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Etiology of facial fractures in 398 patients treated in Baghdad

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Abstract

Background: Since the face is the most visible part of the human body, it has great aesthetic significance. It also regulates crucial processes including speech and chewing.

Method: The investigation was done at Alshaheed Ghazi Alhariri Specialized Surgery Teaching Hospital and Medical City Complex. Two researchers reviewed 398 oral and maxillofacial surgery patients' hospital records and radiographs from January 2022 to January 2023. The same portion treated all facial fractures. Fractures were characterized by age, sex, anatomical location, and injury aetiology. Anatomical position was utilized to diagnose mandibular fractures by Ivy and Curtis. Maxillary fractures were anatomically identified and classified using Le Fort. Open reduction and internal fixation or closed therapy were employed to classify the fractures.

Results: In a study of 398 patients, road traffic accidents were the most common cause of injury, leading to various fractures with mandibular fractures being the most frequent. The majority of these fractures were treated using open reduction and internal fixation. The study highlighted the prevalence and treatment approaches for different types of facial fractures.

Conclusion: The findings showed that transport accidents caused the most face fractures at Alshaheed Ghazi Alhariri specialized surgical teaching hospital / medical city complex. Sex and aetiology affect men and women's roles and facial trauma features. Men were more impacted than women, particularly young individuals (20-29 years), with the mandibular bone broken first, followed by the zygomatic and nasal bones.

Keywords: Etiology, facial, fractures, Baghdad

Introduction

Since the face is the most visible part of the human body, it has great aesthetic significance. It also regulates crucial processes including speech and chewing. Severe facial fractures may result in life-threatening complications such trouble breathing. Fractures of the face may result in both functional and cosmetic abnormalities, depending on the circumstances and treatment plan. Their influence on social functioning may be very detrimental [1]. In order to lessen the effects of post-fracture sequelae, he must be able to handle crises and conduct acceptable aesthetic and functional restoration as a maxillofacial surgeon who routinely treats face injuries. Important recommendations for the prevention and treatment of future fractures are provided by the examination of the kinds and causes of face fractures. Consequently, this topic has been the subject of several studies [2]. The fracture type has shifted from simple to complicated in several studies of face fractures as a result of growing traffic, population growth, and industrial diversification. Car accidents and robbery are the most frequent causes of face fractures [3-5]. However, the current investigations have produced contradictory findings because of the various study methodologies used by the investigators as well as the social, geological, and chronological variations among the individuals. Contrary [6, 7]. As a result, consistent data should be updated in accordance with regional and seasonal patterns. In oral and maxillofacial surgery clinics, patients with maxillofacial trauma are among the most often encountered cases. Maxillofacial fractures can result in major disease, functional disability, deformity, and high medical expenses [8, 9]. Adekeye claims that the population's increased participation in socioeconomic activities and heavy reliance on automobile traffic are to blame for the rise in both the incidence and severity of maxillofacial trauma [10, 11]. Damage to the soft and hard tissues of the facial extension, extending from the frontal bone above to the lower jaw, is referred to as maxillofacial trauma.

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They range from little rips in the tissue to intricate maxillary bone fractures [13, 12]. Oral and maxillofacial surgeons continue to face difficulties in managing lesions of the maxillofacial complex, which call for both skill and knowledge [14-16].

Material and Methods

The Alshaheed Ghazi Alhariri Specialized Surgery Teaching Hospital and Medical City Complex served as the study's location. Two investigators examined the hospital records and radiographs of 398 patients who received care from the oral and maxillofacial surgery division between January 2022 and January 2023. The same section handled treatment for every face fracture. The fractures were classified based on the patient's age, sex, and anatomical location as well as the injury's aetiology. The technique outlined by Ivy and Curtis [17] was used

to classify the mandibular fractures based on their anatomic position. Maxillary fractures were anatomically located and categorized using the Le Fort [18-20] approach. The fractures were further categorized based on the methods of treatment used, such as open reduction and internal fixation techniques or closed therapy.

Result

A total number of 398 patients (298 male, 100 female) aged between 1 and 86 years old were enrolled in this study. Road traffic accident dominant all other causes of injury in 292 cases (73.4%), where fall from height came second cause of injury in 56 cases (14.1%), while the blast injury and personal interaction came at last in 47 cases (11.8%) and 3 cases (0.8%) respectively. As seen in chart 1.

