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Surgical Treatment of Haglund's Disease: About 9 Cases

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Abstract **Original Research Article**

Haglund's disease is a rare disease of the hindfoot, linked to a morphological anomaly of the calcaneus postero-superior tuberosity, causing pre and retro-Achilles bursitis and insertional tendinopathy. The purpose of our work is to analyze the functional results according to long-term resections of the posterosuperior tuberosity of the calcaneus, specifying the radio-clinical and therapeutic aspects of this pathology. Our study is a retrospective study of nine cases of Haglund's disease operated in the Department of Orthopedic and Traumatology at the Ibn Sina hospital in Rabat, between 2019 and 2023, correlated with a simple literature review. The average age of our patients was 41 years old with a male predominance. All our patients showed painful retrocalcaneal swelling. The diagnosis was confirmed by radiological explorations (standard radiography and MRI). After failure of medical treatment, surgery consisted in an open resection of the postero-superior tuberosity of the calcaneus. The evolution was favorable in 92% of cases. Complications were rare. Haglund's disease is a pathology often underestimated, we must think about it before all Achilles insertion tendinopathy. Resection of the tuberosity is a simple technique, with undeniable effectiveness, and which is considered the best treatment.

Keywords: Haglund-Calcaneus-Surgery-Pain-Resection-Ankle.

INTRODUCTION

Haglund's disease refers to the pain of the rear foot of mechanical origin in connection with a conflict between the different elements of the retrocalcaneal region. It's actually a foot-shoe conflict related to a morphological anomaly of the postero superior tuberosity of the calcaneus withretro-calcaneal and pre-achilles bursitis inflammation and Achilles tendinopathy. There resection of the posterosuperior tuberosity of the calcaneus performed after medical treatment allows to remove the bony protrusion source of conflict and gives good results.

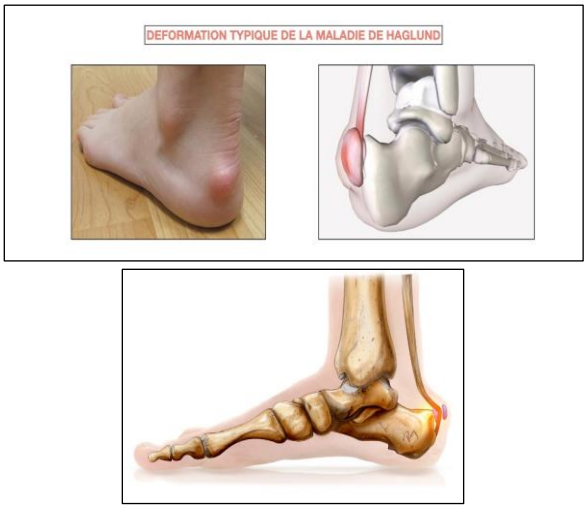

Figure 1: Clinical aspect of the calcaneum tuberosity

MATERIALS AND METHODS

This is a retrospective study of nine patients with Haglund's disease operated in the Traumatological and Orthopedic Department at the Ibn Sina Hospital in Rabat between 2019 and 2023 who benefited from a resection of the postero-superior tuberosity of the calcaneus. The purpose of our work is to analyze the long-term results of our technique, correlated to a simple review of the literature.

