

Case Series

Functional outcome of operative management of Haglund deformity in non-athletic individuals-a case series

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ABSTRACT

Haglund's deformity is a symptomatic osseous outgrowth or prominence of the posterolateral corner of calcaneus usually in young individuals which presents in the form of posterior heel pain, sometimes intractable in chronic cases, which aggravates on walking or on dorsiflexion of the foot and is relieved with rest and anti-inflammatory medications in the initial phases. Management involves an initial conservative trial involving lifestyle changes and medical management, failure of which warrants surgical management for symptomatic relief along with ability to return to perform activities of daily living. We have a series of 4 patients with a Haglund's deformity who presented to us with chronic posterior heel pain of varying duration with episodic exacerbations who were initially managed with a conservative trial with medications, physiotherapy, lifestyle modifications, usage of soft silicon sole for the footwear; the failure of which prompted us to go ahead with surgical management of these patients-all 4 patients were managed with a lateral wedge removal of the calcaneus with excision of the retrocalcaneal bursa. All 4 patients reported significant improvement in the symptoms with adequate postoperative care and rehabilitation. As we have seen in this case series of 4 patients presented here, Haglund's deformity which is a part of a larger Haglund's syndrome, has a chronic progression over a period of time with episodic exacerbations and remissions, which could be managed conservatively for a significant period initially but, if need be, surgical management should not be deferred not only to provide symptomatic relief as a major goal, but also to avoid permanent degenerative damages to the concerned soft tissues.

Keywords: Haglund's deformity, Posterior heel pain, NSAIDs, Silicon sole, Lateral wedge, Retrocalcaneal bursa

INTRODUCTION

True isolated Haglund's deformity is a symptomatic osseous outgrowth or prominence of the posterolateral corner of calcaneum usually in young individuals which presents in the form of posterior heel pain, sometimes intractable in chronic cases. Also known as Mulholland deformity, it was first described by Patrick Haglund in 1927. The deformity (osteophytic or osseous outgrowth or "pump bump"), is often a part of a broader degenerative process, referred to as Haglund's syndrome and is accompanied with retrocalcaneal bursitis, Achilles'

tendinopathy with or without calcification and pre-tendinous bursitis.¹ The condition is usually idiopathic in nature and bilateral. There are certain provoking factors which could be responsible for the initiation and aggravation of symptoms like obesity, repetitive loading, age, systemic inflammatory disorders such as rheumatoid arthritis, psoriatic arthritis, Reiter's disease. Other infrequent factors include diabetes mellitus, hypertension, use of corticosteroids, connective tissue disorders. Female preponderance is more than males usually affecting young individuals including runners, athletes. It also affects middle aged persons due to the degenerative processes

being initiated by this time.² The pain can be described as dull aching type onset more commonly seen when the patient starts activity or walking after prolonged rest or inactivity. Diagnosis is usually based on taking an elaborate history, clinical examination and imaging studies.

Under imaging studies, preliminary involves plain radiographs with the lateral view of the ankle being the most important view clinching the diagnosis by revealing a bony projection at the postero-superior part of the calcaneal tuberosity, retrocalcaneal bursal thickening. MRI, seldom required, could be done in doubtful cases.³ Management involves an initial conservative trial, failure of which warrants turning towards surgical management in order to provide symptomatic relief to the patient and also to provide the ability to return to activities of daily living pain free.

CASE SERIES

We present a case of 4 patients who were operated at our institution in the year 2022. All patients were initially managed conservatively which included oral NSAIDs and ice fomentation for acute exacerbations, soft silicon sole with separate heel pads for the footwear, physiotherapy which included stretching exercises, voluntary avoidance of ankle dorsiflexion, the patient was given a trial of a local steroid injection after 6 months of the start of his symptoms which provided relief for about 2 months, but symptoms were not relieved hence planned for surgical intervention.

Case 1

A 57 year old male patient, tailor by occupation, presented to us with complaints of right heel pain since 1 year, non-traumatic, insidious in onset and gradually progressive with it becoming intractable in nature over the last 2 months associated with severe exacerbations.

The pain aggravated while walking and later while doing his daily occupational activities. For the first 8 months, the patient was given a conservative trial, then patient was decided to be taken up for surgical management after failure of conservative treatment for symptomatic relief to the patient.

Case 2

A 45 year old male patient, a known case of Diabetes mellitus with no other comorbidities, a driver by occupation, presented to us with right-sided heel pain over the last 6 months, non-traumatic, insidious in onset and gradually progressive, with episodic exacerbations and remissions managed conservatively. The patient was managed with similar measures as in case 1, except for the steroid injection as the patient was diabetic. The patient was decided to be taken up for surgery when the above measure did not provide him with symptomatic relief.

Case 3

A 40 year old female patient, housewife, non-comorbid, presented to us with left sided heel pain since last 8 months, non-traumatic, insidious in onset and gradually progressive. The pain aggravated while walking and doing household activities and was relieved on rest oral analgesics. After a failure of conservative trial as given in case 1, for about 6 months, patient was decided to be taken up for surgical intervention.

Case 4

A 38 year old male patient, pain while walking in right heel since 9 month, pain exacerbates while doing daily life activities. Patient managed conservatively, even after conservative management there was no relief; patient was planned for surgical intervention. We've added Figure 1 clinical picture, Figure 2 pre-operative X-ray, Figure 3 MRI and Figure 4 post-operative X-ray of the case.

