

Original Research Article

Haglund's disease: surgical outcome of calcaneal osteotomy

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ABSTRACT

Background: The aim of the present study was to assess the surgical outcome of Haglund's disease by calcaneal osteotomy.

Methods: 23 cases of Haglund's disease who failed to respond to conservative treatment were considered for surgery. Parallel pitch lines were drawn in the lateral view radiograph of the calcaneum and the bursal projection to be resected was assessed. All cases were surgically treated with calcaneal osteotomy through lateral approach and followed.

Results: 23 cases of Haglund's disease were treated with this procedure and 21 were available for follow up. The mean follow-up was 15 months. The mean preoperative AOFAS score of 60.57 points (SD= 3.23) and postoperative score of 88.71 points (SD= 3.92) was obtained. Three minor complications were noted.

Conclusions: The results of the current study suggest that calcaneal osteotomy produces outcomes that justify surgical intervention in cases of Haglund's disease.

Keywords: Haglund's disease, Calcaneal osteotomy, Retrocalcaneal bursitis

INTRODUCTION

Heel pain is a common foot condition. Haglund's deformity is one of the most common causes of heel pain and was first described in 1928.¹ An excessive prominence of the bursal projection in the postero superior aspect of the calcaneus constitutes Haglund's deformity. Swelling in this area constitutes Haglund's disease and is associated with retrocalcaneal bursitis. Rigid and prominent heel contour with high heels impinge on the soft tissues overlying the prominence and give rise to symptoms of pain and swelling.

Non-operative measures including analgesia and modified shoe wear may provide relief.^{2,3} Local steroid injections can lead to Achilles tendon rupture. Mc Garvey et al reported 89% of their patients with insertional achilles tendinosis improved with non-operative treatment. Even Mc Garvey et al and others believed surgery was a reasonable option for patients not responding to non-operative treatment.^{4,5}

The present study is undertaken to assess the outcome of calcaneal osteotomy in the surgical management of Haglund's disease (retrocalcaneal bursitis).

METHODS

Our prospective study consisted of 23 cases of Haglund's disease (retrocalcaneal bursitis) admitted to Navodaya Medical College and Research center, Raichur between June 2014 to August 2015.

Inclusion criteria

Patients above 18 years and less than 60 years age, patients with at least 3 months of conservative treatment.

Exclusion criteria

Newly diagnosed (fresh) Haglund's disease cases, patients who were surgically unfit, patients suffering

from Rieters disease, gout, rheumatoid arthritis and other inflammatory causes.

A detailed history was elicited from the patients to reveal the severity, duration of the heel pain and the conservative treatment taken. Patients who were not relieved of symptoms with conservative approach were planned for surgery. Local examination revealed swelling and tenderness on either side of the tendoachilles and behind the achilles tendon on the bursal projection.

Lateral view radiograph of the calcaneum was obtained as given in Figure 1. Parallel pitch lines were drawn and the bursal projection to be resected was assessed.^{3,6} Parallel pitch lines were constructed by dropping a perpendicular line from the posterior lip of the talar articular onto a line that joins the medial and anterior calcaneal tuberosities (BBI). A parallel line was drawn from this posterior lip (AAI). The portion of bone above this line constitutes an abnormal bursal projection as given in Figure 2.



Figure 1: Preoperative X-ray calcaneum lateral view.

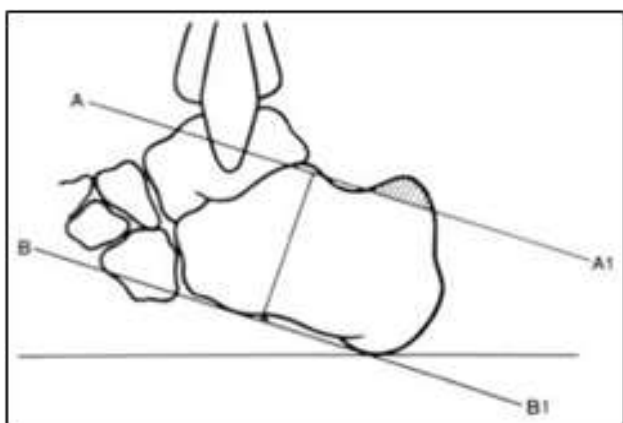


Figure 2: Pictorial representation of parallel pitch lines.

Surgery was performed when the conservative methods of treatment had failed. The mean duration from onset of symptoms to surgical intervention was thirteen months (range: 4 months to 22 months).

Operative technique

Preoperative planning

The consent for surgery was taken from the patient and attendant. The leg was prepared from knee to toes and antibiotics were given half an hour preoperatively. Preoperative X-rays of calcaneus lateral view was taken and the bursal projection to be resected was assessed.

Operative procedure

All the patients underwent surgical procedure under spinal anesthesia and calcaneal osteotomy was performed by lateral approach. With the patient prone and the ankle in plantar flexion, tourniquet was applied to the thigh. Leg was prepared from knee to toe and sterile drapes were applied.

