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A prospective study of excision of bony eminence in haglund deformity for treating retrocalcaneal bursitis

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Abstract

The aim of this study is to analyse the outcome of surgical management of Haglund's deformity. Haglund's deformity is a prominence in the posterolateral aspect of the calcaneum, causing a painful bursitis, which may be difficult to treat by conservative methods alone. This study is to evaluate the surgical outcomes of excision of Haglund's deformity by the lateral approach. During the period from Feb 2017 to Jan 2018, 20 patients underwent excision of Haglund's deformity using lateral approach and their functional outcome was analyzed using AOFAS Score. The mean AOFAS score at the follow up was 86/100, with significantly decrease in pain at one year follow up. The lateral approach to deformity excision can be an effective treatment for those suffering from Haglund's deformity.

Keywords: haglund's deformity

Introduction

Heel pain is a common foot condition. Haglund's deformity is one among the many causes of posterior heel pain. It is a prominence in posterosuperior calcaneum, anterior to the insertion of tendoachilles, causing mechanical compression over the local soft tissues, associated with wearing low back footwear with a rigid counter. The presence of this prominence predisposes to Haglund's syndrome, a triad of retrocalcaneal bursitis, insertional Achilles tendinopathy, and a painful "pump bump" [1, 2] Most Patients complain of pain over the posterior aspect of heel and on examination painful thickening of the soft tissue of the hind foot, appearing as a "bump," with tenderness on either or both sides of the tendoachilles.

The primary measures are always conservative and comprise of nonsteroidal anti-inflammatory drugs (NSAIDs), extracorporeal shock wave therapy, modified footwear (heel lifts, soft soles, or sleeves), physical therapy and some other modalities. Surgical treatment is usually reserved for refractory cases. The main goal of therapy is to address the basic pathology, i.e., excision of the posterosuperior calcaneal prominence, inflamed retrocalcaneal bursa. Various techniques have been devised to achieve this, including both open procedures, which can be done through different approaches, and endoscopic procedures as well [2, 3-6]. Open procedures are advantageous as they provide an appropriate exposure and allow adequate removal of inflamed tissues and the calcaneal prominence [7, 8]. Our study was done to determine the surgical outcomes of haglund's deformity excision through lateral approach.

Materials and Methods

A Prospective study where patients with retrocalcaneal bursitis who have not responded to conservative treatment, attending OPD at dept. of orthopaedics VIMS, Bellari During Feb 2017 to Jan 2018. We treated 20 cases of Haglund deformity in 20 symptomatic patients at Vijayanagara Institute of Medical Sciences, Bellari by excision of deformity through lateral approach (Figure 1). All 20 patients who failed to respond to conservative management for more than 6 months were included in this study.

Inclusion Criteria

1. Age >18 years and <60 years
2. Patients who have had conservative treatment for 3 months

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Exclusion criteria

1. Newly diagnosed cases
2. Surgically unfit patients
3. Patients suffering from gout, Reiter's, Rheumatoid arthritis or any inflammatory conditions.

All 20 Haglund's deformity excision were performed and were available for follow up throughout the study. Twelve patients were female and eight patients were male. The mean age of the patient was 45 years (range: 39 to 52 years) and the mean follow up time was 12 months (range: 11 to 15 months). Preoperative lateral weight bearing radiograph was taken and evaluated for Chauveaux- liet angle of more than 12 degrees, parallel pitch lines, presence of retrocalcaneal enthesiophytes^[9, 10] and the deformity (Figure 2) for deciding the amount of bone to be excised.

All the procedures were performed under spinal anesthesia. Patients who underwent the lateral approach, a 4 to 6 cm longitudinal incision along the lateral border of the Achilles tendon. A full-thickness skin flap was made to the tendon. The ankle joint was plantar flexed and by blunt dissection

Achilles tendon was identified. A retractor was placed between the Achilles tendon and posterosuperior border of calcaneal tuberosity. The insertion of the Achilles tendon was identified and excised along the lateral border, exposing the prominent calcaneal tuber. Using curved osteotome, this was excised and the edges smoothed with a bone nibbler. After routine closure, sterile dressing was done and below knee slab was applied in 10-15° of plantar flexion and patient were kept on toe touch partial weight bearing. Post-operative radiograph was taken following surgery. (Figure 3).

