

RESEARCH ARTICLE

Orthopaedic Management of Traumatic Limb Emergencies in Brazzaville

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Abstract

Introduction: Limb injuries are a major cause of visits to A&E departments, particularly in low- and middle-income countries where road traffic accidents are on the rise.

Objective: To describe the epidemiological, clinical and therapeutic aspects of the orthopaedic management of limb injuries at the Brazzaville University Hospital.

Methods: A descriptive study conducted from January to June 2025 in the surgical A&E department. Patients aged ≥ 5 years admitted for orthopaedic treatment of a limb injury were included.

Results: 156 patients were included, comprising 93 men (59.6%) and 63 women (40.4%). The mean age was 45.57 ± 6 years (range: 5–71 years), with a predominance in the 10–15 age group. Road traffic accidents accounted for 76% of cases, followed by falls (10%) and assaults (11%). All patients presented with pain and functional impairment. Fractures involved the upper limbs (51.3%) and pelvis (41%). The forearm (32.7%) and lower leg (26.3%) were the most common sites. Treatment was exclusively orthopaedic, involving plaster cast immobilisation.

Conclusion: Limb injuries in Brazzaville are predominantly caused by road traffic accidents and mainly affect young people. Orthopaedic treatment remains an appropriate therapeutic option in our context.

Keywords: Trauma, Fractures, Orthopaedic Treatment, Emergency Department, Brazzaville.

1. Introduction

Injuries represent a major global public health problem, accounting for significant morbidity and mortality, particularly in low- and middle-income countries [1]. Limb injuries constitute a significant proportion of these injuries and are often linked to road traffic accidents [2].

In sub-Saharan Africa, rapid urbanisation, an increase in the number of vehicles on the road and a failure to observe road safety rules are contributing to a rise in trauma cases [3]. In Brazzaville, little data is available regarding emergency orthopaedic care.

The aim of this study is to describe the epidemiological, clinical and therapeutic characteristics of limb injuries treated orthopaedically.

2. Patients and Methods

This was a descriptive cross-sectional study with retrospective data collection, conducted from January to June 2025 in the surgical A&E department of the Brazzaville University Hospital.

We included patients aged 5 years or older admitted for a limb injury that had undergone orthopaedic treatment.

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The variables studied were sociodemographic data, circumstances of injury, clinical data, fracture location and treatment modalities.

The data were analysed descriptively.

3. Results

During the study period, 156 patients met the admission criteria. These comprised 93 men (59.6%) and 63 women (40.4%). The mean age was 45.57 ± 11 years (range: 5–71 years). The most common age group was 10–15 years.

The circumstances of injury were:

- Road traffic accidents: 76%
- Falls: 10%
- Assaults: 11%

All patients presented with pain and functional impairment.

The distribution of injuries is shown in Table I.

Table 1. Distribution of fractures

	n	%
Hand	29	18,6
Forearm	51	32,7
Leg	41	26,3
Foot	35	22,4
Total	156	100

The upper limbs were affected in 51.3% of cases and the lower limbs in 41%.

All patients underwent X-ray examination to confirm the fractures (Figure 1).

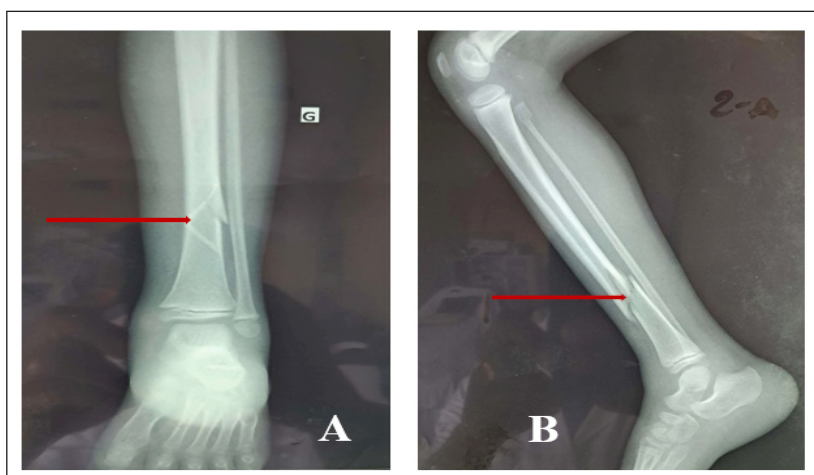


Figure 1. X-ray images showing a fracture line on the anteroposterior view (A) and the lateral view (B)

Treatment consisted of:

- Plaster boot: 35 cases
- Leg and foot cast (Figure 2): 41 cases
- Plaster splint: 29 cases
- Arm and forearm cast: 51 cases



Figure 2. Image showing the lower leg and foot cast on the left lower limb

A follow-up X-ray was performed on all patients.

All patients were referred for specialist consultations (orthopaedics or paediatric surgery).

4. Discussion

Our study shows a predominance of male patients, comparable to data from Africa, where men are more prone to trauma due to their activities [4]. This trend is also observed globally [2].

The high proportion of road traffic accidents (76%) is consistent with data from the World Health Organisation, which identifies such accidents as the leading cause of trauma in low-income countries [1]. In Africa, studies in Benin and Tanzania report similar proportions exceeding 70% [5,6].

The predominance of young people, particularly adolescents, is also found in several African studies, linked to high exposure to risks and increased mobility [7]. Globally, trauma is one of the leading causes of death and disability among young people [2].

Regarding the location of injuries, our study shows a predominance of upper limb fractures, in contrast to certain African series where lower limb fractures predominate [5]. This difference could be explained by the mechanisms of injury and the circumstances in which accidents occur.

Orthopaedic treatment using plaster cast immobilisation was used in all patients. This approach remains widespread in Africa due to its simplicity and low cost [8]. Globally, although surgical techniques are increasingly used, conservative treatment retains an important role, particularly for certain stable fractures [9].

The systematic use of X-rays in our study indicates good access to diagnostic investigations, in contrast to certain rural regions of Africa where diagnostic resources remain limited [8].

Finally, systematic referral for specialist follow-up is an essential element in preventing complications, such as malunion and non-union, which are frequently reported in developing countries [7].

5. Conclusion

Limb injuries in Brazzaville are predominantly caused by road traffic accidents and mainly affect young people. Orthopaedic treatment remains an appropriate approach in our context. Strengthening road safety measures and improving healthcare infrastructure could reduce their incidence and complications.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Authors' Contributions

All authors contributed to this article and have read and approved the final version of this manuscript.

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