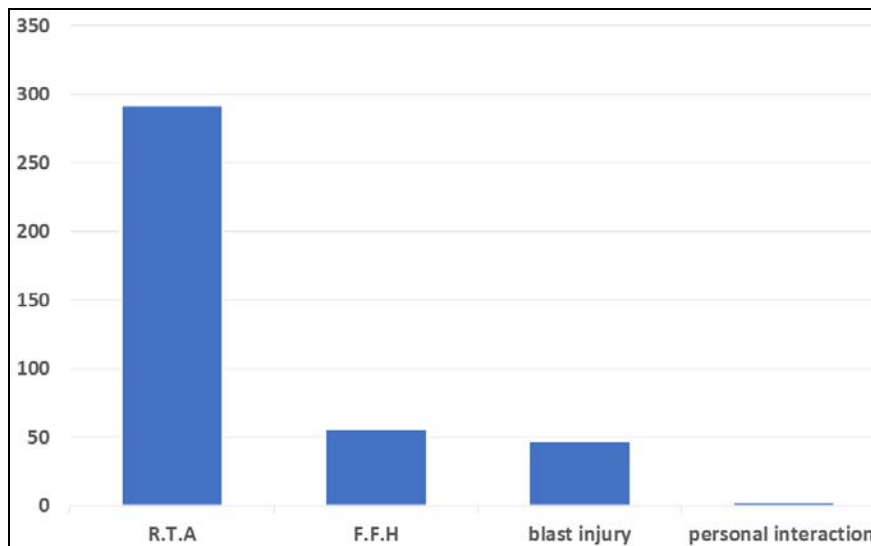


Chart 1: The etiology of facial fractures

The fractures identified according to anatomic location, mandibular fracture was dominant in 193 cases (48.5%), second came zygomatic fracture in 82 cases (20.6%), nasal fracture

came third in 50 cases (12.6%), while Lefort fracture came forth in 47 cases (11.8%), and orbital fracture came last in 25 cases (6.3%) as seen in chart 2.

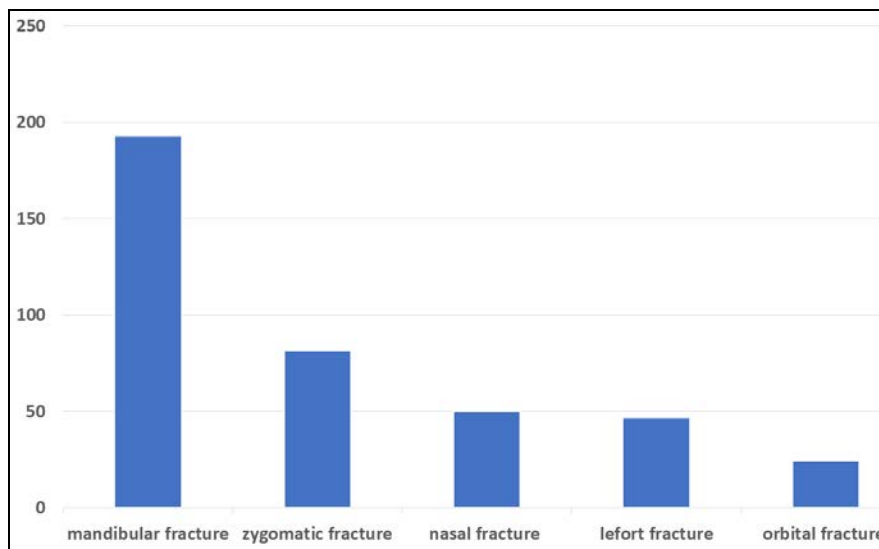


Chart 2: Anatomical distribution of facial fractures

Mandibular fractures (193 cases) further classified according to the system described by Ivy and Curtis. Fracture of body of mandible was dominant in 121 cases (62.7%), para symphysis mandibular fracture came second in 26 cases (13.5%), came

third condyle fracture in 21cases (10.9%), while angle of the mandible came forth in 19 cases (9.8%) and symphyseal fracture came last in 6 cases (3.1%) as seen in chart 3.

