

Incidence of facial soft tissue injuries among patients attending surgical casualty reception in Rojh-halat emergency hospital.

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Abstract

Background and objective: Facial soft-tissue injuries are the most common injuries presenting to surgical casualty reception. The present study aimed to provide a preliminary data base about the distribution, type, pattern and etiology of facial soft tissue injuries.

Methods: In a prospective clinical study all patients with facial injury were enrolled in this study, over a ten months period (from 1st October 2010- 1st July 2011), who attended Surgical Casualty Reception in Rojh-halat Emergency Hospital. A questionnaire was used to collect patients' database and relevant information. The wound configuration was divided as laceration, abrasion and contusion as well as the site of facial soft tissue injuries were recorded using the modified MCFONTZL system.

Results: A total of 168 patients with facial soft tissue injuries were received and managed at Surgical Casualty Reception in Rojh-halat Emergency Hospital. The age of the patients were ranged from 1-80 years old. Most of the patients were within the age range of 1-10. Male patients constitute 62.5% of the cases. The most common etiology of facial soft tissue injury was falls. Regarding type of the injury, laceration was the most common type. The lips and chin region were mostly involved.

Conclusion: Fall is the most common cause of facial injury. Lower third of the face is mostly involved. road traffic legislations have a role in decreasing road traffic accidents.

Keywords: face, soft tissue, injury

Introduction

Soft-tissue injuries with or without facial bone involvement are the most common presentation following maxillofacial trauma¹. The management of acute soft-tissue trauma can be very challenging for the facial plastic surgeon. The goals of management of facial trauma are the preservation of form and function. These goals are particularly important in facial soft-tissue trauma, where injuries can cause not only esthetic deformities but also can affect neural function, normal mastication, visual fields, and salivary outflow². Soft-tissue trauma of the face can contribute to airway compromise if there is significant edema. In addition to the airway, facial trauma can also play a role in circulatory compromise if significant hemorrhage occurs³. There

have been comparatively few reviews of craniofacial trauma which have included soft tissue injuries^{1,4}. Most studies on craniofacial trauma have concentrated on fractures⁵⁻⁷. The aetiology of maxillofacial trauma in developed countries has changed drastically, shifting from road-traffic accident (RTA) to assault and fall over the past decade⁴. The MCFONTZL classification system is a simple and clinically applicable method for the complete assessment of trauma-related soft-tissue injuries to the face. This classification system allows the user to record the precise location of injury by dividing the face into 12 distinct zones based on an established concept of aesthetic units. MCFONTZL is a mnemonic device in which each letter represents the first letter of the names of

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the zones that divide the face according to aesthetic units: M, maxilla; C, chin; F, forehead; O, orbit; N, nose; T, temple; Z, zygoma; and L, lip). Intraoral lacerations are not included in the MCFONTZL classification system⁸. Hussaini et al¹, had modified the MCFONTZL classification system by excluding the temple (scalp) injuries. No study had been published in our region regarding the incidence of facial soft tissue injuries. So the present study aimed to provide a preliminary data base about the distribution, type, pattern and etiology of facial soft tissue injuries.

Methods

In a prospective clinical study all patients who sustained facial injury were sequentially enrolled in this study, over a six months period (from 1st October 2010- 1st July 2011), who attended Surgical Casualty Reception in Rojh-halat Emergency Hospitals. a questionnaire was used to collect patients' database and relevant information. data regarding history of trauma, age, gender, and etiology of injury were recorded. The etiology of injuries was divided into RTA, fall, and others. detailed information regarding the type and the site of the wound were collected and the wound was divided into laceration, abrasion and contusion. Facial soft tissue injuries were recorded using the modified MCFONTZL system used by Hussini et al¹. Figure 1. Patients with deep penetrating injuries were questioned regarding their tetanus immunization status and updated when necessary. A thorough examination of the facial skin, eyes, ears, nose, lips, cheeks, Stensen's ducts and cranial nerves were performed. Posteroanterior, lateral skull views were used for examination of possible coincident facial bone fracture and to detect any foreign body. descriptive statistical methods were used to analyze the collected data.

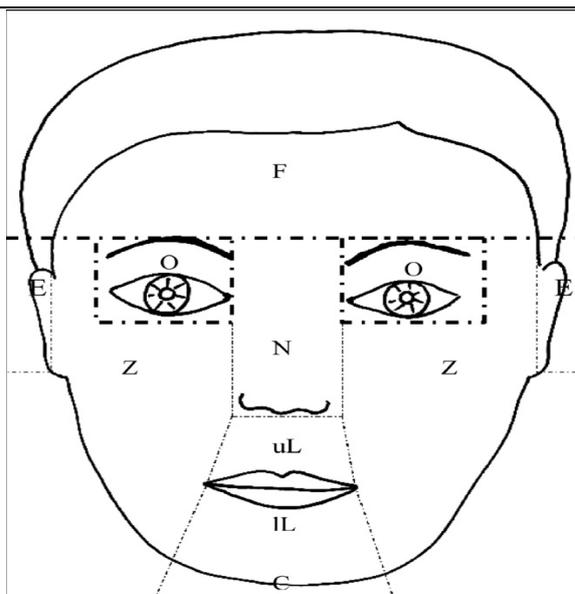


Figure 1: Modified MCFONTZL classification of soft-tissue injury. F: forehead; O: orbit; C: chin; N: nose; L: lip (upper and lower); E: ear; Z: zygoma.