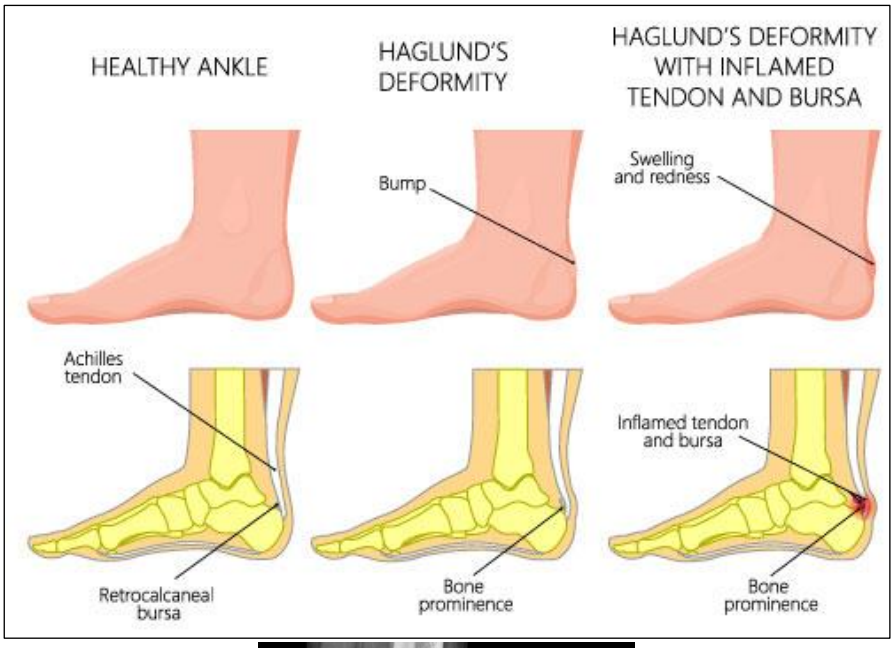

Figure 2: X-ray of the radiological aspect of the calcaneum tuberosity

Figure 3: Clinical aspect of the retro-calcaneen tumefecation

RESULTS

The average age of our patients is 41 years old, only men were observed. All our patients had unilateral symptoms. The right foot is involved in six cases (66.66%). There insertion tendinopathy is the main sign observed with the presence of retrocalcaneal painful in all our patients and the presence of lesions cutaneous next to the tumefaction in 4 patients. Lameness is present when walking in five patients. Joint mobility is painful in eight patients, in particular the dorsiflexion and plantar flexion of the foot. All the patients benefited from a standard X-ray of the face and profile anchor which has objectified the presence of a bony growth at the level of the postero-superior angle of the calcaneus in all patients and a achilles enthesopathy in five patients. Three patient benefited from an ultrasound which objectified the presence of a thickening of the poorly limited subcutaneous fatty tissue, located in view of the tumefaction clinically palpated, without underlying cortical lysis.

Imagery by magnetic resonance (MRI) performed in five patients additionally revealed growths bones the presence of tendon enthesitis of Achilles and pre-Achilles bursitis in three patients. Surgical treatment was recommended in all patients after the failure of initial medical treatment. The incision first used is the para-achilles lateral inverted "J" in all our patients. All patients underwent resection of the postero-superior projection of the calcaneus with an oscillating saw in seven patients, and with the hammered chisel for the others. Other associated gestures have been made at namely a pre Achilles bursectomy in seven patients; tendon combing in five patients and a tendon reinforcement plasty of Achilles by the small plantar in a single patient which presented a weakening of its insertion after resection of the tuberosity. All patients benefited from an immobilization in plaster for a period of three weeks followed by partial support for three weeks and full support to the 6^{th} week followed by functional rehabilitation for a total period of four weeks. The therapeutic results in our patients have been evaluated according to the Maynou classification which based on three clinical criteria namely pain; activity and footwear and are considered excellent in four patients; good in three patients and fair for two patients.

Figure 4: "J" lateral para-achilleen reverse approach

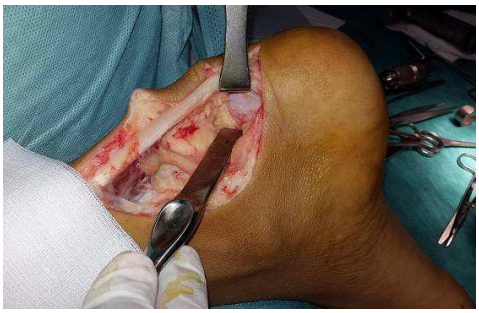

Figure 5: Intraoperative aspect of the prominence of the posterior calcaneal tuberosity

Figure 6: Intraoperative aspect of Achilles tendon combing

DISCUSSION

Haglund's disease or hunchbacked calcaneus has several names in the literature: pump bump, high heel and winter heel [3]. Described by the Swedish Patrick Haglund in 1928 [4]. Affection disabling especially in athletes [1], classically, these are young subjects (15 to 30 years) active, sometimes even teenagers [1], with female predominance (75%) [5]. She is bound to morphological changes in the retro-calcaneal region, mainly incriminating a conflict between the deep surface of the Achilles tendon and the postero superior tuberosity of the calcaneus abnormally protruding and enlarged. The clinical picture is

dominated by pain which appears as soon as the patient is put on and can become chronic and permanent, bothering the sports activities and even walking. The diagnosis is based on the subjective complaint and the clinical examination which found pain in the palpation of the calcaneal prominence. This swelling has a rounded shape extending to the calcaneal tendon and to the lateral surfaces and medial calcaneus; she is the seat skin irritation sometimes open, ulcerated and infected. Passive dorsiflexion and plantar resistance are also painful.

