ORIGINAL RESEARCH PAPER

Volume-8 | Issue-6 | June-2019 | PRINT ISSN No. 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

THE PREVALENCE OF ASSOCIATED INJURIES WITH ISOLATED AND MULTIPLE MAXILLOFACIAL FRACTURES

Surgery

Dr. Sushma K N* Senior Lecturer, Oral & Maxillofacial Surgery, Vananchal Dental College & Hospital *Corresponding Author

Dr. Akhilesh Chandra Reader, Department of Oral and Maxillofacial Pathology

Dr. Praveen Kumar Oral & Maxillofacial Surgery, Vananchal Dental College & Hospital

Dr. Mayur Kahate Reader, Conservative Dentistry and Endodontia

Dr. Pankaj Rao Reader, Conservative Dentistry and Endodontia

Dr. Santosh Kumar Orthodontics & Dentofacial Orthopedics, Vananchal Dental College & Hospital

ABSTRACT

Facial trauma, also called maxillofacial trauma, is any physical trauma to the face. Symptoms of such trauma are specific to the type of injury; for example, fractures may involve pain, swelling, loss of function, or changes in the shape of facial structures. Associated fractures, a very important point, if neglected may lead to serious complications even proving fatal. When in doubt get a consultation and additional radiographs and then proceed with the treatment protocol. The objective of this study was to determine the presence of associated injuries in cases of maxillofacial trauma.

KEYWORDS

Trauma, fracture, head injury

INTRODUCTION

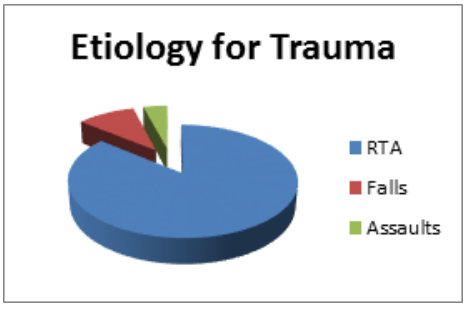
The leading cause of facial trauma used to be motor vehicle accidents, but this mechanism has been replaced by interpersonal violence; however auto accidents still predominate as the cause in developing countries and are still a major cause elsewhere. Thus prevention efforts include awareness campaigns to educate the public about safety measures such as seat belts and motorcycle helmets, and laws to prevent drunk and unsafe driving.[1] Other causes of facial trauma include falls, industrial accidents, and sports injuries. Maxillofacial trauma cases have increased over the past decade in India owing to highways, flyovers that allow drivers to move at a greater speed. Facial injuries occur in significant proportion in trauma patients requiring prompt diagnosis and management. The number of maxillofacial injuries is continuously increasing due to rise in traffic, and failure to take preventive measures in the traffic leads to road traffic accidents, which is the main etiological factor in maxillofacial fractures.[2] Facial and head lacerations and facial fractures were the leading associated injuries, occurring in more than half of the patients who have a mandible fracture. Closed head injury is the major life-threatening associated injury and cause of mortality.

Mandible fractures from motor vehicle collisions should never be viewed as an isolated injury but rather as part of a spectrum of significant and sometimes life-threatening injuries that require thorough trauma evaluation at the time of presentation. The maxillofacial injuries remain serious clinical problems because of its anatomical significance, i.e., important organs are located in this area and digestive and respiratory systems start from this area.[3] Due to anatomical proximity together with maxillofacial injuries, the damage to the central nervous system may occur and injuries in this region can result in serious dysfunction.

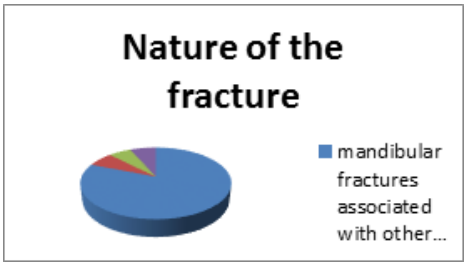
MATERIAL AND METHODS:

A total of 121 cases of trauma were recorded in the outpatient register of the Vananchal Dental College and Hospital in a period of 2 years. These cases also included the outpatient department of the Dental Unit of Vananchal Dental College and Hospital in Sadar Government Hospital, Garhwa. 104 of them were due to road traffic accidents, 12 due to falls and 5 due to assault. 113 out of them were male and the rest female patients. The age group of the patients ranged from 18 to 65 years. Out of the 121 patients, 98 of the patients had mandible fractures with associated cranial and other facial bone fractures which include nasal bone fracture, maxillary fractures (Le fort fractures), dentoalveolar fractures, 8 of the patients had isolated mandibular fractures (include single or multiple fracture of the mandible), 7 had isolated maxillary fractures (unilateral le fort I fractures , dentoalveolar fractures) and 8 of the cases had associated cranial bone fractures. These cases also had soft tissue injuries like subconjunctival hemorrhage, lacerations, abrasions, edema, ecchymosis, haemotoma, Battles' sign, etc., For all patients with suspected cranial/head injury, a neurosurgical consultation with CT scan Brain were advised. For rest of the maxillofacial fractures, final diagnosis was achieved with subsequent radiographs as and when needed. Protocol for the treatment of cases that were carried out, were based on the case history, patient compliance and economic concerns in consideration. The treatment rendered include closed reduction by inter maxillary fixation, open reduction and internal fixation. The aim of the study