Surgical technique

The patients were taken in for an elective surgical treatment-lateral approach wedge removal of the calcaneum with retrocalcaneal bursa excision after being given the all-clear to have surgery. Over the operation table, the patient was positioned prone, 1 cm to the lateral side of the achilles tendon, from 3 to 4 cm proximal to the superior tuberosity of the calcaneus to 2-3 cm distal to the superior tuberosity of the calcaneus, a longitudinal lateral incision was made. The soft tissues were dissected bluntly, and the achilles tendon was exposed via plantar flexion of the ankle. Between the achilles tendon and the superior and posterior borders of the calcaneal tuberosity, a right-angled retractor was positioned. In three patients (Cases 2-4), the achilles tendon was not lifted because plantar flexion of the ankle allowed sufficient exposure to the superior border of the calcaneal tuberosity. But in one case (Case 1), the tendon was elevated by 1 cm in order to appropriately expose the superior tuberosity of the calcaneal tuberosity. By drilling holes along the superior face of the calcaneal tuberosity and resecting the bone using a sharp osteotome, the superior portion of the bone was removed in the shape of a wedge. After this treatment, the incision was thoroughly washed and then closed in layers. Below knee slab was applied in 20 degree plantar flexion.

Post-operative care

The patients were kept non weight bearing for up to 2 weeks till suture removal. Check dresses were done on post-op day 3 and day 7 to look for any wound complication. Strict sugar monitoring was done for the 45 year old male patient with diabetes in post op period. Once the suture removal was done and the wound was healed, walker assisted mobilization was started and the below knee slab was removed and physiotherapy was started in the form of passive and active assisted plantar flexion and

dorsiflexion exercises as tolerated by the patient. As the patients became symptomatically better and the dorsiflexion became stronger, a trial of full weight bearing was given at 6 weeks post op. The patients were completely asymptomatic at the end of 8 weeks after surgery.



Figure 1: Clinical picture.



Figure 2: X-ray showing calcaneal spur.



Figure 3: MRI of ankle showing Haglund deformity.



Figure 4: Post operative X-ray showing excision of Haglund deformity and calcific degeneration in tendon.

DISCUSSION

In cases with refractory Haglund's deformity with chronic heel pain, surgical treatment is the preferred mode of management. Conservative management involves taking adequate rest, limb elevation, ice fomentation and a course of oral NSAIDs for an acute episode involving inflammatory signs and symptoms. Lifestyle changes like using soft silicon sole in the daily footwear, restricting walking or running also helps. Physiotherapy exercises which involve eccentric tendo-achilles stretching exercises providing a long-term symptomatic relief. A localized steroid injection could be tried as a measure to decrease the inflammation but it is also known to cause acute tendon tears, hence avoided, also more in diabetic patients in view of systemic complication of acute hyperglycemia.^{4,5} Refractory cases must warrant the use of surgical intervention wherein, various incisions have been described, but traditionally a longitudinal incision has been used which has been used in our case series here in order to perform a lateral calcaneal wedge removal.⁶

Often, the patients' demands earlier surgical intervention due to reduced pain tolerance and professional requirements, mostly in young running athletes and runners. Here in our case, all 4 patients were non athletes, giving the treating surgeons a scope for exhaustion of all the conservative methods before proceeding with surgical intervention. As the patho-anatomy of the achilles tendon and its surrounding soft tissue goes, it is attached to the posterior part of the calcaneum and is separated from the calcaneal tuberosity by the retro-calcaneal bursa, therefore, dorsiflexion at the ankle joint causes increased pressure at the bursa and the surrounding soft tissues leading to chronic inflammation.⁷ Several surgical approaches have been reported and used for the treatment of Haglund's syndrome and each of them has their own advantages and limitations. The traditionally defined

lateral approach has been used in all 4 cases here. There are certain advantages with the lateral approach such as less chances of tendoachilles avulsion as it's medial attachment is more expansive than the lateral. However, it is associated with more chances of sural nerve damage during intra op manipulation. Sella et al have reported good to excellent results in patients with Haglund's syndrome.⁸ Another study by Wagner et al showed that medial approach with a J shaped incision showed similar results.⁹ A study published by Nunley et al, reported good to excellent results by using a central tendon splitting approach and found it to be superior in terms of excellent exposure with minimal soft tissue injury, less damage to the vascular supply of the tendon, and less chances of sural nerve injury.¹⁰ All these studies do not, however, in no terms demerit the use of the traditional approach used in our series here reiterating the results showed by other studies. Other factors considered in the series previously such as obesity, diabetes, hypertension and other systemic disorders should be brought under strict control in order to decrease the episodes of exacerbation. It is also clear from this case series that even non-athletes suffering from chronic refractory pain require surgical intervention mainly for their pain free fulfilment of daily activities.

CONCLUSION

As we have seen in this case series of 4 patients presented here, Haglund's deformity which is a part of a larger Haglund's syndrome, which were managed initially for a significant period conservatively but surgical management should not be deferred not only to provide symptomatic relief as a major goal, but also to avoid permanent degenerative damages to the concerned soft tissues compromising the already hampered ability to perform daily personal and professional activities.

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