Original Article

STRESS RELATED TO TRAUMATIC SCAR POST FACIAL INJURIES: AN ORIGINAL RESEARCH

Dr. (Lt Col) Sunil R[1], Dr. P.Subramanian[2], Dr. Arshdeep Singh Kohli[3], Dr. Sriram Choudary Nuthalapati[4], Dr. Tharini Satheesh[5], Dr. Anil Managutti[6], Dr. Rahul VC Tiwari[7]

[1]Department of Oral and Maxillofacial Surgery, Al Azhar Dental College and Hospital, Thodupuzha, Kerala, India.
[2]MDS, Professor & Head, Department of Oral & Maxillofacial Surgery, Dhanalakshmi Srinivasan Dental College, Chennai-Trichy National highway, Siruvachur, Perambalur, Tamilnadu, India.
[3]Senior Lecturer, Department of Oral and Maxillofacial Surgery, Luxmi Bai Institute of Dental Sciences and Hospital, Patiala, Punjab, India.
[4]Reader, Department of Oral & Maxillofacial Surgery, Dhanalakshmi Srinivasan Dental College & Hospital, Siruvachur, Chennai - Trichy national highway, Perambalur, Tamilnadu, India.
[5]MDS, Assistant Professor, Department of Oral and Maxillofacial Surgery, Saveetha Dental College and Hospitals, Chennai, Tamil Nadu, India.
[6]Prof.& HOD, Department of OMFS, Narsinhbhai Patel Dental College and Hospital, Sankalchand Patel University, Visnagar, Gujarat, India.
[7]OMFS, FOGS, (MHA), PhD Scholar, Department of OMFS, Narsinhbhai Patel Dental College and Hospital, Sankalchand Patel University, Visnagar, Gujarat, India.
Corresponding author: Dr. P.Subramanian
Email: drsubbu@gmail.com

DOI: 10.47750/pnr.2022.13.S06.540

Abstract

Aim: Purpose of the present research was to assess the amount of stress and anxiety related to post facial injuries scarring in patients.

Methodology: PTSD was assessed one month postoperatively by the diagnostic instrument, IES-R, to arrive at a provisional diagnosis. A structured clinician-administered PTSD Scale then assessed the patients for the Diagnostic and Statistical Manual of Mental Disorders-5th edition (CAPS-5) to establish a final diagnosis. The assessment of the severity of PTSD was done based on various types of oral and maxillofacial injuries

Results: The IES-R scale provisionally diagnosed 54 subjects with PTSD, out of which 42 were diagnosed to have PTSD by the CAPS-5 scale. Subjects with injuries involving the 'orbital complex,' those presenting with a perceptible scar in the maxillofacial region and with multiple avulsed/ luxated anterior teeth, showed a higher affinity to develop PTSD, and this was statistically significant.

Conclusion: Higher levels of PTSD in patients with injuries to the maxillofacial region warrants correct diagnosis and detection, and hence the maxillofacial surgeon plays a vital role in this regard.

Keywords: Maxillofacial Injuries; Stress Disorders, Post-Traumatic.

INTRODUCTION

The face is often the seat of recognition for a human being and living with a change in the appearance of one's face as a result of injury, disease, burns or trauma is always a challenging task. Various medical, personal, social and psychological variables influence the process of adaptation and it is often difficult predict the course of

