

Social animal bites in a non social way: A profile of human bite cases at GIMS, Kalaburagi (H-K region)

Sangamesh B. Tondare^{1*}, Shradha S. Maka², Ravindra Chimkode¹, Mahesh B. Tondare³ and E.R. Ashish⁴

¹Department of General Surgery, Gulbarga Institute of Medical Sciences and Teaching Hospital, Sedam Road, Veeresh Nagar Cross, Kalaburagi, Karnataka, India, ²Department of Obstetrics & Gynecology, Mother and Child Hospital, Basavakalyan, Dist. Bidar, Karnataka, India, ³Department of Community Medicine, Bidar Institute of Medical Sciences, Udgir Road, Bidar, Karnataka, India and ⁴AGM Eli-Lily, Bengaluru, Karnataka, India

Abstract: *Background:* Human bites in human beings are important injuries that constitute one of the emergency visits to the General surgery department. Human bite injuries may lead to infection, loss of function, and interpersonal relation. Human bites are usually under reported when they are between intimate partners and are reported due to assault by the biter or accidental injury. Infection and tissue damage make the management of human bites a challenge. Proper documentation and follow up is essential to prevent untoward complications. *Aims and Objectives:* The study was done to evaluate patients with regards to sex, clinical presentation, site, management and follow up. *Materials and Methods:* It is a prospective study carried out by department of General surgery at our institute for a period of 1 year. Patients were selected after taking history and examination. The patients were treated by conservative or surgical methods. The outcome and follow up was monitored. *Result:* The majority of the patients were males as victims and biter also as males. Human bites were common on upper limbs. Most of the patients were medico-legal cases treated by medical management but the follow up was very poor. *Conclusion:* Most of the patients are medico-legal cases with history of assault and human bite. Majority can be treated by medical management. With the availability of better facilities blood investigations, admission and surgical debridement should be done when there is complete breach of skin. Complications are minimal with surgical expertise.

Keywords: Human bite, Medico-legal case, Medical management.

Introduction

Man is by nature a social animal”
---Aristotle.

Humans are omnivorous with incisors, canines, molars and premolars. Human bites cause infection from oral contamination & tissue damage which makes the management of human bite injuries a challenge [1]. Human bite wounds have a bad reputation for severe infection and frequent complication. However, recent data demonstrate that human bites occurring anywhere other than the hand present no more of a risk [2]. Injuries to the hand can have a significant impact on the psychosocial well-being of a patient [3].

A notable subtype of human bite injury is the closed fist injury, often termed the “fight bite”, occurring when the subject attempts to punch another person and their fist strikes their

opponent’s teeth. Studies have suggested that closed fist injuries account for around 50% of human bite injuries to the hand [4].

Material and Methods

This observational clinical study of human bite patients coming to surgery department was carried out for a period of 1 year from December 2016 to November 2017. 51 patients presented with human bite. Patient parameters like Name, Age, Sex, Address, presenting complaints, Clinical findings, specific history of assault, accidental injury Etc., were collected. Patients were selected after they gave history of human bite and physical examination. Routine blood investigations like Hemogram, blood sugar levels and other investigations were done for admitted patients. Patients were categorized as

male & female for the victim and the biter, whether the bite was due to assault or accidental, site of bite, timing of presentation to the hospital after bite & admission to the hospital. The different modalities of treatment for the patients were medical (conservative) and surgical (debridement and suturing). Patients were followed till 4 weeks for surgical interventions and 2 weeks for medical management.

Postoperative care was meticulously followed for surgical patients to monitor complications. Medical management included treating the patient with oral antibiotics, analgesics and antacids. In patients with multiple bites the site where surgical intervention required was taken as the site for study and analysis. Patients were given different scorings based for different variables and the type of management underwent. The scoring system was followed for easy analysis of the data. Consent was obtained from all patients for data collection

Inclusion criteria:

- Patients treated on Outpatient basis and Inpatient basis.
- Multiple human bites.
- Human bites of all age groups.

Exclusion criteria:

- Patients with third gender.
- Bites on face referred to other centers
- Patients not willing to be part of study.

