

# Hind-foot Endoscopic Treatment for Haglund's Deformity - A Case Report

Sreenath Shankar<sup>1</sup>,  
K R Sandeep<sup>2</sup>,  
S Hegde Shruti

<sup>1</sup>Assistant Professor, Department of Orthopedics, Pariyaram Medical College, Kerala, India,

<sup>2</sup>Senior Resident, Department of Orthopedics Pariyaram Medical College, Kerala, India,

<sup>3</sup>Intern, St.Elizabeth's Medical Center, Boston, MA, USA

**Corresponding Author:** Dr. Sandeep K R, Senior Resident, Department of Orthopedics, Pariyaram Medical College, Kerala, India. Mobile: 08281380306. E-mail: sandeepthedoc@gmail.com

## Abstract

Hind-foot endoscopy is used to reach most intraarticular structures of the ankle. It allows the surgeon to reach both the posterior joint space and the extraarticular compartment of the hind foot with the endoscope and instruments, regardless of diagnosis. Excellent Access to Posterior ankle could be gained by using the posterolateral and posteromedial hindfoot portals. We present a case of chronic retrocalcaneal bursitis presenting with heel pain and not responding to non-surgical measures since 18 months. The endoscopic treatment technique was used to reduce the morbidity and recovery time. The patient had excellent result with no post-operative complications. Hence we conclude that hind foot endoscopy can serve as a safe and alternative treatment in retrocalcaneal bursitis.

**Keywords:** Endoscopy, Hind-Foot, Haglund's Deformity, Retrocalcaneal Bursitis

## INTRODUCTION

Heel pain caused by retrocalcaneal bursitis can be incapacitating. Surgical treatment is the choice for those patients who do not respond to non-operative treatment. The posterior endoscopic ankle approach with the patient in the prone position, offers an excellent access to posterior ankle compartment.<sup>1</sup> It is regarded as an effective treatment option for those who expect to return to their initial activities with a shorter recovery time. Recently, hindfoot arthroscopy using two portal endoscopic approach has been widely used for diagnosis and treatment of hindfoot disorders.<sup>2</sup> We describe a case of chronic retrocalcaneal bursitis causing posterior heel pain and tenderness, effectively treated with hindfoot endoscopy.

## CASE PRESENTATION

A middle aged Asian female, manual laborer by occupation presented with heel pain, which forced her to quit her job. The pain was worse at night and aggravated on walking for long distances. Physical examination revealed tenderness anterior to tendoachilles near its insertion with fullness on either side anterior to tendoachilles insertion. The pain was aggravated by plantar flexion. The blood investigations were

normal. Imaging studies revealed prominent superior tuberosity of calcaneum and confirmed the diagnosis of retrocalcaneal bursitis (Figure 1). Non-surgical treatment including the physiotherapy, analgesics and corticosteroid injection was tried for 18 months without any promising results. Hence, in an effort to reduce further morbidity and recovery time, hindfoot endoscopic technique was employed.

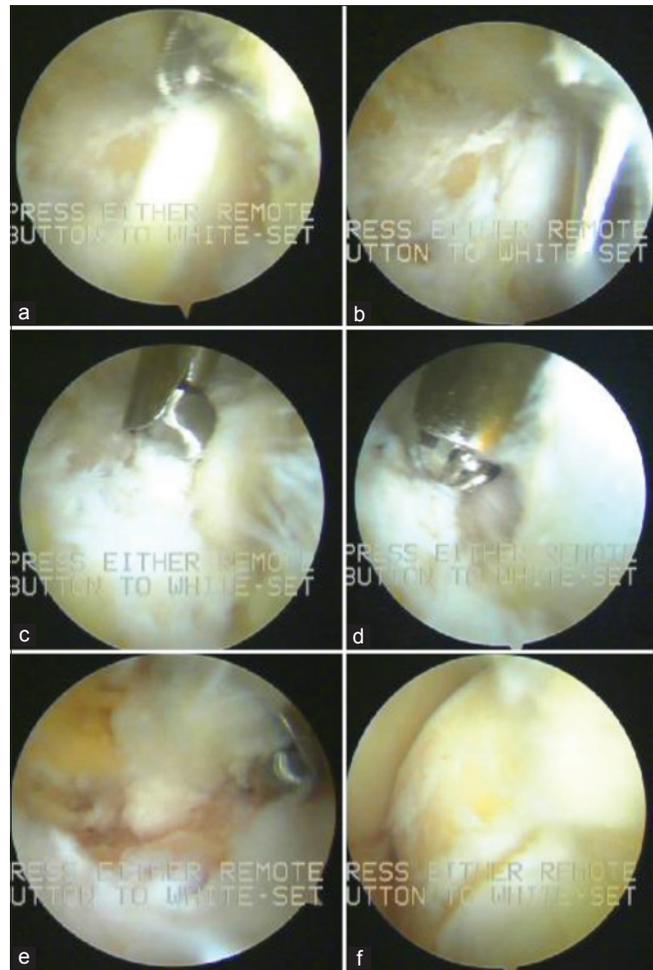
The procedure was performed as an outpatient surgery under spinal anesthesia. The patient was placed in a prone



