

# *Human Bite Facial Wounds Observed At The University Hospital Center Antanambao Toliara Madagascar*

Haminason LS<sup>1</sup>, Rakotoarimanana FVA<sup>2</sup>, Randrianjaka HF<sup>3</sup>, Rakotoniaina F<sup>1</sup>, Rakotoarison RA<sup>4</sup>,  
Rakotosamimanana J<sup>1</sup>, Riel AM<sup>5</sup>, Randriamanantena T<sup>6</sup>.

<sup>1</sup>Surgery department, University Hospital Center Antanambao Toliara Madagascar

<sup>2</sup>Maxillofacial department, University Hospital Center Joseph Dieudonné Rakotovao, Befelatanana Antananarivo, Madagascar

<sup>3</sup>Surgery department, University Hospital Center Mitsinjo Betanimena Toliara Madagascar

<sup>4</sup>Maxillofacial department, Hospital Center Soavinandriana Antananarivo, Madagascar

<sup>5</sup>Reanimation department, University Hospital Center Antanambao Toliara Madagascar

<sup>6</sup>Maxillofacial department, University Hospital Center Andrainjato Fianarantsoa, Madagascar

Corresponding Author : HAMINASON Léandre Sylvestre

Email : haminasonl@gmail.com



## Abstract

**Introduction:** The aim of this study was to determine the epidemiological and anatomo-clinical aspects of human bite facial wounds seen at the University Hospital Center Antanambao Toliara Madagascar.

**Method:** This was a 03 years retrospective descriptive study, from January 2018 to December 2020. Patients with facial wounds caused by third-party bites were included.

**Results:** We identified 14 patients including 10 men (71.43%) and 04 women (28.57%), giving a sex ratio of 2.5. The mean age of our patients was 31.14 years. The victims of the bite come from a variety of socio-professional backgrounds. Nine patients lived in rural areas and 05 in urban areas. The bites were inflicted by males in 64.29% of cases. The bite occurred between man and man in 09 cases; woman and woman in 04 cases, and one man was bitten by his wife. The bite occurred during a fight under the influence of alcohol in 10 patients; during a social conflict in 03 patients and a marital conflict in one patient. Eight patients (57.14%) consulted in the first six hours after the accident. The lower lip (50%) was the most frequent site of injury, followed by the ear (21.43%). In 71.43% of cases, these were wounds with loss of substance. Treatment was medico-surgical.

**Conclusion :** Human bites are a rare cause of facial injuries in our practice. The resulting injuries are often immediately serious and deserve great attention.

**Keywords –** Face, Human Bites, Wound.

## I. INTRODUCTION

Human bites during assaults can cause disfiguring wounds on the face, leading to aesthetic and/or functional sequelae according to the area affected. These types of wounds carry the risk of being infected by bacteria from the aggressor's oral flora, and are generally considered dirty or contaminated lesions. The human bite is also biologically susceptible for transmitting some infections such as hepatitis B, C or even Human Immunodeficiency Virus (HIV) [1-4]. Facial injuries caused by human bites have not yet been studied in Madagascar. The aim of this study was to determine, through a retrospective study, the epidemiological and anatomo-clinical aspects of facial wounds from human bites seen at the University Hospital Center (UHC) Antanambao Toliara Madagascar.

## II. METHODOLOGY

We conducted a descriptive retrospective study of the medical records of patients seen and treated for facial wounds following human bites inflicted by a third party; in the Emergency and Surgery departments of the University Hospital Center Antanambao Toliara Madagascar over a period of 3 years from January 2018 to December 2020. The variables studied were epidemiological (age, sex, occupation, residence, nature and circumstances of the injuries, relationship between victim and aggressor, consultation time after the accident...) and clinical (wound topography, wound type, ...). Animal bite wounds and self-inflicted human bites are excluded from this study.

## III. RESULTS

We identified 14 patients with facial lesions caused by human bites inflicted by a third party among the 2,520 maxillofacial trauma patients seen and treated at the University Hospital Centers Antanambao Toliara Madagascar during a period of 4 years, representing a hospital prevalence of 0.56% for all maxillofacial trauma cases.

There were 10 men (71.42%) and 04 women (28.57%), with a sex ratio of 2.5 (fig. 1).

The mean age of our patients was 31.14 years, with extremes of 17 and 53 years. The 21-30 and 31-40 age groups were the most represented, accounting for 71.42% of cases (Table 1).

Bite victims came from a variety of socio-professional backgrounds (Table 2). Nine patients lived in rural areas and 05 were residents.

