

Surgical treatment of thalamic fractures treated by anatomic plate with survevent

Abstract

Introduction: Calcaneus fractures are frequent and serious injuries. They represent 65% of tarsal trauma and 2% of all fractures. The thalamic fractures constitute a particular entity by their mechanism of occurrence, by their treatment and by their prognosis much less favorable than the extra-articular fractures.¹

Materials and methods: Our series spanning a period of 7 years from January 2011 to November 2018 focused on 12 patients with a thalamic fracture of the calcaneus treated by anatomical plate with bearing, collected in the Orthopedic Trauma Department A of the Hassan II Fez University Hospital. All adult patients with a thalamic calcaneal fracture who had undergone an osteosynthesis using an anatomical plate were included and extra-thalamic fractures and thalamic fractures treated by other therapeutic means or other types of screw plates were excluded. All patients underwent an urgent general systematic examination and a regional examination. On the neurological level, the majority of patients were admitted with a GCS at 15.

Results: Our focused on 12 operated patients between the ages of 17 and 53 with an average of 35 years. Our series includes 12 patients including 17 calcaneum fractures which are divided into 10 men and 2 women; the male sex represents 83.3%. The preoperative delay was on average 9.25 days with extremes between 03 and 20 days. No thromboembolic complications or algodystrophy were noted in our series. According to Kitaoka's rating, the average score was 73.5%. The functional results were excellent in 47.06% of the cases, good in 23.53% of the cases, average in 23.53% of the cases and poor in 5.88% of the cases. In post-operative the average Bohler angle was 26.5° (15° to 35°) against a pre-operative Bohler angle varying between -7° to 15°. On revision, the average recoil from Bohler's angle finds it to be 21.5°.

Conclusion: In the light of all those preceding the surgical treatment of articular fractures of the calcaneus displaced by anatomical plate, despite the risks associated with this technique provides a certain superiority if you are sure you can get a perfect reduction.

Keywords: thalamic fracture, anatomical plate, CHU Hassan II of Fez

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Lahrach K,¹ Soumare B,¹ Sidibe S,¹ Diarra S,² Saeed AR,¹ Boutayeb F¹

¹Department of Traumatology and Orthopedics, Sidi Mohammed Ben Abdellah University of Fez, Morocco

²Laboratory of Epidemiology and Public Health, Sidi Mohammed Ben Abdellah University of Fez, Morocco

Correspondence: Soumaré Boubacar, Resident Doctor in Traumatology and Orthopedics at the Hassan II University Hospital, Faculty of Medicine and Pharmacy, Sidi Mohammed Ben Abdellah University of Fez, Morocco, Tel 00212628815726/22376371922, Email docsoum9@gmail.com

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Introduction

Calcaneus fractures are frequent and serious injuries. They represent 65% of tarsal trauma and 2% of all fractures. The thalamic fractures constitute a particular entity by their mechanism of occurrence, by their treatment and by their prognosis much less favorable than the extra-articular fractures.¹ They are often the consequence of high energy accidents such as falling from a high place.² The standard calcaneus X-ray with computed tomography (CT) allows good visualization of the lesions and guides the management. Surgical treatment is currently part of the therapeutic arsenal of calcaneal joint fractures, however the choice of the means of osteosynthesis in particular between osteosynthesis with closed hearth or with open hearth as well as the utility of the addition of a bone graft remain subject to discussion. Surgical treatment of displaced joint fractures of the calcaneus is recommended by most contemporary authors.^{3,4} Resumption of professional activities seems more constant and early after surgical treatment.⁵ The aim of our work is to evaluate in our department the results of the surgical treatment of thalamic fractures treated by anatomical plate with bearing and compare with data from the literature. Resumption of professional activities seems more constant and early after surgical treatment.⁵ The aim of our work is to evaluate in our department the results of the surgical treatment

of thalamic fractures treated by anatomical plate with elevation and compare with data from the literature. Resumption of professional activities seems more constant and early after surgical treatment.⁵

Materials and method

Our series spanning a period of 7 years from January 2011 to November 2018 focused on 12 patients with a thalamic fracture of the calcaneus treated by anatomical plate with bearing, collected in the Orthopedic Trauma Department A of the Hassan II Fez University Hospital. All adult patients with a thalamic calcaneal fracture who had undergone an osteosynthesis using an anatomical plate were included and extra-thalamic fractures and thalamic fractures treated by other therapeutic means or other types of screw plates were excluded. All patients underwent an urgent general systematic examination and a regional examination. On the neurological level, the majority of patients were admitted with a GCS at 15. All our patients benefited from a standard radiological assessment consisting at least of ankle radiography of the face, in profile and a retro-tibial radiograph and a CT scan. We used the classification of Duparc⁶ and the classification Uthéza⁷ for their educational values allowing to better understanding the anatomo-pathology of thalamic fractures of the calcaneus. All of our patients were installed in strict lateral decubitus mainly under

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literature as well as in our study.^{14,15} Falling from a high place remains the most common mechanism, as is the case in our series. We find in the literature according to Duparc and Caffinière a predominance of types III and IV (50% and 70%) compared to types I and II (10% and 5%),^{12,16–18} while in our work, there is a predominance of types V (47.06%) and IV (29.41%). According to the Uttheza⁷ Classification the mixed form was in fact the most frequent form in our study (70.59%) as in the Jellali¹⁶ series] with 60% on the other hand in the Nouissri¹⁷ series the vertical form was the most frequent with 79%. We used the extended “L” lateral route in all our patients and From the literature series, it appears that all operators agree on the extended “L” lateral route because it gives an excellent day on the lateral face of the calcaneus without cutaneous tension, makes it possible to visualize the entire calcaneus, as well as the subtalar and calcaneal-cuboid joints.^{15,18,19} The average correction of the Bolher angle in our series from 2.5° in pre-op to 26.5° in post-op is comparable to many series in the literature.^{16,17} At the one-year follow-up in our series, the average loss was evaluated at 2.5°, this value is comparable to secondary losses after osteosynthesis by plaque published by Thermann et al.²⁰ Our functional results were comparable to the data in the literature with 70.59% of good to excellent results.^{21, 22} The most common complications according to the different series, not necessarily linked to the osteosynthesis techniques by plaque are: subtalar osteoarthritis, joint stiffness, algodystrophy, skin necrosis; even if their rates remain relatively low in our series with respectively, 1 case, 2 cases, 0 cases and 1 case. Subtalar osteoarthritis is the most formidable complication in the long run, even if this risk seems to be reduced following a plate osteosynthesis.²³ Five of our patients have benefited from a transplant despite this attitude remains a subject of controversy in the literature.^{24–26}

Conclusion

In the light of all those preceding the surgical treatment of articular fractures of the calcaneus displaced by anatomical plate, despite the risks associated with this technique provides a certain superiority if you are sure you can get a perfect reduction.

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Conflicts of interest

No potential conflicts of interest relevant to this article have been reported.

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