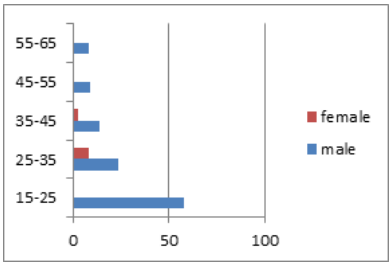
RESULTS



Graph 1 Etiology for maxillofacial trauma



Graph 2 distribution of surgical anatomy of fractures



Graph 3 Age wise and gender distribution of the patients

Based on the above statistical data, it shows that in a period of two years, 87.6% of trauma patients had associated fractures of adjacent facial bones (nasal, maxillary, Zygomatic, mandibular, orbital, frontal).

DISCUSSION

Road traffic accidents have been steadily falling in the developed countries; they continue to rise with the horrifying speed in the low- and middle-income countries of Africa and Asia. It is the major cause of death in India. The majority of the accidents results due to speeding and legislation. Alcoholism is associated with road traffic accidents internationally.[4,5] Bad road conditions also play an important role in RTA but some studies reported more RTAs on well paved and broad roads.

In our study, Fractures have been treated by a series of methods including close reductions, internal fixation, and circum-mandibular wiring. Adeyemo W stated that the IMF self-drilling/tapping screws has been shown to be a useful modality to establish maxillomandibular fixation.[5] In our study, there was no infection, non-union, mal union, or any functional disability reported in the patients who received inter maxillary fixation for 4-6 weeks. Mouth opening was normal in all patients. Temporomandibular joint stiffness was reported during first week of after releasing IMF which comes normal after a week with physiotherapy.

31 YEAR OLD MALE PATIENT MET WITH ROAD TRAFFIC ACCIDENT

Facial trauma can involve soft tissue injuries such as burns, lacerations and bruises, or fractures of the facial bones such as nasal fractures and fractures of the jaw, as well as trauma such as eye injuries.[6,7,8] Facial injuries have the potential to cause disfigurement and loss of function; for example, blindness or difficulty moving the jaw can result. Although it is seldom life-threatening, facial trauma can also be deadly, because it can cause severe bleeding or interference with the airway; thus a primary concern in treatment is ensuring that the airway is open and not threatened so that the patient can breathe.[9,10] Depending on the type of facial injury, treatment may include bandaging and suturing of open wounds, administration of ice, antibiotics and pain killers, moving bones back into place, and surgery. When fractures are suspected, radiography is used for diagnosis. Treatment may also be necessary for other injuries such as traumatic brain injury, which commonly accompany severe facial trauma.[11,12,13]

The aim of this study was to find out the incidence and pattern of maxillofacial injuries resulting from various etiological factors and treatment modalities and their complications. The maxillofacial injuries remain serious clinical problems because of its anatomical significance, i.e., important organs are located in this area and digestive and respiratory systems start from this area. Due to anatomical proximity together with maxillofacial injuries, the damage to the central nervous system may occur and injuries in this region can result in serious dysfunction.

It should always be kept in mind that trauma cases involving the maxillofacial region are usually not isolated fractures of a single bone. They will more times be associated with adjacent bones that may also involve the cranial bone to the extent leading to traumatic brain injury.[14,15]However despite the professional and commercial interest in open reduction and semi-rigid fixation, we should think about patient's interest affordability and well-being.[16,17] Conservative management should not be overlooked when indicated. Sometimes, patients' general condition, neurosurgical conditions, spinal injuries, medically compromised patients should be treated with conservative treatment.[18] It is very cost effective, reduces hospital stay, or even no need for hospitalization. Only dietary restrictions due to mouth closure and patient compliance are limitations. In few patients like epileptic, we cannot use inter maxillary fixation for the management of maxillofacial trauma in minimally displaced fractures.

Several studies have reported the relationship among craniomaxillofaial fractures, cervical spine injuries, and head injuries with varying results.[12,17] Life threatening injuries to the head and cervical spine with devastating consequences cannot be missed by oral maxillofacial surgeons during the evaluation of facial trauma. This study establishes the prevalence of associated head injuries with isolated and multiple cranio-maxillo-facial fractures at trauma centers.

