

Evaluation of Impact of Trauma and Surgical Treatment on the Quality of Life of Patients

Dr. Ritesh Vatsa, Assistant Professor, Department of Dentistry, Sri Krishna Medical College & Hospital, Muzaffarpur, Bihar, India

Dr. Shubham Kumar, Senior Resident, Department of Dentistry, Sri Krishna Medical College & Hospital, Muzaffarpur, Bihar, India*

Dr. Saurav Kumar, Senior Lecturer, Department of Orthodontics and Dentofacial Orthopaedics, Mithila Minority Dental College & Hospital, Darbhanga, Bihar, India

Dr. Nadira Hassan, Private Practitioner, Ara, Bhojpur, Bihar, India

Dr. Sabika Mazhar, Consultanat Pedodontist, Kishanganj, Bihar, India

Dr. Rafi Ahmed, Consultant Prosthodontist, Kishanganj, Bihar, India

Corresponding Author Details:

Name : Dr. Shubham Kumar
Designation : Senior Resident
Address : Department of Dentistry, Sri Krishna Medical College & Hospital, Muzaffarpur, Bihar, India
E-mail ID : dr_shubham87@hotmail.com

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Running title: Surgical treatment & quality of life

ABSTRACT

Background: Facial trauma is considered one of the most devastating events in a patient's life as it usually results in physiognomic deformities and possible emotional consequences. The present study was conducted to assess the impact of oral and maxillofacial trauma and surgical treatment on the quality of life of patients with maxillofacial trauma.

Materials & Methods: 130 patients with facial trauma were subjected to OHIP-14 questionnaire (Oral Health Impact Profile–short form) was applied to participants in order to evaluate their quality of life. The OHIP-14 was applied three times during the 90-day follow-up: immediately after diagnosis of the trauma (T1) and 30 days after the day of surgery or indication for conservative treatment (T2). The possible response to each question was 'never', 'rarely', 'sometimes', 'repeatedly', or 'always'; these were scored as 0, 1, 2, 3, and 4,

Results: Out of 130 patients, males were 70 and females were 60. Common type of fracture was mandibular in 50, zygomatic in 30, Le-fort I in 16, nasal in 14 and multiple facial bone in 20 cases. A significant difference was found immediately after trauma and 30 days after trauma. The difference was significant ($P < 0.05$).

Conclusion: There was improvement in quality of life after management of facial trauma.

Keywords: facial trauma, Le-fort I, Quality of life

Introduction

Facial trauma is measured one of the most overwhelming events in a patient's life as it usually results in physiognomic distortions and possible sensitive consequences.¹ There have been increase in occurrence of facial trauma during the last few decades. Currently, it is believed that the main aetiological factors are alcohol and drug use, car accidents, and increasing urban violence. However, the occurrence of these factors varies greatly according to the region studied.²

The diagnosis of maxillofacial fractures can be challenging, as haematoma and swelling can mask the extent of the underlying injury. Overseeing a fracture may not have immediate outcome, but can result in disfigurement and permanent disability. Not only does this result in a disgruntled patient, it may affect their ability to continue to perform their occupation.³

Assault is the leading cause of facial fractures followed mostly by motor vehicle accidents, pedestrian collisions, stumbling, sports and industrial accidents but the leading cause shifts to road traffic accidents in underdeveloped or developing areas of the world followed by assaults and other reasons including warfare.⁴

Airway compromise, major haemorrhage and visual loss are the key problems to rule out on initial assessment. Accurate assessment is vital. Head trauma with involvement of the neurocranium may lead to unconsciousness, amnesia, nausea, post-traumatic headache or dizziness.⁵ The severity of this can be assessed using the Glasgow Coma Score (GCS). Injuries affecting the GCS need immediate referral to a hospital emergency department. The Oral Health Impact Profile (OHIP) questionnaire is one of the most commonly used instruments; it has been used in various studies across different cultures and socio-demographic profiles.⁶ The present study was conducted to assess the impact of oral and

maxillofacial trauma and surgical treatment on the quality of life of patients with maxillofacial trauma.