**Figure 1: Prominent superior tuberosity of calcaneum and the surrounding edema**

position. A tourniquet was applied around the upper leg, and a small support was placed under the lower leg, making it possible to move the ankle freely. A 4.0-mm, 30° endoscope was used for posterior ankle arthroscopy and a 4-mm chisel and small periosteal elevator was also used. With the ankle in the neutral position, a line was drawn from the tip of the lateral malleolus to the Achilles tendon, parallel to the foot sole. The posterolateral portal was situated just above the line, in front of the Achilles tendon. After a vertical stab incision was made, the subcutaneous layer was split by a mosquito clamp. The mosquito clamp was directed anteriorly, pointing in the direction of the interdigital web space between the first and second toe. When the tip of the clamp touched the bone, it was exchanged for 4.0 mm endoscope. The direction of view was 30° to the lateral side. The posteromedial portal was now made at the same level. After making a vertical stab incision in front of the medial aspect of the Achilles tendon, a mosquito clamp was introduced and directed toward the arthroscope shaft in a 90° angle. It was moved anteriorly in the direction of the ankle joint after it touched the shaft of the endoscope, all the way down, until it reached the bone. The tip of the mosquito clamp was made visible by slightly pulling the endoscope backwards. The extra-articular soft tissue in front of the tip of the lens was spread by using a clamp. The posterior compartment of the subtalar joint was visualized, after removal of the very thin joint capsule of the subtalar joint by a few turns of the shaver. At the level of the ankle joint, the posterior tibiofibular and talofibular ligaments were identified. The posterior talar process can be freed of scar tissue, and the flexor hallucis longus tendon was identified. The Flexor hallucis longus tendon was an important landmark to prevent damage to the medial neurovascular bundle. One should always stay lateral to the tendon to avoid injury to the neurovascular bundle. After removal of the thin joint capsule of the ankle joint, the ankle joint was inspected. The retrocalcaea bursa and superior tuberosity of calcaneum was shaved off (Figure 2). At the end of the procedure, hemorrhage was controlled by electro-cautery, and the skin was closed with Ethilon 2.0 sutures. A sterile compression dressing was applied. The post-operative period was uneventful and there was no immobilization and walking was started to pain tolerance on post-operative day 1. The patients were then discharged on oral antibiotics on post-operative day 1 itself. The sutures were removed on day 14. On follow up, patients had excellent pain relief and full range of motion. The patient resumed her occupation by 3<sup>rd</sup> week.

The Patient's pre-operative AOFAS (American Orthopaedic Foot and Ankle Society) Ankle-Hindfoot Scale Score was 75 and Tegner score was 6. The 9<sup>th</sup> month follow-up AOFAS score was 90 and Tegner was 7.



**Figure 2: Endoscopic images of retrocalcaneal bursitis. (a) Tibiotalar and subtalar articulation. (b) Shaver over superior tuberosity of calcaneum. (c) Shaver between calcaneum and tendoachilles region of retrocalcaneal bursa (d-f) Burring of superior tuberosity**

## DISCUSSION

Chronic retrocalcaneal bursitis due to Haglund's deformity, may be difficult to treat effectively by non-operative measures alone. It originally was described as a prominence of the posterior superolateral calcaneus affecting the superoanterior bursa and the Achilles tendon.<sup>3</sup> The various surgical options available for patients with Haglund's deformity who do not respond adequately to nonoperative therapy, include calcaneal osteotomy with or without Achilles tendon débridement, excision of the retrocalcaneal bursa, and calcaneal osteotomy.<sup>4-7</sup> Unfortunately, none of these procedures have yielded a consistent outcome.<sup>8-10</sup> Inconsistent surgical approaches and methods of evaluation are the two main reasons for the poor results in patients with Haglund's deformity undergoing calcaneal osteotomies.<sup>9,11</sup>

In our study, we followed endoscopic decompression, which is a minimally invasive procedure with lesser risk for

post-operative wound complications.<sup>12</sup> The patient in our study recovered without any complications and resumed work in a month's time. In a review done by Wiegerinck JI *et al*<sup>13</sup> which compared various surgical treatments in chronic retrocalcaneal bursitis concluded that endoscopic surgery is superior to open intervention for Retrocalcaneal bursitis. Our study is also consistent with Leitze *et al*.<sup>14</sup>

## CONCLUSION

In our study, two portal posterior endoscopic ankle approach with patient being in prone position was used in hindfoot surgery. This technique offered an excellent access to the posterior aspect of the ankle joint. We conclude that, if this is done by an experienced arthroscopist it serves as an excellent alternative to the open approach for Chronic retrocalcanealbursitis (Haglund's deformity).

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