Standard radiography allows the study of bony structures in the region as well as the search for Achilles enthesopathy: the radiological profile incidence in charge of the ankle allows to evaluate the pes cavus if it exists and confirms the prominence of the posterosuperior angle of the calcaneus, often underestimated in due to the presence of fibrocartilage not visible at radiography. Ultrasound can highlight evidence of signs of irritation and compression soft tissues such as pre or retroachilles bursitis, with a thick, hypervascularized wall color Doppler. Moreover, it makes it possible to study the Achilles tendon going from simple tendinopathy to rupture (fissuring, intratendinous nodule and cystic degeneration and rupture) and to make therapeutic follow-up of tendon lesions. MRI, not mandatory, plus efficient than ultrasound, comes last intention to better analyze the state of the parties soft. T2-weighted sequences with saturation of fat, show thickening and Achilles tendon hypersignal at the site of insertion, around which an edema is put in evidence, as well as in the fat pad of Kager. They also show an effusion in the retro-Achilles and retrocalcaneal bursae. T1 sequences with saturation of fat, allow to appreciate the tuberosity calcaneus and medullary edema at the level of the Achilles tendon insertion site.

Before retain the diagnosis of Haglund's disease, it is necessary to eliminate all the other pathologies possible, responsible for pain in the posterior part of the ankle and heel, using the clinical and para-clinical examination data. There are inflammatory tendinopathies (ankylosing spondylitis, polyarthritis rheumatoid); metabolic tendinopathies (hyperuricemia, dyslipidemia); retrocalcaneal bursitis insulated; neuroma of the external saphenous nerve and sciatica. Haglund's disease treatment uses medical and physical means to fight against the pain syndrom, limit inflammation and protect the calcaneal tendon using footwear without rigid posterior buttress as well as the rest. There surgical management includes two techniques: The Zadek osteotomy described in 1939 and the simple resection of the tuberosity. There chosen technique is associated or not with a correction of serious Achilles bursae or an another complementary gesture.

Zadek's osteotomy is initially proposed by Zadek in 1939 and taken up by Taylor, this technique aims to advance the posterosuperior angle of the calcaneus and therefore to reduce the conflict with the anterior surface of the tendon. According Kouvalchouk and Hassan, this intervention seems disproportionate and certainly only exceptional indications. Tuberosity resection was originally proposed by Haglund, but it was only made in 1933 by Spitzy. Typically, this technique simple and effective is the most used with favorable results in 70 to 100% of cases which depend on its accuracy and the care taken in the intervention. Removal of the retro-calcaneal bursa is carried out in a first time, trying as far as possible to avoid touching the insertion of the Achilles tendon and to not weaken it secondarily. Oblique osteotomy from the postero-superior angle of the calcaneus is performed more or less extended according to the authors with the struck chisel (osteotome) or oscillating saw. Classically, it should be wide, going down and back until the insertion of the tendon.The resection must be sufficient to obtain a perfect decompression of the retrocalcaneal region.

Intraoperative radiography allows to evaluate the size of this resection. A insufficient resection can be a source of failure and of recurrence. Furthermore, in the presence of lesions tendons, these must be excised and repaired. Immobilization of the ankle after the intervention in a cast splint in equine and disposal is recommended for a duration varying from two to six weeks. Setting in charge of the ankle is done gradually on a period of four weeks, the pressurization of the Achilles tendon is only permitted from the 12th week. In our study, all our patients underwent tuberosity resection (partial osteotomy) and showed good evolution with good and excellent results.

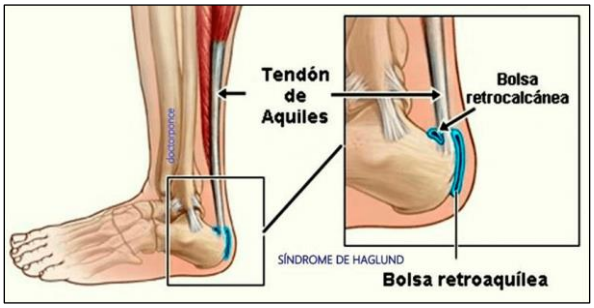

Figure 7 : Ankle anatomy which shows the Achille tendinopathy

CONCLUSION

Haglund's disease is a common cause unrecognized of insertion tendinopathy responsible of a mechanical disability. You have to think about it, look for her and make her diagnosis. Its taking into load should be well planned. Besides his excellent tolerability, tuberosity resection remains a simple, reproducible technique and gives good results.

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