

A Case Report of the Osseoscopic Assisted Resection of a Calcaneal Intraosseous Lipoma

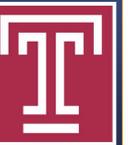
Todd A. Hasenstein, DPM^a, Timothy D. Greene, DPM^a, Youssef M. Kabbani, DPM^b, and Andrew J. Meyr, DPM, FACFAS^c

^aResident, Temple University Hospital Podiatric Surgical Residency Program, Philadelphia, Pennsylvania

^bPrivate Practice, The Foot and Ankle Center, Philadelphia, Pennsylvania

^cClinical Associate Professor and Residency Program Director, Department of Podiatric Surgery, Temple University School of Podiatric Medicine and Temple University Hospital, Philadelphia, Pennsylvania (AJMeyr@gmail.com)*

*Please don't hesitate to contact AJM with any questions. He's also happy to provide you with a .pdf of this poster if you email him.



Statement of Purpose and Literature Review

Intraosseous lipomas (IOLs) are a relatively rare primary bone tumor, however, the two most common locations of IOLs are in the lower extremity. This is specifically the proximal femur and neutral triangle of the calcaneus [1-6]. Although these might generally remain asymptomatic, a certain percentage will cause patient symptoms which are commonly initially misdiagnosed as plantar fascial heel pain. The diagnosis is primarily made based on plain film radiographs with advanced imaging such as magnetic resonance imaging utilized for confirmation.

When symptomatic, the traditional surgical approach for IOLs involves removing a bone window from the lateral wall of the calcaneus in order to achieve direct visualization and curettage of the lesion. The subsequent defect would then normally be filled with bone graft. **The objective of this brief report is to discuss our experience with and increase awareness of a minimally invasive approach to the surgical resection of calcaneal intraosseous lipomas with the use of arthroscopic instrumentation.**

Case Study

A 21 year old female initially presented with a chief complaint of right heel pain. Her physical exam findings included pain on direct palpation of the plantar-central calcaneus and the lateral calcaneal border. She reported pain that worsened throughout the day and was alleviated by rest and by placing the foot in a dependent position. She denied a history of trauma to the site. Mild edema of the heel was appreciated. Her skin was intact without erythema or signs of infection. Her sensation was intact with no loss of protective sensation, vibratory sensation, deep tendon reflexes, or proprioception.

She was initially diagnosed with plantar fasciitis and was treated conservatively with a regimen consisting of icing and stretching. After failure of improvement in clinical symptoms, plain film radiographs were obtained and demonstrated a large centralized lobular bone cyst within the neutral triangle of the calcaneus (Fig 1). The diagnosis of IOL was confirmed with magnetic resonance imaging (Fig 2).

The patient was subsequently brought to the operating room with supine positioning and an ipsilateral hip bump. Portal sites on the lateral calcaneus were confirmed with a Freer elevator and fluoroscopy. A stab incision was created and blunt dissection was performed to the lateral calcaneal wall. Next a 3.0mm drill bit was utilized to create a portal through the lateral calcaneal cortex. A 2.7 mm, 30-degree scope was inserted and direct visualization of the lipoma was achieved (Fig 3; pre-debridement image). A second portal (anterior-lateral) was subsequently created and the arthroscopic shaver was introduced (3.0mm oscillating). Debridement via the shaver was performed until no remaining signs of the lesion were identified (Fig 4: post-debridement image). The large bone void was then filled with injectable synthetic bone graft combining tricalcium phosphate and recombinant human platelet derived growth factor (Fig 5). The incisions were then closed primarily and a post-operative dressings were applied. The patient was then placed in a below-knee cast and remained NWB for 6 weeks (Fig 6). A functional recovery without symptoms was achieved.

Discussion

The objective of this brief report was to discuss our experience with and increase awareness of a minimally invasive approach to the surgical resection of calcaneal intraosseous lipomas with the use of arthroscopic instrumentation. This case demonstrated successful surgical management and functional recovery with osseoscopic-assisted resection utilizing two lateral calcaneal portals, a 2.7mm scope, and 3.0mm oscillating shaver.

Figures 1 and 2 – Preoperative X-ray and MRI



Figures 3-5 – Intra-operative Imaging

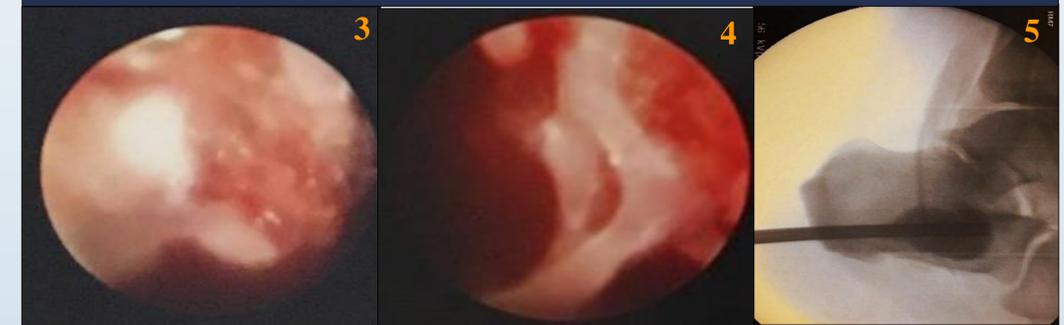


Figure 6 – Postoperative X-ray



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