Results

A total of 168 patients with facial soft tissue injuries were received and managed at Surgical Casualty Reception in Rojh-halat Emergency Hospital. The age of the patients were ranged from 1-80 years old. Most of the patients were within the age range of 1-10 years. The age distribution of the patients is shown in Table 1. Male patients constitute about 62.5% of the cases, while female patients constitute 37.3% with a male to female ratio of 1:1.66, Table 1.

Table 1: Age and gender distribution

Age/year	Male	Female	Total	Percent
0-9	31	23	54	32.14
10-19	15	11	26	15.47
20-29	25	13	38	22.61
30-39	14	8	22	13.1
40-49	11	5	16	9.52
50-59	5	2	7	4.16
60-69	3	1	4	2.4
70-79	1	0	1	0.6
Total	105	63	168	100

The most common etiology of facial soft tissue injury was falls, followed by road traffic accidents (RTA), Table 2.

Table 2: Distribution of etiology of facial soft tissue injuries

Etiology	No.	Percent
Falls	79	47.02
RTA	45	26.8
Sharp instruments	28	16.66
Others	16	9.52
Total	168	100

Regarding type of the injury, laceration was the most common, Table 3.

Table 3: Types of facial soft tissue injuries

Type of injuries	No.	Percent
Abrasion	39	23.22
Contusion	17	10.12
Laceration	112	66.66
Total	168	100

Figure 2 shows the anatomic distributions of the injuries according to modified MCFONTZL system. the facial soft tissue abrasion cases were managed by a thorough cleansing with copious saline irrigation, to remove all particles of foreign matter, and topical antibiotic ointment. contusion cases were assured that their body will resolve the condition within several days and that there is no need for antibiotic drugs since the skin surface is not disruption. laceration cases were managed by 1. Cleansing with copious saline irrigation, 2. Limited debridement, 3. Haemostasis, 4. Closure of the wound in layer by using absorbable sutures for muscle layers and 5-0 nylon for skin suturing to give better esthetic appearance and, 5. Dressing.

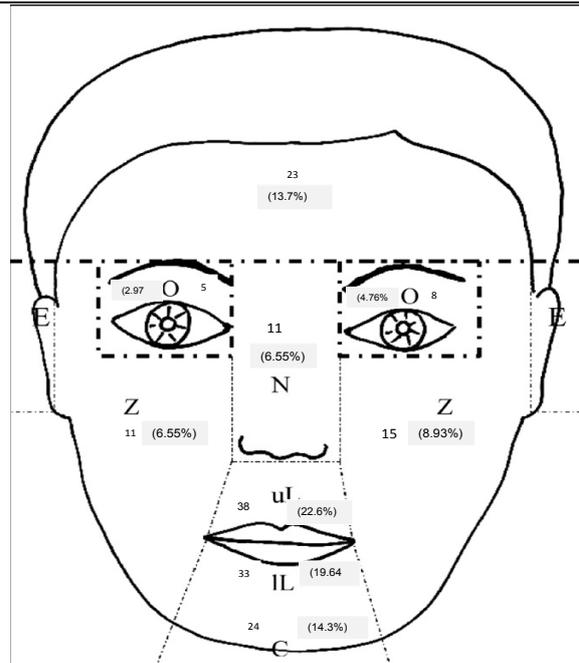


Figure 2: Anatomic distribution of facial soft tissue injuries

Discussion

An understanding of the etiology, severity, and distribution of maxillofacial trauma can aid in establishing clinical and research priorities for effective treatment and prevention of these injuries. Continuous long-term collection of data regarding the epidemiology of maxillofacial trauma is important because it provides information necessary for the development and evaluation of preventative measures for reducing the incidence of facial injuries^{9,10}. In the present study we found a male predominance in facial soft tissue injury in all age groups. Similar results were reported by other studies^{1,11,13,14}. This lower ratio in women may be due to the fact that lower number of women is having jobs in our society and/or the very characteristic of females being more careful in any activity they participate in¹⁵. In the current study most of the patients were within the age range of 1-10 years old and most of the injuries were caused by falls. Several factors contribute to the significantly higher incidence of falls in the younger age group: (i) With decreasing age, insecurity

of motion and balance increases. (ii) awareness of facial appearance and its social importance increases with age. During a fall, older children and adolescents may be more likely to consider shielding their face. (iii) Young children are less aware of danger and, therefore, are much less considered in their actions^{12,18}. The most common etiology of facial soft tissue injury in our region was falls, followed by road traffic accidents. This figure is seen in many studies^{1,9,10,16-19}. Because of legislative changes and preventative measures involving seatbelt and airbag use, as well as the speed limit setting, MVC-related facial injuries have decreased in our society, and falls have emerged as the predominate mechanisms of facial trauma. Regarding type of the injury, laceration was the most common type of injury and a similar result was reported by Hussaini et al^{1,11,18}. Most of the injuries were found in lips and chin region which was similar to that reported by Hussaini et al¹ and, Shaikh and Worrall¹¹. In contrast Ong and Dudley¹⁸ showed that the upper third of the face was the most affected area in soft-tissue injury and the possible explanation is that socioeconomic and cultural differences and differential exposure to injury risk factors contribute to variations in the pattern of facial soft tissue injuries between countries¹⁹. To our knowledge the management protocol for facial soft tissue injuries is the same in all studies. The current study focused on the incidence and distribution of the facial soft tissue injuries rather than the trends of treatment. This study suggests more future studies in this regard in Iraqi Kurdistan region as a whole epidemiology and comparison studies between different treatment trends to provide best preventive and treatment methods.

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