The bite occurred during a fight under the influence of alcohol in 10 patients (71.43% of cases), during a social conflict in 03 patients (21.43% of cases) and during a marital conflict in one patient (7.14% of cases) (table 3).

The bite occurred between man and man in 09 cases (64.28% of cases); woman and woman in 04 cases (28.57% of cases) and one man was bitten by his wife (7.14%).

The biters were friends of the victim in 10 cases (71.43%); sexual rivals in 02 cases (14.29%); a neighbor in 01 cases (7.14%) and a wife in 01 cases (7.14%) (table 4). All victims knew their attacker and inversely.

Fifty-seven point fourteen percent (57.14%) of our patients consulted in six hours of the accident [fig. 2].

The lesion topography was labial inferior in 07 patients (50% of cases), followed by the ear in 03 patients (21.43% of cases) (fig. 3).

These were wounds with tissue loss in 71.43% of cases. One patient brought a fragment of amputated auricle to hospital. We had one case of an infected wound at the time of consultation (patient seen on the seventh day after bite).

Associated non-facial bites were located on the superior member in 02 cases and on the thorax in 01 cases.

None of our patients had up-to-date anti-tetanus vaccination status. Not all the aggressors' serological status was known. And 04 of our patients consented to serological testing for hepatitis B, C and HIV, which proved negative.

Treatment was medico-surgical: all patients consulted during the acute phase of the wound received amoxicillin antibiotics, with or without imidazole or clavulanic acid depending on the case, and analgesic. Various surgical techniques were used to repair the wounds after careful disinfection and trimming (fig. 4, 5).

## IV. DISCUSSION

Our study concerned 14 patients with human-inflicted facial bites over a period of 3 years at the University Hospital Center Antanambao Toliara Madagascar. This study joins the world of literature reporting the low incidence of facial injuries caused by human bites inflicted by a third party [2, 5, 6].

Authors are unanimous on the predominance of these lesions in young adults [4, 7, 8]: the mean age observed by Donkor P et al [9] was 31.8 years; those of Zegbeh-N'guessan EK et al. and Chidzonga MM were 32.77 and 32.5 years respectively [2, 10], similar to ours which was 31.14 years.

We noted a male predominance in this study. This finding is also shared by authors in Nigeria, Côte d'Ivoire, India and England [2, 4, 8, 11]. On the other hand, Obukwe et al in Benin and Shubi FM et al in Tanzania have reported a predominance of female involvement (with female aggressors) in relation to social or matrimonial conflicts in polygamous marriages, often resulting in fights between the wife and co-wife [5, 12].

Fighting under the influence of alcohol being the most cited event leading to biting in our study. A study by Eardley WGP et al in England and one by Henry PF et al in Ireland respectively reported that 75% and 86% of human bites occur under the influence of alcohol, and the accident occurs mainly at weekends or on public holidays [11, 13]. In fact, the circumstances leading to accidents are varied, including fights between neighbors, jealousy, infidelity in marriage, disagreements in social affairs or in the workplace, marital dispute, robbery, rape...etc [1, 2, 5, 9, 14].

Studies carried out in Côte d'Ivoire, Tanzania and Ghana have shown that in most cases, the aggressor is a person known to the victim [2, 5, 9] and the bites were intended to deform the adversary or to defend yourself, similar to the result of our study.

Consultation time was relatively short, both in our study and in other studies. Indeed, more than half of our patients consulted within six hours after the accident. Seventy-eight point six percent (78.6%) of patients in the series reported by Millogo M et al in Burkina Faso and 72.7% of patients in the series by Shubi et al in Tanzania consulted within 12 and 24 hours of the accident respectively [5, 14]. This willingness to consult could be explained by the aesthetic and/or functional discomfort associated with the location of the lesion, because it is most often located on the lower lip, ears or nose.

In our study, the lesion was located on the lower lip in 50% of cases, similar to the results of studies carried out in Ghana, Tanzania and Nigeria, where the lower lip is the most frequent location of facial injury from human bites [3, 5, 7].

For Ratnakar et al in India, the nose is the most affected area, followed by the ear, while for Eardly et al in England, the ear is the preferred site of injury from human bites on the face [4, 11]. In fact, the topography varies according to the study, but the most affected areas are the protrusions, and prominent areas of the face, easily grasped by the opponent's teeth in the event of a confrontation.

The lesions found in our study were almost deep, with tissue loss in 71.43% of cases. Sixty-five percent of patients with human bites in the series reported by Henry FP et al in Ireland presented a wound with loss of substance, compared with 48% in the series by Eardly WGP et al in England. Eighty-two point thirteen percent (82.13%) of labial wounds caused by human bites in a study by Millogo et al in Burkinafaso presented a loss of substance [11, 13, 14].

