

**TALUS ENUCLEATION: A CASE REPORT**

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**ABSTRACT**

Enucleations of the talus are rare and serious traumatic injuries. They have a poor functional prognosis since they are complicated, in the majority of cases, by osteonecrosis of the talus. We report a case of anteromedial enucleation of the open right talus type II of Cauchoix in a young adult, 27 years old, following a work accident, by indirect mechanism. The patient benefited urgently from a reduction in dislocation by external maneuvers with repair of the capsuloligament elements. The slope was stabilized with a transplant foot nail. After 1 year of follow-up, the ankle was painless, stable and of satisfactory mobility. Without radiological signs of necrosis.

**KEYWORDS:** Enucleation, slope, conservative treatment.

**INTRODUCTION**

Enucleation of the talus or triple dislocation of Anglo-Saxon authors is a rare but most serious traumatic lesion of the posterior tarsus. Representing in the literature 2 to 10% of talar trauma.<sup>[3,4]</sup> The astragalus loses all its connections with the tibia, the scaphoid and the calcaneus; the vascular supply is completely interrupted. The rarity of this lesion explains why the published studies are few and relate to a relatively small number of cases, in fact, less than 80 cases of pure talus enucleations have been reported in the literature.<sup>[5]</sup> three quarters of them 'between them are open.<sup>[3]</sup> The prognosis for this type of injury is dominated by the risk of osteonecrosis. We report the case of slope enucleation. Antero-medial open, treated conservatively with a satisfactory functional result.

**OBSERVATION**

A patient, 27, was the victim of a fall from a height of 5 m with landing on the right foot, causing total functional impotence and severe pain. The clinical examination showed a deformation of the foot in varus, with a protruding slope and an anteromedial wound of 6 cm. (figure 1)

The ankle X-ray showed a complete and pure anteromedial enucleation of the talus (Figure 2). The reduction was carried out by external maneuver after putting the foot in plantar flexion, traction in the axis with repositioning of the talus. Surgical exploration revealed a lesion of the internal capsuloligamentary plane. The reduction was stable, maintained by a

plastered boot for two months followed by rehabilitation, the functional result was satisfactory at the last follow-up and with no sign of radiological necrosis (Figures 3 and 4).



**Figure 1: Open Anteromedial Enucleation.**



**Figure 2: X-Ray Shows Anteromedial Enucleation of the talus.**



**Figure 3 et 4: Control radiographs after reduction of enucleation anteromedial.**

## DISCUSSION

Enucleation of the talus is a rare lesion, little described in the literature. The functional ankle prognosis is compromised by the risk of osteonecrosis. The site of enucleation is variable, most often anterolateral but may be anteromedial, and more rarely posteromedial.<sup>[6]</sup> The pathophysiological mechanism is still discussed. For Pennal,<sup>[7]</sup> anterolateral enucleation is due to a double mechanism of forced plantar flexion and inversion. Plantar flexion causes rupture of the collateral ligament while inversion results in rupture of the Talo calcaneal ligaments. Currently, the majority of authors agree on the conservative treatment of emergency enucleations,<sup>[8]</sup> and reserve arthrodesis for secondary septic complications and late arthritis decompensations. Reduction of the dislocation of the talus should be done urgently to prevent skin and vascular complications.<sup>[9]</sup> The tibio calcaneal arthrodesis was adopted by Detenbeck and Kelly.<sup>[10]</sup> but was a source of significant stiffness. Butel and Witvoet.<sup>[9]</sup> noted poor functional results of the talectomy in the enucleations of the talus and recommend the triple arthrodesis of first intention by taking the talus as graft. Some authors recommend closed hearth reduction using transcalcaneal traction.<sup>[9]</sup> In the event of failure, the bloody route is essential.<sup>[11,12]</sup> The open hearth allows, once the slope has been reduced, to repair the capsuloligamentary structures.<sup>[10,13]</sup> Immobilization is entrusted to a plastered boot for four to eight weeks,<sup>[9]</sup> or to a racking-in.<sup>[13]</sup> The development of talon enucleation after conservative treatment is interspersed with certain complications; the main one is osteonecrosis.<sup>[8,11]</sup> It would be due to a destruction of the capsuloligamentary attachments and to the complete

rupture of all the vascular supplies.<sup>[8]</sup> In some cases of talus enucleation escaping this type of complication, several hypotheses can be put forward. Shahraree.<sup>[14]</sup> thinks that the persistence of some ligament attachments, in particular of the deltoid ligament, explains the inconstancy of necrosis. The artery of the tarsal canal is a branch of the posterior tibial artery, it constitutes the main vascularization of the body of the talus.<sup>[15]</sup> Its integrity at the time of the accident could explain the absence of talus necrosis in certain anterolateral enucleations.

## CONCLUSION

Enucleation of the talus is a rare and serious traumatic injury. It has a poor functional prognosis since it is complicated, in most cases, by osteonecrosis of the talus. Conservative treatment with reduction by emergency external maneuver is a major prognostic element in order to avoid damage by a bloody reduction of what remains of the vascular attachments.

## CONSENT

The patient has given their informed consent for the case to be published.

## Competing Interests

The authors declare no competing interest.

## Authors 'Contributions

All authors have read and agreed to the final version of this manuscript and have equally contributed to its content and to the management of the manuscript.

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