Lateral approach

A curved longitudinal incision was made along the lateral border of the tendocalcaneus and the proximal part of its insertion on the calcaneus. This provided good access to the bursa and to the posterosuperior angle of calcaneus. The postero-superior angle of the calcaneus was exposed sub-periosteally by carefully retracting the tendoachilles medially. The bursal projection was excised by directing the blade obliquely from the posterior tip of the talar articulation to the posterior calcaneal tuberosity. Once the osteotomy was completed, the portion of the bone was easily shelled out from the surrounding soft tissues. The wound was washed with normal saline, closed in layers and the compression bandage was applied.

Postoperative management

A crepe bandage was applied and were immobilized in a below knee cast for 2 weeks. Check X-rays were taken on second postoperative day as given in Figure 3. All the patients were mobilized on second postoperative day non-weight bearing and after two weeks ankle mobilization exercises and partial weight bearing started. Full weight bearing mobilization was done after 4 weeks. Appropriate analgesics and antibiotics were given to the patients till the time of suture removal. Sutures were removed on tenth postoperative day.



Figure 3: Postoperative X-ray calcaneum lateral view.

Assessment of end results

The AOFAS (American Orthopaedic Foot and Ankle Society) ankle hind foot scale was employed to evaluate the patient's outcome. The AOFAS ankle- hind foot score evaluates pain (40 points), function (50 points) and alignment (10 points). It was collected prior to surgery and at the latest postoperative follow-up. Patients were evaluated in the hospital at 6 weeks, 3 months, 6 months, 12 months and 18 months following surgery.

Statistical method

Paired t test used to assess the results in the study.

RESULTS

The present study consisted of 23 cases of Haglund's disease treated by calcaneal osteotomy from June 2014 to August 2015. Out of 23 patients, 2 could not be followed and 21 were available for the final study. The mean follow-up was 15 months. The mean preoperative AOFAS score of 60.57 points (SD= 3.23) and postoperative score of 88.71 points (SD= 3.92), indicating a significant increase in the scores after the operation (P <0.001 paired t test used which is highly significant).

Complications

Intraoperative complications were not noted in any patient. Postoperative complications – 2 patients had superficial wound infection and were advised to take adequate rest and appropriate antibiotics for 2 weeks. Marginal skin necrosis was noticed in 1 patient and was treated conservatively with dressing and healed with

secondary wound healing. This patient had scar and occasionally complained of itching but no pain. Pain recurred in 1 patient due to inadequate excision of the bursal projection.

DISCUSSION

Huglund's disease may be difficult to treat effectively by non-operative measures alone. Many patients don't respond to conservative treatment, leaving surgery as a last alternative. The various surgical methods described to treat this syndrome have, however, produced mixed results, making it difficult for physician and patient alike to decide under what circumstances and with what methods to intervene surgically.⁷⁻⁹

This study was done to determine the efficacy of calcaneal osteotomy in the surgical treatment of Haglund's disease. 23 cases of Haglund's disease were treated with this procedure and 21 were available for follow up. Our study was not a randomized, controlled trial and rather reflected retrospectively collected cohorts. However, all patients were seen before, during, and after surgery by the same surgeon. We evaluated our results and compared with those obtained by various other studies opting calcaneal osteotomy.

The results of the current study suggest that calcaneal osteotomy produces outcomes that justify surgical intervention in cases of Haglund's syndrome not responding to conservative therapy. Mean postoperative AOFAS scores for patients in this study were 88.71 points. The results presented are similar to outcomes previously reported by Brunner et al, Sella et al and Anderson et al using the AOFAS score as given in Table 1.¹⁰⁻¹²

Table 1: Results of various studies after surgery for Haglund's disease using AOFAS score.

Authors	Number of feet	Surgical approach	Preop AOFAS Score	Postop AOFAS Score
Current	21	lateral	60.57	88.7
Anderson et al ¹²	31	Lateral/tendon splitting	43	81
Sella et al ¹¹	16	lateral		13 good; 3 failures
Brunner et al ¹⁰	35	Lateral/medial	54	86

In this study all patients were operated through the lateral approach. The wound healed uneventfully in all except one case who landed in skin necrosis and later healed uneventfully. 2 patients had superficial infection post operatively. They were treated with appropriate antibiotics after culture and sensitivity and wound healed completely after 2 weeks.

John Brunner in his study reported 2 superficial wound infections out of 35 patients who were treated with antibiotics and healed without further incident.¹⁰ Anderson et al in his study reported 4 cases superficial wound infections that promptly responded to antibiotic therapy.¹² Infection can be prevented by taking aseptic

precautions during preoperative, operative and postoperative period. Meticulous dissection of soft tissue and retracting the tendoachilles gently to resect the bursal projection and adequate antibiotic therapy is mandatory.

One case had recurrence of symptoms, which was evaluated and found out to be due to inadequate excision of the bursal projection. Patient was advised revision surgery but patient refused. Adequate bony resection is also critical to satisfactory outcomes. Enough bone should be resected to allow decompression of the tendon and the retro-calcaneal bursa itself. This has previously been established as a critical step in obtaining long term pain relief.¹¹ A limitation of this study was that the

sample size was very small and the average follow up was only 15 months.

CONCLUSION

Haglund's disease is a challenging condition to treat. Conservative methods should be tried in all cases before taking decision of surgery. The results of the current study suggest that calcaneal osteotomy produces outcomes that justify surgical intervention in cases of Haglund's disease not responding to adequate conservative therapy. Adequate bony resection is also critical for satisfactory outcome.

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