At 2 weeks follow up, the sutures and below knee slab were removed and patients were advised to gradually increase the weight bearing to full weight. All patients were instructed not to wear normal footwear until 6 weeks. Shoes with heels of 2 cm were advised for the first 6 weeks.

The AOFAS ankle hind foot scale was employed to evaluate the functional outcomes of surgery. 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 1 year of post-operative follow-up whenever possible.

Table 1: Ankle-Hindfoot Scale (100 Points Total)

PAIN(40 points)	
• None	40
• Mild, Occasional	30
• Moderate, daily	20
• Severe, almost always present	0
FUNCTION(50 points)	
❖ Activity limitations, support requirements	
1. No limitations, No support	10
2. No limitation of daily activities, Limitation of recreational activities, No support	7
3. Limited daily and recreational activities, Cane support	4
4. Severe limitation of daily and recreational activities, Walker, Crutches, Wheelchair, Brace	0
❖ Maximum walking distance, Blocks	
1. > 6	5
2. 4-6	4
3. 1-3	2
4. <1	0
❖ Walking surfaces	
1. No difficulty on any surface	5
2. Some difficulty on uneven terrain, stairs, inclines, ladders	3
3. Severe difficulty on uneven terrain, stairs, inclines, ladders	0
❖ Gait abnormality	
1. None, Slight	8
2. Obvious	4
3. Marked	0
❖ Sagittal Motion (Flexion plus Extension)	
1. Normal or Mild restriction(30 degree or more)	8
2. Moderate restriction(15-29 degrees)	4
3. Severe restriction (<15 degrees)	0
❖ Hindfoot motion(Inversion plus eversion)	
1. Normal or Mild restriction(75%-100% normal)	6
2. Moderate restriction(25%-74% normal)	3
3. Marked restriction(<25% normal)	0
❖ Ankle Hindfoot stability(Anteroposterior, Varus-valgus)	
1. Stable	8
2. Definitely unstable	0
Alignment (10 points)	
• Good,Plantigradefoot,Midfoot well aligned	15
• Fair. Plantigrade foot, some degree of Midfootmalalignment observed, No symptoms	8
• Poor, Non Plantigrade foot, Severe malalignment, Symptomatic	0
Total	100

Patients were evaluated in the hospital at 1 month, 3 months, 6 months and 1 year following surgery.



Fig 1: Intraoperative Photograph Showing Lateral Approach



Fig 2: Preoperative Radiograph Showing Haglund Deformity.



Fig 3: Post Operative Radiograph

Results

The mean AOFAS score at the follow-up was 86/100 (range:60 to 97), an improvement of 28 points from the meanpreoperative score. In most patients there was significant decrease in pain at one year follow-up. Sixteen of the twenty patients reported significant decrease in preoperative symptoms. Of the four patients, two patients complained of prolonged duration of recovery and mild pain persisted in two patients at one year follow-up.

The AOFAS score for patients who were not satisfied with surgical outcomes was 58 (range: 45 to 87). The prolonged duration of recovery of two patients was 8 to 10 months and the other two patients felt that their pain to be improved from that of the preoperative period and both patients described

that their pain as localized to their heel. No wound complications were noted in our study.

Discussion

Many patients with Haglunds deformity do not respond to conservative management, some may benefit from surgical intervention. Various techniques have been devised to achieve this, including both open procedures, which can be done through different approaches, and endoscopic procedures as well. [2, 3-6].

The results of our study suggest that excision of deformity produces outcome that justify surgical intervention in cases of Haglund's deformity not responding for conservative management. Mean AOFAS scores for patients in this study were 86/100 and 80% of the patients reported significant reduction in pain.

The results presented are similar to outcomes previously reported by Brunner *et al.* [11] and Sella *et al.* [12] using AOFAS score and Sammarco *et al.* [13] using the Maryland foot score.

Adequate excision of the bone is required to produce a good clinical outcome. Sella *et al.* highlighted the importance of enough bone being resected to allow decompression of the tendon and the retrocalcaneal bursa [12].

Adequate resection of the bony deformity on the medial side is difficult through lateral approach. Anderson *et al.* suggested that tendon splitting approach allows adequate resection of periosteum on the medial side [14].

Conclusion

Our study concludes that, lateral approach to excision of Haglund's deformity can be an effective treatment for those suffering from Haglund's deformity. The awareness for prolonged duration of recovery should be explained to the patients undergoing excision of Haglund's deformity.

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