According to the literature, the depth of the lesion is relative to the length of the anterior teeth (incisors and canines), which are the sharpest.

In the event of a bite, the opposing teeth of the two arches may come into contact, which results in the complete section of the area affected by the bite [7, 14].

We recorded one case of a clinically infected wound at the time of consultation and this was the case of a patient seen on the seventh day after the bites. Fourteen percent (14%) of facial human bite wounds in the series reported by Henry PF et al were infected, while none of the cases reported by Omokaro O et al in his studies were obviously infected at the time of consultation [6, 13].

In fact, the potential for infectious complications after a human bite is well documented, with a risk of local bacterial infection estimated at between 10 and 20%. Delayed consultation and wound site (low vascularity area) are noted as factors associated with an increased risk of infection [1, 13].

As for viral infections after human bites, cases of viral hepatitis B, C or even HIV have been reported. Thus, the serological status of aggressors and victims with regard to viral hepatitis B, C and HIV should be known in order to assess the risk of transmission for both victims and aggressors [1, 13, 15, 16, 17].

In this study, the four patients who consented to serological tests for viral hepatitis and HIV were free of viral infection at the time of treatment, and no prophylaxis was carried out for these patients despite the lack of knowledge of the serological status of their aggressors.

The notion of systematic anti-viral prophylaxis after a human bite is a controversial issue. The decision to initiate prophylactic treatment is assessed on a case-by-case basis [13, 18]. Our patients were all lost to follow-up after healing, and no serological follow-up has carried been out.

For surgical wound management, there is a diversity of opinion regarding the timing of surgical procedure for human bites. On the face, most authors prefer primary surgical repair of clinically uninfected facial bites and delayed closure is reserved for some wounds with a high risk of infection or already infected [3, 9, 13, 14].

Immediate repair would have the advantage of improving aesthetic and functional results because the anatomical landmarks are still clearly visible [14]. We have recorded 100% success with primary surgical wound closure in the non-infected acute phase, under antibiotic cover to minimize the risk of infectious complications.

## V. CONCLUSION

The incidence of facial wounds by human bites is rare in our practice. It is a pathology of the young adult, with a male predominance. The main causes are fights orchestrated by the consumption of alcoholic beverages. The lower lip was the most affected. The wounds are often deep, with tissue loss requiring appropriate management to avoid functional and aesthetic complications.

## REFERENCES

- [1]. Claros P, Konska N, Claros A. Facial human bites : vision on short-term medical missions in Africa. *Otolaryngol Pol* 2020;74 (5):31-6.
- [2]. Zegbeh-N'guessan EK, Béréte PIJ, Salami TA, Assouan C, Assi Yapo RE, Crezoit GE. Human bite facial wounds in Bouaké (Côte d'Ivoire): development of a therapeutic algorithm in underdeveloped countries. *J Oral Med Oral Surg* 2020;26:1-7.
- [3]. Acheampong AO, Duah M, Selormey R, Donkor P, Bankas D. (2016) Orofacial Human Bite: A Six Year Review of Cases from Komfo Anokye Teaching Hospital. *Open Journal of Stomatology* 2016 ;6 :179-84.
- [4]. Sharma R, Singh K, Singh A. Profile of Human Bite Facial Injuries and Their Management. *JK Science* 2015;17(1) :26-9.
- [5]. Shubi FM, Hamza OJ, Kalyanyama BM, Simon EN. Human bite injuries in the oro-facial region at the Muhimbili National Hospital, Tanzania. *BMC Oral Health* 2008; 8(12):1-6.
- [6]. Osaiyuwu O, Osaguona AO. Human Bite Injuries of the Orofacial Region: An Analysis of 26 Cases in Port Harcourt, Nigeria. *Craniofacial Trauma & Reconstruction Open* 2020;5:1-5.
- [7]. Asuku ME, Adeola DS , Obiadazie AC, Ononiwu CN. Human Bites of the Face with Tissue Losses in Cosmopolitan Northern Nigeria. *Nigerian Journal Of Surgical Research* 2006;8(3-4):123-27.
- [8]. Olaitan PB, Antonia O, Ugwueze GC, et al. Management of human bites of the face in Enugu, Nigeria. *Afr Health Sci.*2007;7(1):50-4.
- [9]. Donkor P, Bankas DO. A study of primary closure of human bite injuries to the face. *J Oral Maxillofac Surg* 1997;55(5): 479-81.
- [10]. Chidzonga MM. Human bites of the face. A review of 22 cases. *S Afr Med J* 1998 Feb;88(2):150-2.
- [11]. Eardley WGP, Harrison MH, Coady MSE. Human Bite injury in North East England – The Impact Of alcohol intake on a mode of violent assault. *J R Army Med Corps* 2006;152(1): 22-5.
- [12]. Obukwe ON. A study of human bite injuries to the face. *Cent Afr J Med* 2002;48(5-6): 68–71.
- [13]. Henry FP, Purcell EM, Eadie PA. The human bite injury: a clinical audit and discussion regarding the management of this alcohol fuelled phenomenon. *Emerg Med J* 2007;24(7): 455-58.
- [14]. Millogo M, Ouedraogo RWL, Ily V, Konsem T, Ouedraogo D. Labial lesions by human bite. *J Oral Med Oral Surg* 2018;24:153-56.
- [15]. Ferreiro M, Dios P, Scully C. Transmission of hepatitis C virus by saliva? *Oral Diseases* 2005;11(4): 230-35.