Statistical Methods Used:

- SPSS (Statistical package for Social Sciences).
- Chi square test.
- Frequency charting.

Results

Majority of patients were males.i.e.41, (Table 1). Amongst the total 51 patients, 34 were Medico legal cases (Table.2). Most of the patients had presented to hospital within 24 hrs (Table.3). Upper limbs were the most common site for human bites (n=32) (Table. 4). Hand was the specific site in upper limbs (n=24) (Table 5). Total number of patients with bite by male was 44 which included assault and accidental bites. Most of bites caused were due to intension of

causing harm to the opposite person. Majority of patients had not cleaned the wound. In this study 20 patients were admitted for treatment. 30 patients were treated by medical management and 21 by surgical treatment i.e., debridement, dressing & suturing. Post-operative complications were seen in 4 patients (wound infections). At the end of the study period, of the 51 patients 29 patients were lost to follow up.

Table-1: Frequency distribution of victims

Sex	Frequency	Percentage
Male	41*	80.4
Female	10	19.6
Total	51	100

Significant difference between male and female patients (P<0.05)

Table-2: Frequency distribution of Medico-legal cases (MLC)

MLC	Frequency	Percentage
Yes	34*	66.7
No	17	33.3
Total	51	100

Table-3: Frequency distribution of timing of bite to Arrival

Less <24 hrs	Frequency	Percentage
Yes	37*	72.5
No	14	27.5
Total	51	100

Significant difference of presentation to hospital within 24hrs (P<0.05)

Table-4: Frequency distribution of site of bites

Site	Frequency	Percentage
1	19*	37.3
2	13*	25.5
3	6	11.8
4	5	9.8
5	8	15.7
Total	51	100

(1-Right upper limb, 2-Left upper limb, 3-Left lower limb, 4-Right lower limb, 5-Other sites) Upper limbs were the common sites for Human bites.

Table-5: Frequency distribution of specific Sites

Site	Frequency	Percentage
Abdomen	1	2
Arm	6	11.8
Breast	1	2
Chest	1	2
F00t	2	3.9
F0rearm	2	3.9
Face	2	3.9
Hand	24*	47.1
Leg	3	5.9
Neck	1	2
Penis	2	3.9
Sh0ulder	1	2
Thigh	5	9.8
Total	51	100

Hand was the most common specific site for human bite in upper limbs

Discussion

Majority of the patients were males in our study [Fig.1]. In the study by Henry FP et al (2007) male gender were the common victims [5].

Fig-1: Showing bite in right scapular region of male patient.



In another study females were the common victims [6] (Fig.2). A notable type of human bite injury is the closed fist injury, often termed the “fight bite”, occurring when the subject attempts to punch another person and their fist strikes their opponent’s teeth. Studies have suggested that closed fist injuries account for around 50% of human bite injuries to the hand [4].

A total of 34 cases were Medico legal cases. The incidence of human bite injuries have been shown to be under reported as the victims may not wish to expose the circumstances that led to the bite especially when they occur between spouses and when there could be legal repercussions [7] (Fig.3), but in our study most of the patients had presented to hospital within 24 hrs.

Fig-2: Female patient with bite on breast.



Fig-3: Bite on finger of hand causing fracture with delayed presentation.



Human bite injuries involved more frequently the upper limbs [7]. Upper limbs were the most common site for human bites in our

study. A majority of patients presented with finger and hand injuries [8]. Hand was the specific site in upper limbs in our study. Perpetrators were male more often than females [6]. Total number of patients with bite by male was 44 which included assault and accidental bites. Majority of patients had not cleaned the wound, like other mammalian bites [9]. Human bites are also at high risk of infection, with a reported infection rate of 48% in untreated hand bites [10]. The complications associated with human bite injuries include infections which include tetanus and HIV [11]. The bacterial load of saliva has been estimated at 900×10^6 per ml which may explain the considerable infection rate [12]. Post-operative complications were seen in 4 patients (wound infections).

