



Case Series

Restorative management of human bite injuries to the face: Case series

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ABSTRACT

Facial skin wounds are common problems seen and treated by emergency centers around the world. Among all wounds, cat and dog bites are frequently seen. Human bite injuries are both deceptive and difficult in their presentation and management. The injuries have a disfiguration effect with possible psychological impact on the patient.

The aim of this paper is to compare experience with human bites of the face in our surgical unit, with other similar trials in term of reasons for the circumstances of injuries, age, and sex of the patients, site of injury, pain-time between consultation and treatment, incidence of infection and surgical management.

Data in terms of age, gender distribution, circumstances of injury, location of injuries, evolution of surgical management and complications were recorded.

We report here a series of 10 cases of human bite wounds to the face, admitted to our department, and treated with different reconstruction procedures.

1. Introduction

Traumatic facial injuries raise serious challenges in terms of reconstructive opportunities and surgical management results. The etiology of facial injuries includes human bite as human interpersonal violence. Bite wounds are always considered to be complex injuries contaminated with polymicrobial agents. The reconstructive techniques are usually varied but the ultimate goals of treatment are to achieve healing, function, and aesthetics.

The management of human bites is very complex due to the various factors surrounding it. The cases described in the literature remain limited, and the conduct to adopt are controversial; so we highlight our experience in the management of these particular cases and compare it with what is described in the literature.

2. Patients and methods

The study was performed on Ten patients (03 women and 07 men) treated in the emergency and aesthetic unity of maxilla-facial department.

It was a descriptive and retrospective study over a period of two years from January 2018 to January 2020, in the Emergency and Maxillofacial Surgery Department of the University Hospital Center of

Casablanca.

The entire series had an identical indication for consultation, i.e. Interpersonal violence.

Patients who consulted for a facial injuries caused by a human bite that was surgically treated were included in the study.

The exclusion-criteria were, injuries caused by animals bites, and those that were not surgically treated.

The parameters studied were epidemiological (Age and Gender, Socioeconomic level and, geographical location, and circumstances of injuries); clinical (injury site, and Anti-tetanus vaccination coverage study of the patient); and therapeutic (management surgical-step, medico-surgical procedure, and evolution).

3. Results

Patient characteristics, technical considerations and results concerning their evolution with the procedure are reported in Table 1.

During the study period between January 2018 and January 2020, ten facial human bite injuries were treated in the emergency and Maxillofacial Surgery Department.

In this population, data of 10 surgically treated cases were collected.

Three of the participants were women and seven were men. The average age of the 10 patients enrolled in the study was 32.8 years,

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leading to a sex ratio of 2.3 (range, 18–50 years).

60% of the patients had a low socioeconomic level coming from rural areas. We define the socio-economic status by individual indicators: education, profession and income.

The injuries were all caused by interpersonal violence; due to the fights under alcohol effect (Table 1) Alcohol use at the time of the incident was documented (50%). the biters were wife or husband in three cases of whom one had psychiatric disorders (hysterical crisis). None of the perpetrators could be tested for any blood-borne diseases. (Fig. 1)

The clinical presentation of the treated injuries has been recorded in Table I. Anti-tetanus vaccination coverage was 100% more than period of 10 years. Early presentation and antibiotic prophylaxis administration reduces the risk of infection.

The treatment time was on average 24 h. Different surgical procedures were used to repair injuries. Six patients were treated under local anesthesia by one-step surgery (sutures).

In the other four cases (40%), the treatment was provided under general anesthesia with hospitalization for the implementation of frontal (two cases) and Karapandzic or nasolabial flaps (two-step surgery).

The follow-up fluctuated from seven days to six months. There were two cases of major surgical complications (necrosis). Slight infection was common during the first week postoperatively. The outcome was good in 6 cases (60%).

4. Discussion

The human bite injury is a deceptive wound. The potential for infective, functional, and aesthetic complications calls for rapid treatment in an appropriate setting. Human bite wounds are generally associated with male predominance and late-night-alcohol-fueled aggression [1,2]. This association was in line with our data (7 men versus 3 women).

The incidence of human bites is unknown [3] because most bites are associated with potentially embarrassing social circumstances such as quarrels or bad sexual behavior, which explains the high frequency of under-reporting [3,4].

Some high-risk contexts have been highlighted, such as an increased incidence in institutionalized patients (psychiatric history and poor impulse control), those likely to be bitten as a result of the occupational risk (law enforcement, institution staff) and more commonly in the context of late-night, alcohol-fueled aggression [5–7]. The actual directives call for the management of these injuries in the same way as any contaminated surgical wound.

