



## Ankle fractures-dislocations about 62 cases

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### Abstract

This is a retrospective study about 62 cases of ankle fractures-dislocations collected over a 6-year period from January 2012 to December 2017 in the orthopedic-traumatological and Restorative surgery department of the National Hospital of Niamey. Fractures-dislocations of the ankle are restricted to young people with an average age of 36 years and a male predominance (82%). Etiological circumstances are dominated by road accidents (82.25%). The most common fracture site was malleolar forceps in 24 cases (38.7%). The tibial pestle is ranked second with 23 cases (37.1%). The most common type of dislocation was posterolateral dislocation in 30 cases (48.4%). The association with cutaneous opening was found in 26 cases (41.9%). Surgical treatment remains the treatment of choice for these lesions (87.1%). Functional results are good in 60% of cases, acceptable in 30% and bad in 10%.

**Keywords:** dislocations, retrospective, traumatological, dislocation, treatment

### Introduction

Fractures-dislocations of the ankle are complex traumatism associating two types of lesions, a fracture of the neck of the foot and a dislocation tibio-astragaliene. These lesions remain a rare pathology and are characterized by their extreme gravity, because they pose on the one hand the problem of articular fractures and on the other hand that of dislocations. They are secondary to high-energy trauma and constitute a traumatic emergency. Their incidence continues to increase in Niger, particularly with the upsurge of traffic accidents. The most common late complication is tibiotalar osteoarthritis, explained by a lack of reduction or osteochondral impaction often unknown at the time of the trauma. This work aims to study the epidemiological, lesional and therapeutic aspects of fractures-dislocations of the ankle.

### Patients and Method

This is a retrospective study of 62 cases of ankle fractures-dislocations collected over a 6-year period from January 2012 to December 2017 in the Orthopedic-Traumatological and Restorative Surgery department of the National Hospital of Niamey. In this work we included all patients older than 15 years admitted for fractures-dislocations of the ankle during the study period. We excluded fractures without luxation of the ankle as well as dislocations of the ankle without fractures. We have adopted for each type of bone lesion the most commonly accepted classification. The functional result has also been evaluated in our patients. In total, the parameters studied were mainly the age, the sex, the affected side, the mechanism, the etiology, the seat of the fracture, the type of dislocation, the associated lesions, the therapeutic choice as well as the functional result.

### Results

During this study, 62 cases of fractures-dislocations of the ankle were recorded at a frequency of 10.3 cases / year. There were 51 men (82%) and 11 women (18%), a sex ratio of 4.6 in favor of men. The average age was 36 years with extreme going from 15 to 60 years. The age group of 20 to 40 years was the most concerned (54.8%). Etiology was dominated by road traffic accidents in 51 cases (82.25%). The most common fracture site (Table I) was the malleolar forceps in 24 cases (38.7%). The tibial pestle is ranked second with 23 cases (37.1%).

**Table 1:** Breakdown by seat of fracture

Seat	Number	%
Malleolar forceps	24	38,7
Tibial forelock	23	37,1
Astragalus	7	11,3
Malleolar forceps/Astragalus	2	3,2
Tibial forelock/Astragalus	6	9,7
Total	62	100

The most frequent type of dislocation (Table II) was posterolateral dislocation in 30 cases (48.4%).

**Table 2:** Distribution by type of dislocation

Type of dislocation	Frequency	(%)
External	12	19,35
Postero-external	30	48,4
Posterior	13	20,96
Internal	7	11,3
Total	62	100

The association with cutaneous opening was found in 26 cases (41.9%), ligament injury in 3 cases (4.8%) and tendon injury in 2 cases (3.2%). No vascular or nerve damage was found. Orthopedic treatment was indicated in 8 patients (12.9%) and surgical treatment in 54 patients (87.1%). Among patients who received surgical treatment, racking was performed in 31 cases (57.4%), a plate-screwed in 12 cases (22.2%), screwing in 8 cases (14.9%) and an external fixator in 3 cases (5.5%). Functional results are good in 60%, acceptable in 30% and bad in 10%.

### Discussion

Fractures-dislocations of the ankle are relatively rare lesions. This is why the literature describes only a few cases. The frequency in our series (62 cases in 6 years is 10.3 cases / year) is consistent with that of Varango having found a frequency of 12cas / year [1]. In fact, classically fracture-dislocation is more rare than malleolar fracture without associated dislocation, but is more common than pure tibiofascial dislocation [2,3]. The fracture-dislocation of the ankle is the prerogative of the young subject. Thus, the average age varies from series in literature between 30 years for Varango and 46 years for Jaquemaire, and our series with an average age of 36 is well within this range [1, 4]. The fracture-luxation of the ankle affects more the subject of male sex (82% in our series). This finding is classically found in the literature [1, 4, 5, 6, 7]. Of course, the exposure of the male to traffic accidents more than the female sex can explain this finding of the literature. Moreover, in Niger at the moment there are fewer women driving vehicles and handlebars of two wheels.

In our series, road traffic accidents are the most dominant etiology (82.25%). This predominance is confirmed by some authors, Varango having found 72% and Lecestre having found 45% [1, 8]. On the other hand, Jaquemaire has regained a predominance of work accidents [9]. The seat of fracture in fracture dislocations of the ankle is correlated with the mechanisms of occurrence of the trauma. Thus, in our series, the fracture sat on the malleolar forceps in 24 cases (38.7%). This is explained by the mechanism in prono-external rotation which is frequently encountered in the occurrence of ankle fractures-dislocations as reported elsewhere Jaquemaire in 54.5% [9]. In our series, the most frequent type of dislocation was posterolateral luxation in 30 cases, followed by posterior dislocation in 13 cases. Our results do not agree with those of Elise who, in a series of 16 patients, found a predominance of posterolateral luxations in 8 cases, followed by posterior dislocations in 4 cases [10].

Our study highlighted the severity of skin lesions (41.9%) although our score was lower than that of Varango (92%) and Payne (78%) [1, 11]. However, our result remains higher than that of Lecestre (4.6%) and Jaquemaire (10%) [8, 9]. Therapeutically, of the 62 patients in our series, 8 received orthopedic treatment and 54 had osteosynthesis. Thus, in 54 osteosynthesized patients, racking was performed in 31 cases, followed by the plate-screwed in 12 cases. Our result is consistent with that of Jaquemaire having performed on a series of 11 patients 10 insertion or screwing as well as with that of Varango having realized on a series of 14 cases 12 cases of racking or screwing [1, 4]. In fact, the choice of the osteosynthesis technique depends on the age, the state of the fracture focus (open or closed), the type of dislocation, the seat of the fracture and the trait of the fracture.

In fact, the quality of the result of the orthopedic treatment is based on the centering of the talus in the malleolar forceps; the quality of the results of the surgical treatment rests on the accuracy of the reduction of the fracture centers which does not tolerate any imperfection.

### Conclusion

Fractures-dislocations of the ankle are rare and polymorphic lesions, occurring mainly in the young subject. It is a traumatic emergency that requires an adequate therapeutic indication in order to achieve a better functional result. As a result, its evolution is conditioned by the quality of the reduction obtained. Thus, if poorly treated, fractures-dislocations of the ankle have serious repercussions on the proper functioning of this load articulation. This really raises the problem of socioprofessional reintegration of the patient.

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