

# ENLARGEMENT OF THE LATERAL PROCESS OF THE TALUS AS AN ETIOLOGY OF SINUS TARSI SYNDROME: A Case Report

*Bradley D. Castellano, DPM*

## INTRODUCTION

The author presents a surgical case of bilateral lateral process of the talus enlargement in a patient presenting with anterior and lateral ankle pain. In this patient, anterior bossing of the ankle was also present. Both conditions were treated with surgical remodeling of the bony prominences.

Sinus tarsi syndrome is a relatively common condition although its actual etiology is debatable. Traumatic injury is frequently associated with its onset and is typically a sprain of the lateral ankle. When history of trauma is not present, other factors such as chronic cervical ligament strain or excessive pronation are thought to be the cause. The lateral process of the talus acts as bony abutment for subtalar motion and can be fractured in some instances by forceful motion of that joint. Numerous articles discussing this type of injury exist (1). Nonunion of the fracture usually results, and excision of the fragment is described as the typical method of surgical treatment when conservative methods fail to resolve the pain. Other surgical treatments describe denervation of the sinus tarsi often in combination with synovectomy of the sinus (2).

## CASE REPORT

A 51-year-old woman presented with intermittent, occasionally severe bilateral ankle pain. She reported an insidious onset approximately 10 years prior to her visit to the office. She described some morning stiffness lasting less than 30 minutes and gradual increase in pain with prolonged standing or walking. She denied any radiation of the pain and reported temporary relief with other-the-counter nonsteroidal anti-inflammatory medications. A family history of arthritis (type unknown) was described, but otherwise her history was unremarkable.

Clinically the patient's neurovascular status was well within normal limits. Moderate localized nonpitting edema of the anterior lateral ankle was visible. The points of maximal intensity of pain with palpation were over the anterior medial ankle and at the lateral aspect of the sinus tarsi. Restricted dorsiflexion of the ankle with the knee bent

and flexed was evident. Subtalar and midtarsal range of motion was also limited, primarily in the pronatory direction.

Plain radiographs revealed moderate to severe bossing of the anterior ankle mortise with loose fragments evident bilaterally. No severe positional deformities were seen; however, irregularity of the lateral process of the talus in the form of enlargement was noted to be present bilaterally. Conservative and surgical options were discussed with the patient and surgical intervention was chosen. Ultimately, arthrotomy of the ankle joint with removal of the bony prominences and ostectomy of the lateral process of the talus was performed bilaterally on two separate occasions. The postoperative course was unremarkable each time and significant improvement in both symptoms and range of motion was achieved.

## DISCUSSION

Sinus tarsi syndrome is described as pain and sometimes swelling of the lateral aspect of the tarsal canal. It has been associated with lateral ankle instability, sprain of the anterior talofibular ligament, anterior fibular nerve injury, excessive pronation, and subtalar joint arthropathy. Differential diagnosis should include impingement of the distal fascicle of the tibiofibular syndesmosis.

An unusual case of bilateral sinus tarsi syndrome associated with enlargement of the lateral process of the talus was presented. In this case, no prior history of trauma existed. There were no prior radiographs to determine if this was a congenital malformation or a reactive process. Preoperative lateral weightbearing radiographs best showed the extent of the enlargement of the lateral processes (Figure 1). Impingement of the lateral process against the floor of the sinus is not an infrequent cause of sinus tarsi syndrome in the excessively pronated foot. This case is different in that the radiographs show an inconsistency in the typical parameters of a pronated foot, i.e., normal calcaneal inclination, normal first ray declination angle, but an increased Kite's angle with talonavicular joint subluxation (Figure 2). Therefore, in this case it would appear the subtalar motion was restricted by the lateral process. The

subsequent improved range of motion at the subtalar joint that was achieved following the remodeling procedure would support this conclusion (Figure 3). This case should help raise the index of suspicion for enlargement of the lateral process of the talus as a possible etiology for sinus tarsi syndrome.



Figure 1A. Preoperative lateral radiograph of the left foot. Anterior bossing of the ankle joint is indicated by the white arrows. The enlarged lateral process of the talus is indicated by the red arrows. Note that the calcaneal inclination is low normal and the first ray declination is also within normal limits.



Figure 1B. Preoperative radiograph of the right foot.



Figure 2. Dorsal-plantar weightbearing radiograph of the feet show transverse plane pronation with an increase in Kite's angle and talonavicular joint subluxation bilateral. Moderate hallux valgus is also noted.

## REFERENCES

1. Hawkins L. Fracture of the lateral process of the talus A review of 13 cases J Bone Joint Surg Am 1965;47:1170-5.
2. Akiyami K, Takakura Y, Tomita Y, et al. Neurohistology of the sinus tarsi and sinus tarsi syndrome. J Orthop Sci 1999;4:299-303.



Figure 3. Postoperative radiograph of the right foot following resection of the anterior ankle impingement and reduction of the lateral process of the talus.