



## The Consequences of Traditional Treatments on Bone Fractures. Study About 92 Cases Recorded in Bangui, Central Africa Republic

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### Abstract

**Objective:** To describe the complications observed in patients suffering from a limb fracture treated by a traditional method at home before being admitted to hospital.

**Patients and Method:** This was a prospective descriptive study, carried out in the orthopedic-trauma department of the CHU Communautaire of Bangui from January 1 to December 31, 2015. Patients included in the follow-up department had Limb fractures treated by the traditional method and presenting a complication. These patients should indicate their consent and provide information on the traditional treatment received. Those who had undergone mixed treatment, those who were not consenting and those who presented no complications were excluded. The study was conducted during consultations, and hospitalization. Each patient included was asked about the traditional product used, the stages in the treatment of the fracture. A survey form was used to collect the data and included variables such as age, sex, profession, provenance, type of fracture, product used, reasons for this choice, method used, duration of treatment and course of treatment. The data collected was analyzed using the Epi info 2012 software.

**Results:** The mean age of the patients was 45.4 years (range 14 and 73 years). Male subjects made up 75% of the sample. The Sex ratio was 3. According to the profession, the farmers were the most numerous with a proportion of 22.8%. In 58.7% of the cases, the injured came from within the country. The average consultation time was 4 months. Fractures were common in the leg (32.6%), the femur (27.2%) and the humerus (16.3%). Most fractures (79.3%) were closed. The traditional means used were mainly vegetable leaves (31.5%), tree bark (17.4%) and wild onions (9.8%). These products were used in 62% of cases by application to the fracture site followed by a bandage. In 66.3% of the cases, the fractures were not reduced before treatment and not immobilized in 57.6% of the cases. In the 42.4% of cases the fractures were immobilized and, the immobilization materials were pieces of wood (17.4%), braided Chinese bamboo (16.3%) and bark of wood (8, 7%). The products were renewed every 5 to 7 days in 75% of the cases. Vicious calluses (31.3%), non-union (25.2%) and joint stiffness (14%) were the main complications. Confidence (55.4%) motivated the choice of this treatment.

**Conclusion:** The traditional treatment of fractures is a common practice in our country. Our study found a high frequency of complications due to ignorance of the principles of fracture treatment by traditional healers. The identification, training and awareness of these traditional healers about their limits, the implementation of a collaboration mechanism with modern medicine are strategies to be developed in order to reduce the rate of these complications.

**Keywords:** Fracture; Limb Trauma; Traditional Treatment; Traditional Healer; Complications

## Introduction

The traditional treatment of disease and trauma around the world existed long before the introduction of modern medicine [1]. Around 80% of people in developing countries depend on traditional medicine for their health needs [2]. In Sub-Saharan Africa, the traditional treatment of fractures is a common and widespread practice in the countryside and the cities [3]. In the Central African Republic, traditional medicine is widely practiced. However, this practice is not regulated and there is not collaboration between traditional and modern medicine while in the majority of West African countries [4]. So that, we carried out this study that the aims was to determine the frequency of limb fractures treated outside the health services by traditional methods, and the problems posed by these parallel methods of fracture treatment.

## Materials and Methods

It was a prospective descriptive study, carried out in the orthopedic-trauma service of the CHU Communautaire of Bangui from January 1 to December 31, 2015. Included were patients received at the service level following fractures of their limbs treated in the traditional meth way. These patients should indicate their consent and provide information on the traditional treatment received. Those who had undergone mixed treatment, those who were not consenting were excluded. The study was conducted during consultations, and during hospitalization. Each patient was asked about the traditional product used, the stages of treatment for the fracture, the reasons for this choice. A survey form was used to collect the data and included variables such as age, sex, socio-professional category, type of fracture, product and used, method, duration of treatment, and the complications. The data collected was entered and analyzed using the Epi info 2012 software.

## Results

### Epidemiological and clinical aspects

During the study period, 742 patients has been consulted for limb fractures and 152 of them was treated at home by traditional

treatment, ie 20.5%. We included a total of 92 patients (12.4%) meeting the selection criteria for our study. The average age of the patients was 45.4 years (range 14 and 73 years). The male sex had predominated with 75% of the cases (Sex ratio = 3). According to socio-professional category, the farmers were more numerous than the others. However, there is a significant proportion of the unemployed.

The fractures were closed in 79.3% of the cases and open in 20.7% of the cases. The location of the fractures is two leg bones (32,6%), femur (27,2%), humerus (16,3%) patella (7,6%) isolated shin (5,4%), two forearm bones (5,4%), two malleoli (3,3%) and isolated radius (2,2%).

### Products used for the traditional treatment of fractures

The reasons that motivated the choice of traditional treatment are mainly, the trust placed in the traditional healer and the lack of financial means to access modern fracture care.

Before application of the traditional product, the fracture was reduced in 31 patients (33.7%). In contrast, the fracture was not reduced in 61 (66.3%).

Depending on the case, traditional products were applied to the fracture site in the rough or crushed state followed by a bandage (62%), the fracture site could also be tied by a rope (15.2%), a braided bark (10.9%). The product could be used in scarification (6.5%) or massage (5.4%) on the fracture site.

