ISSN: 3033-358X

Case Report

Journal of Orthopedics and Physiotherapy

Chronic Posterior Ankle Pain in a Recreational Runner: A Rare Case of Os Trigonum Syndrome Diagnosed in an Outpatient Setting

Ian Pranandi

Department of Biochemistry, School of Medicine and Health Sciences, Atma Jaya Catholic University of Indonesia, Jakarta 14440, Indonesia

Corresponding author
Ian Pranandi, Department of Biochemistry, School of Medicine and Health Sciences, Atma Jaya Catholic University of Indonesia, Jakarta 14440, Indonesia. E-mail: ian.pranandi@atmajaya.ac.id

Received: August 15, 2025; **Accepted:** August 22, 2025; **Published:** September 01, 2025

ABSTRACT

Background: Chronic posterior ankle pain is a relatively common complaint among athletes and runners, but accessory bone–related etiologies such as Os Trigonum Syndrome are often underdiagnosed, particularly in non-professional athletes. The os trigonum is an accessory ossicle located posterior to the talus, which can cause posterior ankle impingement when symptomatic. This report presents a case of Os Trigonum Syndrome in a recreational runner, diagnosed and managed entirely in an outpatient setting.

Case Presentation: A 32-year-old female recreational runner presented to the orthopedic outpatient clinic with a 6-month history of progressive posterior ankle pain, aggravated by running and activities involving forced plantarflexion. There was no significant trauma history. Physical examination revealed tenderness over the posterior ankle, pain on passive plantarflexion, and preserved ankle stability. Initial plain radiographs demonstrated the presence of an os trigonum, and magnetic resonance imaging confirmed posterior ankle impingement without associated tendon injury. Conservative management, including activity modification, non-steroidal anti-inflammatory drugs, and physiotherapy, resulted in significant symptom improvement within 8 weeks. The patient resumed running without recurrence of symptoms at 6-month follow-up.

Discussion: Os Trigonum Syndrome is a rare but important differential diagnosis in patients with chronic posterior ankle pain, even among non-elite athletes. The repetitive plantarflexion motion associated with running can exacerbate impingement in individuals with an os trigonum. This case highlights the importance of maintaining a high index of suspicion in outpatient practice, utilizing appropriate imaging to confirm diagnosis, and initiating timely conservative treatment to prevent chronic disability.

Conclusion: In runners presenting with persistent posterior ankle pain unresponsive to initial therapy, Os Trigonum Syndrome should be considered. Early diagnosis in the outpatient setting can facilitate effective conservative management, enabling patients to return to physical activity without long-term sequelae.

Keywords: Os Trigonum Syndrome, Posterior Ankle Pain, Recreational Runner, Accessory Ossicle, Outpatient Orthopedics

Introduction

Chronic ankle pain is a frequent presentation in orthopedic and sports medicine clinics, often resulting from overuse injuries, ligamentous instability, or tendon pathology. In athletes and active individuals, repetitive mechanical stress on the ankle joint, particularly during activities requiring forced plantarflexion, can lead to posterior ankle impingement syndromes [1]. While conditions such as Achilles tendinopathy and flexor hallucis longus (FHL) tendinopathy are commonly recognized, accessory bone–related causes are often overlooked [2].

The os trigonum is an accessory ossicle located posterior to the talus, arising from a secondary ossification center that fails to fuse with the talar body during skeletal development. It is present in approximately 7–14% of the general population and

Citation: Ian Pranandi. Chronic Posterior Ankle Pain in a Recreational Runner: A Rare Case of Os Trigonum Syndrome Diagnosed in an Outpatient Setting. J Ortho Physio. 2025. 3(3): 1-3. DOI: doi.org/10.61440/JOP.2025.v3.38

is usually asymptomatic [3]. However, in certain individuals, especially those engaged in activities involving repetitive plantarflexion such as ballet, soccer, or running, the os trigonum can become symptomatic, producing Os Trigonum Syndrome. This condition manifests as posterior ankle pain, reduced range of motion, and functional limitation, which can significantly impair performance and quality of life [4].

Although Os Trigonum Syndrome is well-documented in professional dancers and soccer players, reports in recreational runners are relatively rare. Because symptoms can mimic more common pathologies, diagnosis may be delayed, particularly in outpatient settings where advanced imaging is not immediately pursued. Early recognition is crucial, as timely conservative management can resolve symptoms and prevent chronic disability, whereas delayed diagnosis may necessitate surgical intervention [4].

We report the case of a recreational runner who developed Os Trigonum Syndrome, diagnosed entirely in an outpatient orthopedic clinic. This case underscores the importance of considering accessory bone–related causes in the differential diagnosis of persistent posterior ankle pain and highlights the role of targeted imaging in confirming the diagnosis.

Case Presentation

A 32-year-old female recreational runner presented to the orthopedic outpatient clinic with a 6-month history of progressive pain in the posterior aspect of her right ankle. The pain developed insidiously without a history of acute trauma. She reported that the discomfort was aggravated during running, particularly when sprinting or performing uphill training, and also occurred during activities requiring maximal plantarflexion such as stretching and certain yoga poses. The pain subsided partially with rest but recurred with resumption of activity.

She denied any history of ankle instability, prior ankle surgery, or systemic musculoskeletal disorders. Her medical history was unremarkable, and she was not on any regular medications.