Medical management in our study included course of first line antibiotic as per the institute protocol in the form of Amoxicillin 500mg thrice daily for five days, analgesics, antacids, Injection Tetanus toxoid and cleaning the wound. Patients were counselled for VCTC for HIV. Surgical treatment included thorough debridement and suturing the wound depending upon the condition of wound. Bite injuries may be associated with skin and tissue loss requiring grafting and flap reconstruction. The challenges in managing human bite injuries include the wound care, prevention of infections including tetanus and treatment of the associated injuries [7]. Though primary closure of the wound is recommended in bites of the face, delayed primary closure and

secondary closure may be better options in other areas of the body especially when the wound is infected [13-14].

In the current study 30 patients were treated by medical management and 21 by surgical treatment. Patients were followed up at one week, two week and four weeks. At the end of the study after 1 year, a total of 29 patients were lost to follow up.

Conclusion

Most of patients are males when the bites are due to assault. Hand is the specific site in upper limbs, which are common sites for bites. Most of the patients are medico-legal cases with history of assault and human bite. Patients present to hospital within 24 hrs but do not clean the wound. Males are victim as well as perpetrator due to assault and accidental bites.

Human bites are caused due to intension of causing harm to the opposite person. Patients can be treated on OPD basis with medical management and surgical treatment i.e., debridement, dressing & suturing. Post-operative complications do occur in the form of wound infections. With the availability of better facilities, admission and surgical debridement should be done when there is complete breach of skin. A larger sample size may be required to conclude better.

References

- Liston PN, Tong DC, Firth NA, Kieser JA. Bite injuries: pathophysiology, forensic analysis, and management. *N Z Dent J.* 2001; 97(428):58-63.
- Griego RD, Rosen T, Orengo IF, Wolf JE. Dog, cat, and human bites: a review. *J Am Acad Dermatol.* 1995; 33(6):1019-1029.
- Malik A, Khan W. Recent advances and developments in hand surgery. *Open Orthop J.* 2012; 6(1):11-13.
- Merchant RC, Zabbo CP, Mayer KH, Becker BM. Factors associated with delay to emergency department presentation, antibiotic usage and admission for human bite injuries. *CJEM.* 2007; 9(6):441-448.
- 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):455-458.
- Freeman AJ, Senn DR, Arendt DM. Seven hundred seventy eight bite marks: analysis by anatomic location, victim and biter demographics, type of crime, and legal disposition. *J Forensic Sci.* 2005; 50(6):1436-1443.
- Ugwu BT, Editorial "Human Bite Injuries". *J West Afr Coll Surg.* 2016; 6(2):1.
- Tabbara M et al. Human bite wounds: a swiss emergency department experience. *Wounds.* 2012; 24(4):85-90.
- Sudarshan MK et al. An Epidemiological study of animal bites in India: Results of A WHO sponsored national Multi-centric Rabies survey. *J Commun Dis.* 2006; 38(1):32-39.
- 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):455-458.
- Vidmar L, Poljak M, Tomazic J, Seme K, Klavs I. Transmission of HIV-1 by human bite. *Lancet.* 1996; 347:1762-1763.

12. Mantilla Gomez S, Danser MM, Sipos PM, Rowshani B, van der Velden U, van der Weijden GA. Tongue coating and salivary bacterial counts in healthy/gingivitis subjects and periodontitis patients. *J Clin Periodontol.* 2001; 28(10):970.
13. Donkor P, Bankas DOA. Study of primary closure of human bite injuries to the face. *J of Oral and Maxillofacial Surgery.* 1997; 55(5):479-481.
14. Olaitan PB, Uduezue AO, Ugwueze GC, Ogbonnaya IS, Achebe UJ. Management of human bites of the face in Enugu, Nigeria. *Afr Health Sci.* 2007; 7(1):50-54.

Cite this article as: Tondare SB, Maka SS, Chimkode R, Tondare MB and Ashish ER. Social animal bites in a non social way: A profile of human bite cases at GIMS, Kalaburagi (H-K region). *Al Ameen J Med Sci* 2018; 11(1):66-70.

*All correspondences to: Dr. Sangamesh B Tondare, Assistant professor, Department of General Surgery, Gulbarga Institute of Medical Sciences and Teaching Hospital, Sedam Road, Veeresh Nagar Cross, Kalaburagi, Karnataka, India. Email: amith.sangamesh@yahoo.com