cases may require surgical management that have been found effective but also entail complications like pain and stiffness.[4] The surgical management includes removal of os trigonum in entirety with fluoroscopic confirmation. The careful dissection to avoid injury to tibial nerve and its branches is required all through the procedure. The hind foot endoscopic procedures have also been tried as a minimal invasive modality. The procedure ensures early recovery but requires expertise. [5]

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