On physical examination, her gait was normal at rest, but she demonstrated mild discomfort during toe-off phase of walking. Inspection revealed no visible swelling or deformity. Palpation elicited localized tenderness over the posterior aspect of the ankle, just anterior to the Achilles tendon insertion. Passive forced plantarflexion reproduced her pain, while dorsiflexion was painless. Ankle stability tests, including anterior drawer and talar tilt, were negative. There were no neurovascular deficits.

Plain lateral radiographs of the ankle demonstrated a small, well-corticated ossicle posterior to the talus consistent with an os trigonum. Magnetic resonance imaging (MRI) was subsequently performed, confirming the presence of an os trigonum measuring approximately 8 mm, with associated bone marrow edema and surrounding soft tissue inflammation suggestive of posterior ankle impingement. The flexor hallucis longus tendon appeared intact, with no evidence of partial tear or tendinopathy.

The patient was diagnosed with Os Trigonum Syndrome. Conservative management was initiated, consisting of activity modification to avoid forced plantarflexion, a short course of oral non-steroidal anti-inflammatory drugs (NSAIDs), and physiotherapy focusing on stretching and strengthening of the ankle musculature. At 4 weeks, she reported significant reduction in pain, and by 8 weeks, she had resumed light jogging without symptoms. At 6-month follow-up, she was able to return to her regular running schedule without recurrence of pain or functional limitation.

Discussion

Os Trigonum Syndrome is a form of posterior ankle impingement caused by compression of the os trigonum and surrounding soft tissues between the posterior tibia and calcaneus during plantarflexion [4] While the presence of an os trigonum is relatively common, reported in 7–14% of the population, it is often asymptomatic and detected incidentally on imaging. Symptom onset typically occurs in individuals whose activities require repetitive or extreme plantarflexion, such as ballet dancers, soccer players, and gymnasts. Reports in recreational runners are uncommon, making this case noteworthy [3,4].

In runners, the repetitive toe-off phase during the gait cycle can produce mechanical stress on the posterior ankle structures, particularly in uphill running or sprinting, which involve greater plantarflexion. Over time, this can lead to inflammation, edema, and entrapment of surrounding tissues, including the posterior joint capsule and flexor hallucis longus tendon sheath [5] In our patient, these repetitive forces likely converted an otherwise asymptomatic os trigonum into a symptomatic source of chronic ankle pain.

The differential diagnosis of chronic posterior ankle pain includes Achilles tendinopathy, retrocalcaneal bursitis, flexor hallucis longus (FHL) tendinopathy, and posterior talar process fracture. Careful clinical assessment, with attention to pain reproduction on forced plantarflexion, helps guide suspicion toward posterior ankle impingement [2,5]. Imaging is essential to confirm the diagnosis and exclude other causes. While plain radiographs may demonstrate the ossicle, MRI provides superior detail on associated soft tissue inflammation and bone marrow edema, which were evident in this case.

Management of Os Trigonum Syndrome typically begins with conservative measures, including activity modification, non-steroidal anti-inflammatory drugs, and physiotherapy to improve flexibility and reduce posterior impingement forces. Ultrasound-guided corticosteroid injections can be considered in refractory cases. Surgical excision, either via open or endoscopic approach, is generally reserved for patients who fail to respond to conservative therapy after 3–6 months [3,4]. In this case, early diagnosis and targeted conservative management allowed complete symptom resolution, avoiding the need for operative intervention.

This case underscores several important clinical points for outpatient practice. First, Os Trigonum Syndrome should be considered in any athlete or active individual with chronic posterior ankle pain unresponsive to standard initial treatment, even in the absence of high-level athletic activity. Second, timely use of appropriate imaging, particularly MRI, can confirm the

diagnosis and prevent unnecessary delays in management. Lastly, patient education and guided rehabilitation play a pivotal role in achieving full recovery and return to sport.

Conclusion

Os Trigonum Syndrome is an uncommon but important cause of chronic posterior ankle pain in recreational runners. Although often overlooked in outpatient settings, it should be considered in the differential diagnosis when symptoms persist despite initial conservative measures and are provoked by plantarflexion activities. This case highlights the value of thorough clinical assessment, early targeted imaging, and prompt initiation of conservative therapy in achieving full recovery without surgical intervention. Recognizing accessory bone–related pathologies early can prevent chronic impairment and allow patients to safely return to their preferred activities.

References

1. Alghadir AH, Iqbal ZA, Iqbal A, Ahmed H, Ramteke SU. Effect of chronic ankle sprain on pain, range of motion, proprioception, and balance among athletes. Int J Environ Res Public Health. 2020. 17: 5318.
2. Wirth SH, Andronic O, Aregger F, Jungwirth-Weinberger A, Jentzsch T, et al. Flexor hallucis longus hypertrophy secondary to Achilles tendon tendinopathy: an MRI-based case-control study. Eur J Orthop Surg Traumatol. 2021. 31: 1387-1393.
3. Fu X, Li H, Zhong J, Li W, Wang X. Implications of classification of os trigonum: a study based on computed tomography three-dimensional imaging. Med Sci Monit. 2019. 25: 1423-1428.
4. McAlister JE, Urooj U. Os Trigonum Syndrome. Clin Podiatr Med Surg. 2021. 38: 279-290.
5. Yasui Y, Hannon CP, Hurley E, Kennedy JG. Posterior ankle impingement syndrome: a systematic four-stage approach. World J Orthop. 2016. 7: 657-663.