[16]. Fenton P, Stornello C. Hepatitis B virus transmitted via bite. *The Lancet* 1991; 338(8780): 1466.

[17]. Khajotia RR., Lee E. Transmission of Human Immunodeficiency Virus through saliva after a lip bite. *Archives of Internal Medicine* 1997;157(16): 1901.

Patil Pradnya D, Panchabhai Tanmay S, Galwankar Sagar C. Managing human bites. *Journal of Emergencies, Trauma and Shock* 2009;2(3):186-90.

LIST OF TABLES AND FIGURES

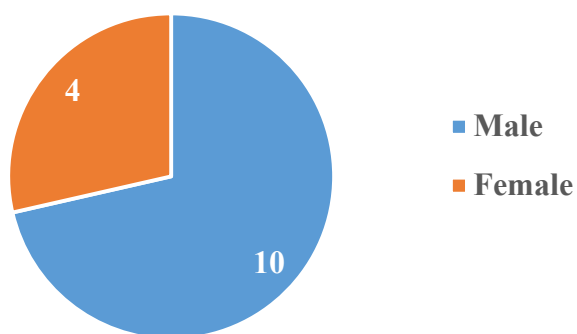


Figure 1 : Distribution of patients by sex

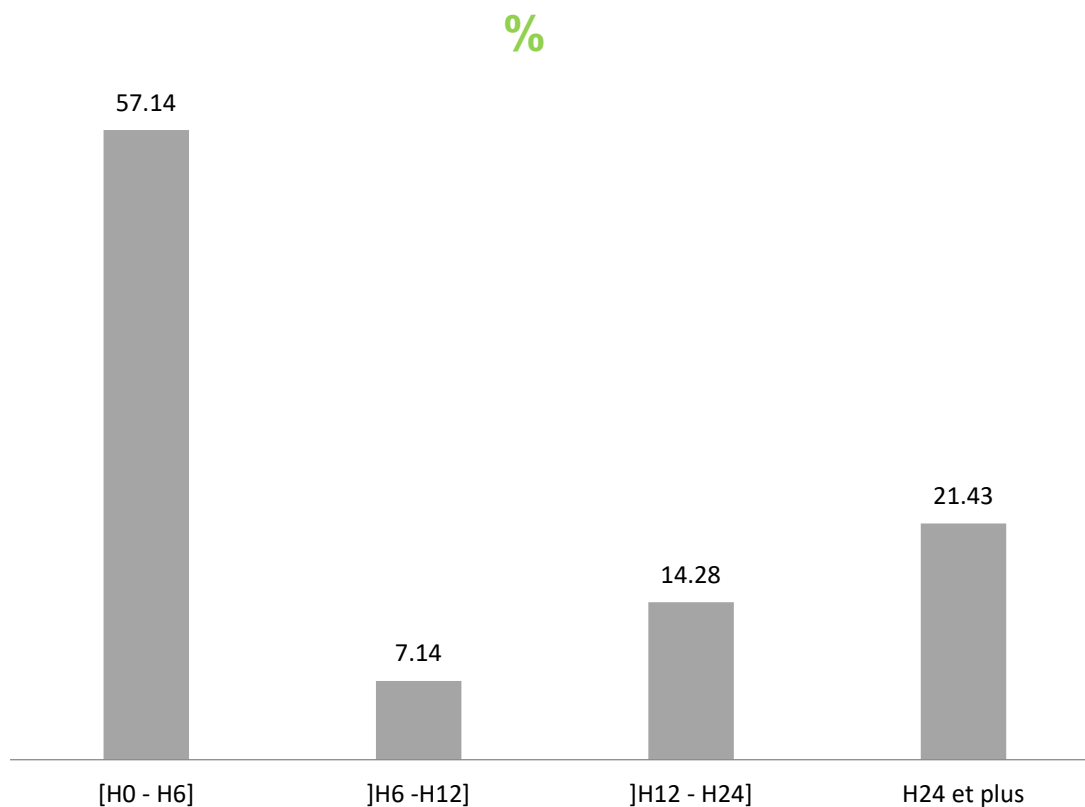


Figure 2 : Delay of consultation after the accident (H = hours)

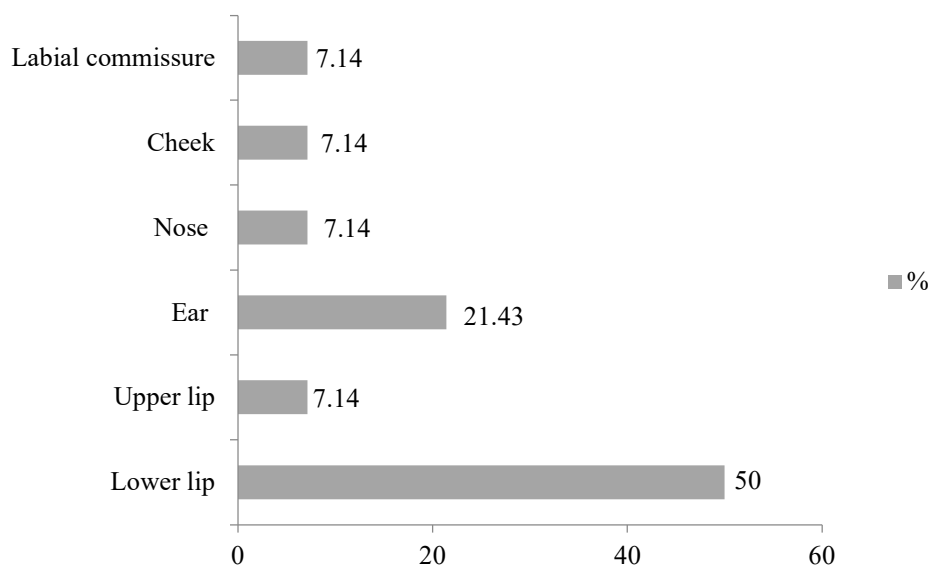


Figure 3 : Distribution of facial bites by site



**Figure 4 :** a) Human bite injury of the lower lip with avulsion of tissue ; b) The patient two days after treatment by primary suture, c) The patient ten days after surgery



**Figure 5 :** a) Human bite injury of the lower lip with avulsion of tissue two months after the accident, b) The patient three days after surgery

**Tableau 1 :** Distribution of patients by age

Age group (years)	Number	Percentage %