After the application of the traditional product, 33.4% of the fractures were immobilized against 53 cases (57.6%) not immobilized. For the immobilization of fractures, the means of restraint used were pieces of wood in 16 cases (17.4%), Chinese bamboo braided in 15 cases (16.3%) and bark of wood in 8 cases (8.7%) some of which were at the same time the traditional drug product. In 69 patients (75%), the product was renewed every 5 to 7 days while in 23 patients (25%), it was not renewed.



**Figure 1:** Leg fracture treated by applying leaves to the fracture site.



**Figure 3:** Gangrened complicated double Fracture of left leg after traditional treatment.

**Complications after traditional treatments of limb fracture**

The main complications noted were vicious calluses (56.1%) and non-union (32.1%) especially when the fractures were closed. In contrast, osteitis (30.7%) and gangrene (26.3%) were common in open fractures ( $p = 0.00$ ). When the fractures were reduced, the proportions of vicious calluses (34.8%) were greater than when the fracture had not been reduced (27.0%). The same is true for non-union, 38.5% versus 24.3% respectively ( $p = 0.609$ ). Similarly, when the fractures were immobilized, the vicious calluses represented 31.75% of the cases and nonunion 47.42% of the cases against 25.4% and 25% for the vicious calluses and nonunion respectively in the non-immobilized fractures ( $p = 0.755$ ).

**Discussion**

In our country in general and in rural areas in particular, the traditional treatment of fractures is reputed to be very effective; which leads most patients to resort to it and only consult health facilities if this treatment fails. Despite the diversity of the location of the fractures, it was in our series of injuries, the majority of which were passengers in motorcycle taxis or in freight vehicles who had no protective measures. Closed fractures represented 79.3% of the cases. This frequency can be superimposed with the series by Da [5] who reported 83% of cases. In 2010, Souna, *et al.* in Niger found 84.3% of the cases [6].

In our study, the most used products were plant leaves, tree bark, wild onions. Other authors reported that the products used were banana and palm leaves and plants [7-9]. The products that traditional healers use vary from country to country, but also from one healer to another. In addition, our traditional healers keep the names of their products secret so as not to lose their reputation and their clientele; which did not allow patients to give us the names of products used. The application of the raw or crushed product on the fracture site maintained by a bandage was the most used practice in our patients. This practice was reported in the series of many authors [4,8,10]. Traditional therapists had explained this method by the direct effect that the product would have on the fracture. In our series, the majority of fractures (66.3%) were not reduced before the product was applied. The other authors explained in their series that the fractures were reduced blindly,



**Figure 2:** Vicious callus and angulation of trochanteric mass after the traditional treatment.

without anesthesia by the bone repairer, by being helped by his apprentice or a relative of the injured man before the product application [7,11]. Among the 92 patients, 39 (42.4%) said that their fractures were immobilized and the means of immobilization were pieces of wood, braided Chinese bamboo and wood bark. In the Omololu series [11], raffia and palm branches were the means of immobilization used. The ignorance of the principles of treatment of a fracture by traditional therapists justifies the non-immobilization of fractures. In 75% of fractures, the products were renewed between 5 and 7 days. This practice was also reported by the authors [8,11] in their series, products every 3 to 5 days. The patients had explained that, according to the healer, the purpose of renewing the products was to renew their active ingredient; which is at the origin of the constant mobilization of the foci of fractures with each gesture from where the high frequency of the pseudarthroses observed. Our patients had consulted within an average of 4.2 months. This period is shorter than that of the Sidibé series in Mali [12] and Souna series in Niger [6], whose patients were received at 8 and 8.5 months from traditional treatment. We can explain that some patients who noticed rather the failure of this treatment, had turned to modern medicine while others, hoping for a hypothetical cure, had consulted late. The most complications observed in our study was vicious calluses, non-union, joint stiffness, osteitis and gangrene. These complications were also observed in the series of Da [5] and Mathieu [1] who recorded respectively 58.35 and 47% of cases of vicious calluses, 25% and 32% cases of non-union. In 2015, in Nigeria Babatunde, *et al.* [13] noted 53.3% of pseudarthrosis and 4.4% of gangrene.

In the series of Tékpa in 2003 [3], Bickler in 2016 [14] and Garba, *et al.* in 1998 [15], gangrene was the main complication with a respective frequency of 90.5%, 89% and 63.2% of the cases. The high frequency of these complications in our study is justified by the non-reduction and immobilization of fractures, the periodic renewal of products as well as the management of open fractures and tight immobilizations. Regarding the reasons for choosing the traditional treatment, 55.4% of the patients explained that they trusted this medicine, 17.4% mentioned the lack of financial means and 12% out of ignorance. The family decision (8.7%) had also influenced this choice as found in the series of Tékpa [3] whose patients who were between 5 and 15 years old had no decision-making power. In contrast, in the series reported by Dada, *et al.*

[16] in 2009 and Odusen [17], in 2006, patients had justified this choice by poverty, ignorance and superstitious beliefs. In Central African context, the use of modern medicine for the treatment of fractures is still difficult to convince some of patients in both urban and rural areas because of beliefs and customs, even among intellectual patients.

## Conclusion

The traditional treatment of fractures is a common practice in our country. Our study, although limited to the single referral service, found a high frequency of complications due to ignorance of the principles of fracture treatment by traditional therapists. A nationwide study would assess the results of this practice since most of the patients were from the hinterland.

The organization, training and awareness of traditional healers about their limits and collaboration with modern medicine could help reduce these complications.

## Conflict of Interest

The authors declare that they have no conflict of interest in relation to this work.

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