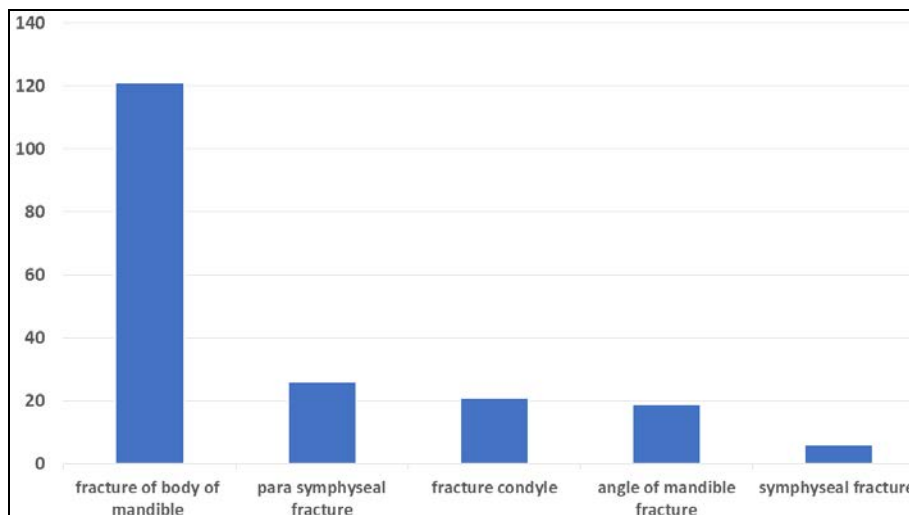


Chart 3: Anatomical distribution of mandibular fracture

Treatment of 398 cases fall in to 2 categories, open reduction and internal fixation dominant in 322 cases (80.9%) and closed treatment protocol applied in 76 cases (19.1%) as seen in chart 4.

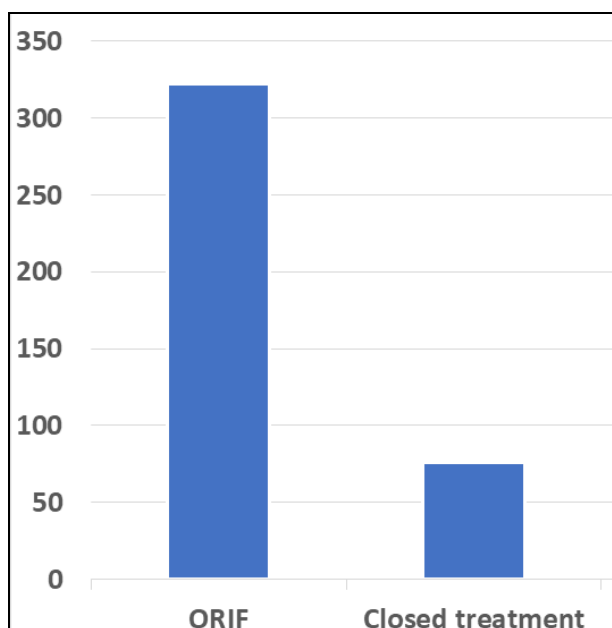


Chart 4: Treatment of facial fractures

Discussion

Epidemiological studies are essential for establishing guidelines to prevent facial trauma. In this study, we note that the youth category was the most affected, the age average was 24 years old and this is logical because they are more fearless, are more likely to being involved in risky situations by alcohol abuse, dangerous driving and interpersonal violence [21-23]. Our research showed a strong prevalence of men involvement in maxillofacial trauma [4]. This result is probably since men participate more actively in social activities and are consequently more susceptible to traffic accidents, interpersonal violence, accidents at work and during the practice of sports and this result is similar to those of Sherer *et al.* [24]. In the present study, we also note that traffic-related accidents stand out, which represent more than 50% of the sample followed by fall from height accidents. This observation agree the results of Braustein1. There is a tendency to reduce traffic accidents in many countries due to the

application of stricter laws regarding the use of helmets and implementation of driving under the influence laws [25].

The fracture sites with the highest frequency of involvement vary according to the survey period, geographic location and trauma mechanism. In the present study, fractures of the mandible was the most frequent and similar results can be found in the literature. In contrast, other researchers report zygomatic and nasal bones fractures as the main site affected (Massuia *et al.*, 2015).

These results emphasize the need for public policies looking to make population aware of traffic laws and the use of personal protective equipment. The study and dissemination of data related to the epidemiology of facial trauma is extremely important for the development of new guidelines in order to prevent new injuries, education and systematization of care [26-28]. It is worth noting that in such instances, open reduction internal fixation (ORIF) therapy was used more often than closed treatment. Because of its direct visualization of the joint surface and ease of implementation, ORIF remains the first-line therapy for completely displaced and rotated lateral condyle fractures. Furthermore, as CRIF is less intrusive and may reduce complications, it could be a practical choice for treating these kinds of fractures. However, consideration must be given to CRIF's technological challenges [29-31].

Conclusion

The results presented lead us to conclude that accidents involving means of transport were the most common cause associated to facial fractures of patients seen at Alshaheed Ghazi Alhariri specialized surgeries teaching hospital / medical city complex. Sex and etiological factors have an important relation to the role and activities of men and women in society, as well as the characteristics of facial trauma. Men were more affected than women, especially young adults (20-29 years), with the most fractured bones being the mandibular bone followed by the zygomatic and later by the bones of the nose.

Conflict of Interest

Not available

Financial Support

Not available

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