[11-20]	02	14,28
<b>[21-30]</b>	<b>05</b>	<b>35,71</b>
<b>[31-40]</b>	<b>05</b>	<b>35,71</b>
[41-50]	01	7,14
[51-60]	01	7,14
<b>Total</b>	<b>14</b>	<b>100</b>

**Tableau 2 :** Distribution of patients according to their socio-professional background

Occupation	Number	Percentage %
Farmer	04	28,57
Fisherman	04	28,57
House wife	02	14,28
Student	01	7,14
Docker	01	7,14
Others	02	14,28
<b>Total</b>	<b>14</b>	<b>100</b>

**Tableau 3 : Circumstance of human bite**

<b>Victim</b>	<b>Male (%)</b>	<b>Female (%)</b>	<b>Total (%)</b>
<b>Circumstance</b>			
Fight under alcohol	<b>09 (64.29)</b>	01 (7.14)	<b>10 (71.43)</b>
Social conflict	00	03 (21.43)	03 (21.43)
Marital conflict	01 (7.14)	00	01 (7.14)
Total	10 (71.43)	04 (28.57)	14 (100)

**Tableau 4 : Relationship between the agressor and the victim**

<b>VICTIM</b>	<b>AGRESSOR</b>	<b>NUMBER</b>	<b>PERCENTAGE %</b>
Man	Friend	08	57,14
Women	Sexual rival	02	14,29
Husband	Wife	01	7,14
Student	Friend	01	7,14
Women	Neighbor	01	7,14
Women	Friend	01	7,14
<b>TOTAL</b>		<b>14</b>	<b>100</b>