Delayed arrival (>24 h) at the emergency department was also reported to be a factor associated with increased risk of infection. Both findings are consistent with previous studies [8].

It is essential to achieve satisfactory aesthetics, restoration of functions, and restoring normal anatomic relationship of the defaced facial subunit. Therefore, repair of the avulsed subunits of the face is based on the use of local flaps abutting or adjacent to the facial defect in small defects [9]. The advantages are good color, texture, and thickness match.

Table 1
Patient characteristics and results.

Patient	Age (yrs)	Gender	Socioeconomic level	circumstances	Injury site	Surgical procedure	Evolution
1	45	Male	Low	Alcohol fight	Auricle(pinna) amputation	Suture in one plan	Lost to follow-up
2	35	Male	Low	Conjugal abuse	Nose tip and alar wing	Forehead flap	Good
3	25	Female	Low	Neighbor violence	Auricle(pinna)	Suture in one plan	Necrosis
4	20	Female	Medium	Conjugal abuse	Nose tip	Nasolabial flap	Good
5	26	Male	Low	Alcohol fight	Nose tip and alar wing	Forehead flap	Good
6	50	Male	Medium	Alcohol fight	Cheek	Suture in two planes	Good
7	42	Male	Medium	Alcohol fight	Cheek	Suture in three planes	Infection
8	28	Male	Low	Conjugal abuse	Centro-facial (lower lip) total	Karapandzic flap	Good
9	39	Male	Medium	Neighbor violence	Auricle(pinna)	Suture in one plan	necrosis
10	18	Female	Low	Neighbor violence	Centro-facial (low lip) partial	Suture in three planes	Good

The use of the simple wedge-shaped closure was employed when less than a third of the lip was missing; this is also a guide for ala and pinna avulsion. In some of our patients, the evolutions were good with high level of satisfaction even when there was perceived tension of the wound (Fig. 2). A frontal flap was used in two cases for nose repair (Fig. 3). With the loss of ala, we found the nasolabial flap a better option. The defects presented were not massive enough to use composite flaps. The case of ear amputation was lost to follow-up.

For infected wounds, the duration of therapy depends on the severity of the infection. Most soft tissue infections require no more than 10–14 days of antibiotic administration (in our study the Amoxicillin–clavulanic acid 1000 mg every 8 h and metronidazole tablets 500 mg every 8 h are our first-line choice of antibiotics for 1 week) [10,11]. Several authors have debated whether the initial dose should be given parenterally to achieve adequate tissue levels [10].

Although most patients suffering from bite wounds can be treated on an ambulatory basis, 1%–2%, require hospitalization [12]. In addition to patients with extensive bite injuries or deep structure.

The surgical management of these injuries remains a controversial issue. As with all contaminated wounds, adequate lavage and debridement with antibiotic coverage remain the treatment of choice [13–15].

We admit that for such a study, it would be more beneficial to study case by case in order to properly expose the behaviors to be taken for each of the variations reported by each patient. The restitution of the loss of substance is essential as well as the aesthetic aspect that preoccupies the patient; this said the judgment of the patient's satisfaction needs more hindsight.

Nevertheless, our study remains judicious taking advantage of the approach of our service for these cases, and discussing the different behaviors reported in the literature that remain controversial depending on the school.

5. Conclusion

The restorative management and medical treatment of human bites remain a problem and controversial issue for the medical practitioner. There is consensus about tetanus prophylaxis in all patients, in contrast to prophylactic antibiotic treatment, which is questioned at least as a routine practice. Closure with sutures or the use of local flaps gives better aesthetic results. The problem is even more evident in our “modern times” with the increase of drug use and violence among the members of our society.

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Fig. 1. human bite injuries in a different facial site.



Fig. 2. A seven days follow up with a satisfying result.

Ethical approval

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Consent

Written informed consent was obtained from the patient for

publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Author contribution

Amine kaouani: Corresponding author writing the paper.
Rachid Aloua: Co-author writing the paper.
Ouassime kerdoud: writing the paper.
Iro Salissou: writing the paper.



Fig. 3. A three-month follow up with a good result.

Faiçal Slimani: Correction of the paper.

Registration of research studies

1. Name of the registry:
2. Unique Identifying number or registration ID: 6313
3. Hyperlink to your specific registration (must be publicly accessible and will be checked):

Guarantor

Amine kaouani.

Declaration of competing interest

Authors of this article have no conflict or competing interests. All of the authors approved the final version of the manuscript.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.amsu.2021.01.045>.

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