Materials & Methods

The present study comprised of 130 patients with facial trauma of both genders. The study was conducted at a government medical college of Bihar after obtaining the institutional ethical clearance. All the patients were informed regarding the study and their consent was obtained.

Data such as name, age, gender etc. was recorded. A careful oral examination was performed. A validated version of the OHIP-14 questionnaire (Oral Health Impact Profile–short form) was used to assess quality of life. The OHIP-14 was applied immediately after diagnosis of the trauma (T1) and 30 days after the day of surgery or indication for conservative treatment (T2). The possible response to each question was ‘never’, ‘rarely’, ‘sometimes’, ‘repeatedly’, or ‘always’; these were scored as 0, 1, 2, 3, and 4. The score for each item for each individual was added up and the final score obtained (score range 0–56). The mean OHIP-14 score was calculated for each type of fracture. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

Results

Table I Distribution of patients

Total- 130		
Gender	Males	Females
Number	70	60

Table I shows that out of 130 patients, males were 70 and females were 60.

Table II Type of fracture

Fracture	Number	P value
Mandibular	50	0.04
Zygomatic	30	
Le-fort I	16	
Nasal	14	
Multiple facial bone	20	

Table II, graph I shows that common type of fracture was mandibular in 50, zygomatic in 30, Le-fort I in 16, nasal in 14 and multiple facial bone in 20 cases. The difference was significant ($P < 0.05$).

Graph I Type of fracture

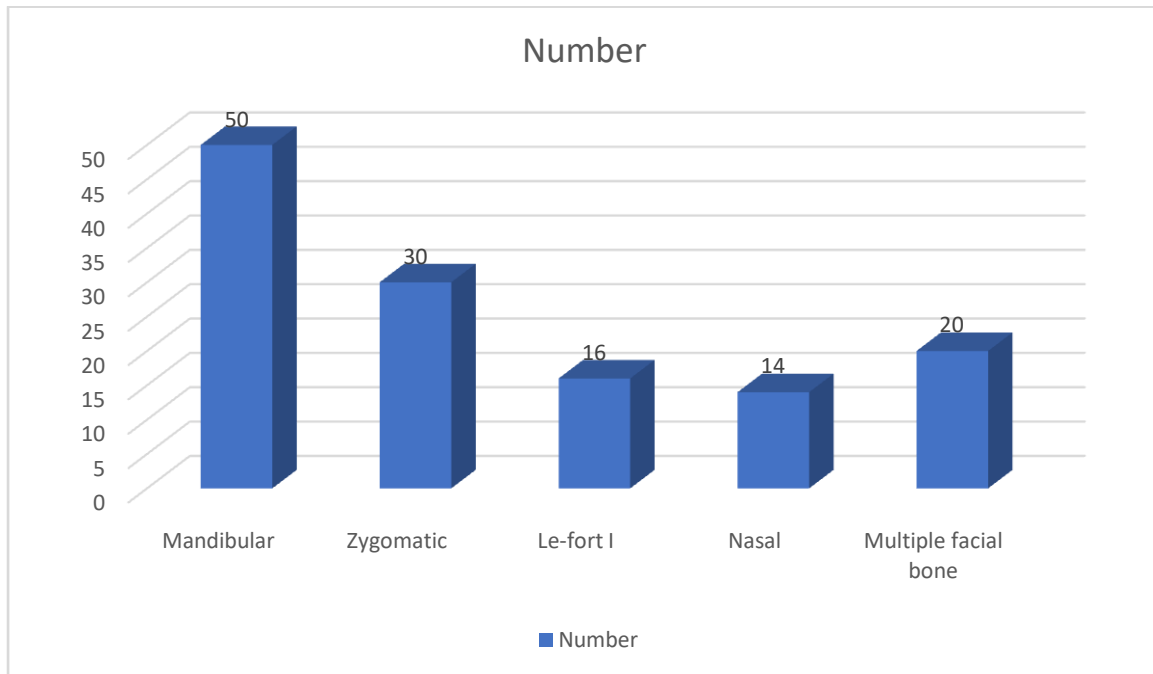


Table III Assessment of OHIP-14 questionnaire

Questionnaire	Immediately after trauma	After 30 days	P value
Difficulty of pronunciation	0.30	0.10	0.05
Taste alteration	1.10	0.30	0.01
Pain	1.00	0.20	0.02
Discomfort when eating	1.20	0.70	0.02
Oral discomfort	0.38	0.12	0.06
Nervous tension	0.70	0.10	0.05
Hampered eating	0.94	0.32	0.05
Interruption of meals	0.30	0.10	0.05
Difficulty relaxing	0.40	0.08	0.04
Embarrassment	0.52	0.24	0.02
Irritation with other people	0.36	0.12	0.04