CONCLUSION:

It is always beneficial to be sure and rule out the associated injuries, be it head injury, traumatic brain injury, soft tissue injuries or any other fractures. It may happen that the outcome of the associated injuries could be more threatening and fatal than the obvious maxillofacial trauma. For both the patients and the clinician's point of view it is considered to be a wiser idea to be absolutely sure of adjacent or associated fractures or injuries to make sure that treatment protocol routine follows the order of prime concern first to avoid fatal complications. As the saying goes "BETTER BE SAFE THAN SORRY"

REFERENCES

1. Vibha Singh et al : The maxillofacial injuries: A study : Natl J Maxillofac Surg. 2012 Jul-Dec; 3(2): 166–171
2. Gassner R, Tuli T, Hächl O, Rudisch A, Ulmer H. Cranio-maxillofacial trauma: A 10 year review of 9,543 cases with 21,067 injuries. J Craniomaxillofac Surg. 2003;31:51–61. [PubMed: 12553928]
3. Gupta R, Suryanarayan S, Sharma A, Pandya V, Sathaye S. Traumatic mandibular fractures: Pendulum towards closed reduction. The World Articles in Ear, Nose and Throat. 2010;3:1–3.
4. Al Ahmed HE, Jaber MA, Abu Fanas SH, Karas M. The pattern of maxillofacial fractures in Sharjah, United Arab Emirates: A review of 230 cases. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2004;98:166–70. [PubMed: 15316543]
5. Malara P, Malara B, Drugacz J. Characteristics of maxillofacial injuries resulting from road traffic accidents—A 5 year review of the case records from Department of Maxillofacial Surgery in Katowice, Poland. Head Face Med. 2006;2:27. [PMCID: PMC1564383] [PubMed: 16938135]
6. Adeyemo WL, Ladeinde AL, Ogunlewe MO, James O. Trends and characteristics of oral and maxillofacial injuries in Nigeria: A review of the literature. Head Face Med. 2005;1:7. [PMCID: PMC1277015] [PubMed: 16270942]
7. Motamedi MH. An assessment of maxillofacial fractures: A 5-year study of 237 patients. J Oral Maxillofac Surg. 2003;61:61–4. [PubMed: 12524610]

8. Ajmal S, Khan MA, Jadoon H, Malik SA. Management protocol of mandibular fractures at Pakistan Institute of Medical Sciences, Islamabad, Pakistan. J Ayub Med Coll Abbottabad. 2007;19:51–5. [PubMed: 18444592]
9. Danda AK, Muthusekhar MR, Narayanan V, Baig MF, Siddareddi A. Open versus closed treatment of unilateral subcondylar and condylar neck fractures: A prospective, randomized clinical study. J Oral Maxillofac Surg. 2010;68:1238–41. [PubMed: 20303209]
10. Adeyemo WL, Ladeinde AL, Ogunlewe MO, James O. Trends and characteristics of oral and maxillofacial injuries in Nigeria: A review of the literature. Head Face Med. 2005;1:7. [PMCID: PMC1277015] [PubMed: 16270942]
11. El-Degwi A, Mathog RH. Mandible fractures—Medical and economic considerations. Otolaryngol Head Neck Surg. 1993;108:213–9. [PubMed: 8464632]
12. Lawoyin DO, Lawoyin JO, Lawoyin TO. Fractures of the facial skeleton in Tabuk North West Armed Forces Hospital: A five year review. Afr J Med Med Sci. 1996;25:385–7. [PubMed: 9532313]
13. Blitz M, Notarnicola K. Closed reduction of the mandibular fracture. Atlas Oral Maxillofac Surg Clin North Am. 2009;17:1–13. [PubMed: 19237122]
14. Marker P, Nielsen A, Bastian HL. Fractures of the mandibular condyle. Part 2: Results of treatment of 348 patients. Br J Oral Maxillofac Surg. 2000;38:422–6.[PubMed: 11010767]
15. Abreu ME, Viegas VN, Ibrahim D, Valiati R, Heitz C, Pagnoncelli RM, et al. Treatment of comminuted mandibular fractures: A critical review. Med Oral Patol Oral Cir Bucal. 2009;14:E247–51. [PubMed: 19218899]
16. Fordyce AM, Lalani Z, Songra AK, Hildreth AJ, Carton AT, Hawkesford JE. Intermaxillary fixation is not usually necessary to reduce mandibular fractures. Br J Oral Maxillofac Surg. 1999;37:52–7. [PubMed: 10203223]
17. Peter W, Stephen A, Schendel, Jag-Erich H. 2nd ed. Vol. 1. Churchill Living Stone Elsevier Ltd; 2007. Maxillo Facial Surgery.
18. Worsaae N, Thorn JJ. Surgical versus nonsurgical treatment of unilateral dislocated low subcondylar fractures: A clinical study of 52 cases. J Oral Maxillofac Surg. 1994;52:353–60. [PubMed: 8133366]