Difficulty in carrying out daily activities	0.10	0.0	0.12
Unsatisfactory life	0.24	0.10	0.14
Functional incapacity	0.10	0.0	0.16

Table III shows that questionnaire used was difficulty of pronunciation, taste alteration, pain, discomfort when eating, oral discomfort, nervous tension, hampered eating, interruption of meals, difficult relaxing, embarrassment, irritation with other people, difficulty in carrying out daily activities, unsatisfactory life and functional incapacity. A significant difference was found immediately after trauma and 30 days after trauma. The difference was significant ($P < 0.05$).

Discussion

Oral and maxillofacial injuries can occur in isolation or be part of a larger trauma. For this cause, multidisciplinary examination involving specialties such as ophthalmology, plastic surgery, maxillofacial surgery, and neurosurgery is extremely important when making a neurological assessment.⁷ The early oral inspection should include locating missing teeth, fracture sites and any intra-oral laceration.⁸ The lower dental arch should be evaluated to ensure it remains intact. As with maxillary fractures, all missing teeth should be accounted for which may require radiographic evaluation of the chest.⁹ Complete disruption of the mandible and the subsequent loss of dental alignment can mimic a missing tooth. Post-traumatic malocclusion is often reported by the patient and should generally be visible by intra-oral inspection. Occlusion should be checked by asking the patient to close their mouth to identify any malalignment of the teeth. Indicators of mandibular fracture is step in the occlusal plane with a ruptured gingiva at the site or a sublingual haematoma.¹⁰

In present study, out of 130 patients, males were 70 and females were 60. Common type of fracture was mandibular in 50, zygomatic in 30, Le-fort I in 16, nasal in 14 and multiple facial bone in 20 cases. Conforte et al¹¹ assessed the impact of oral and maxillofacial trauma and surgical treatment on the quality of life of patients. 66 patients with facial fractures; 33 required surgical treatment and 33 required conservative (non-surgical) treatment were included. Quality of life was assessed by applying the Oral Health Impact Profile questionnaire (OHIP-14) immediately after diagnosis of the trauma (T1), 30 days after surgery or trauma (T2), and 90 days after surgery or trauma (T3). Conservative treatment

group (control) observed change in quality of life at T1 and T2. All of the surgical patients experienced a change in quality of life irrespective of the type of fracture. There was no statistical difference when T1, T2, and T3 were compared in cases of zygomatic, Le Fort I, and nasal fractures, however there was an improvement in the quality of life of patients with mandibular fractures and multiple facial fractures at T3. Facial trauma caused the greatest impact on the quality of life of surgical patients at T1. The surgical treatment significantly improved quality of life for patients with mandibular and multiple facial fractures.

We found that there was a significant difference immediately after trauma and 30 days after trauma. Arslan et al¹² included 556 (73.7%) male and 198 (26.3%) female patients and the male-to-female ratio was 2.8:1. Mean age was 40.3 ± 17.2 years with a range of 18 to 97 years also mean age of patients with MF fractures were almost the same (40.06 ± 17.2). Majority of the patients ($n = 432, 57.4\%$) were between the ages of 18–39 years and predominantly male. Above 60 years of age, referrals were mostly woman. The most common cause of injuries were violence, accounting for 39.7% ($n = 299$) of the sample, followed by falls 27.9% ($n = 210$) and road traffic accidents 27.2% ($n = 205$). In patients between 20 to 49 years violence was the main cause of injuries, whereas after 50 years old falls were the primary cause of injuries. These associations were found to be statistically significant.

Conclusion

Authors found that there was improvement in quality of life after management of facial trauma.

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