adaptation in many cases.[1] It is important that the plastic surgery treatment team be aware that the ultimate goal of their work, improving patient quality of life, is determined not only by their surgical skills but also by a range of social and psychological factors. The psychological aspects in patients with acquired facial may not be completely addressed by the plastic surgery treatment team alone. The primary goal of plastic surgeons is to provide patients with the highest standards of surgical care and most members of the team have not been given adequate training to address psychosocial concerns. In addition there has not been enough research on the psychosocial responses and variables affecting the forms of acquired facial disfigurement.[2,3] It is well know that psychological issues in response to acquired disfigurement are different and more pronounced than that to congenital craniofacial disfigurement. Patients with acquired facial trauma are likely to have some unique psychological characteristics.[4]Military veterans and disaster survivors are our primary knowledge of the psychological impact of traumatic events.[5] Maxillofacial trauma was recognized as important for research because of its potential for both physical and psychological disability.[6] Poor documentation in routine clinical practice of the psychological impact of facial trauma patient leads to under recognition and non-treatment of an important morbidity that arises post-trauma and can become chronic. There has been published literature suggesting post-traumatic stress disorder (PTSD) may develop, the PTSD of facial trauma patients documented range between 26% and 41%.[4-6] Anxiety is an emotion characterized by an state of unpleasantness and of inner turmoil, it is accompanied by nervous behavior, such as pacing back and forth, somatic complaints and rumination.[7] There are subjective unpleasant feelings of dread over anticipated events, such as the feeling of imminent death.[8] Anxiety is not the same as fear that is a response to a real or perceived immediate threat, whereas anxiety is the expectation of future threat.[9] Anxiety is a feeling of fear, worry, and uneasiness, usually generalized and unfocused as an overreaction to a situation that is only subjectively seen as menacing. There are muscular tension, restlessness, fatigue and problems in concentration. Anxiety can be appropriate, but when experienced regularly the individual may suffer from an anxiety disorder. Depression is a state of low mood and aversion to activity that can affect a person's thoughts, behavior, feelings and sense of well-being.[10,11] People with depressed mood can feel sad, anxious, empty, hopeless, helpless, worthless, guilty, irritable, ashamed, or restless. They may lose interest in activities that were once pleasurable, experience loss of appetite or overeating, have problems concentrating, remembering details or making decisions, and may contemplate, attempt or commit suicide. Insomnia, excessive sleeping, fatigue, aches, pains, digestive problems, or reduced energy may also be present.[12]

AIM OF THE PRESENT STUDY

Purpose of the present research was to assess the amount of stress and anxiety related to post facial injuries scarring in patients. They were screened for Post traumatic stress disorder (PTSD).

METHODOLOGY

The study included patients with oral and maxillofacial injuries, aged between eighteen and sixty-five years, who were willing to come for a follow-up. The study excluded patients with a pre-existing cognitive impairment, those on antipsychotic medication in the preceding year, and associated neurologic/ orthopaedic/abdominal/chest injuries. Surgical management included open reduction and internal fixation either under general or local anaesthesia. Non-surgical management included debridement, wound closure, and replacement of missing teeth. The selected patients were assessed at least one month after trauma and not later than three months post-trauma. The impact of Event Scale revised (IES-R) scale was used as the assessment tool for screening Post-Traumatic Stress Disorder (PTSD) in the patients. The IES-R has 22 items, and the patient rates each symptom as to how bothersome it had been during the preceding week. Each IES-R format has five responses (0, 1, 2, 3, 4), and it assesses 're-experiencing / intrusion,' 'avoidance / numbing,' and hyperarousal. A total IES-R cut-off score of 35 was taken as a reasonable value for the provisional PTSD diagnosis. A final assessment by qualified experts was next done by a standard scale, the Clinician-Administered PTSD Scale for the Diagnostic and Statistical Manual of Mental Disorders-5th edition (CAPS-5), in which the patients needed to

meet with the eight diagnostic criteria as per the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), to be labelled positive for PTSD. Two specifications, which included delayed expression and a dissociative subtype of PTSD, were also considered to diagnose PTSD. PTSD assessment was assessed based on different types of maxillofacial injuries, which included soft tissue and dental injuries. The SPSS 25 version (IBM Corp., Armonk, NY, USA) was used in data analysis. The Pearson chi square test was used to determine the correlation between continuous variables and the significance level was set at 5%.

RESULTS

Among 154 patients included in the study, where most of the injuries were due to road traffic accidents (RTA). RTA accounted for 127 patients, followed by a history of falls accounting for 15 patients. Forty-five patients (30.6%) had 'orbital complex' injuries associated with either a Zygomaticomaxillary complex fracture or a Lefort fracture without involving the mandible. Midface fractures not associated with an orbital component accounted for 18 subjects. Mandibular fractures accounted for 75 subjects, and panfacial fractures involving both the midface and the mandible accounted for nine patients. Ninety patients (61.2%) with an associated soft tissue injury in the maxillofacial region. Sixty-one patients had associated avulsion/luxation of anterior teeth. The IES-R scale had 54 patients (36.7%) above the cut-off score of 35. The final diagnosis of PTSD, as determined by CAPS-5, accounted for 42 subjects (28.6%). All the subjects diagnosed with PTSD showed significantly higher IES-R scores. The Pearson Chi-square test determined the influence of various types of fracture injuries on the development of PTSD. The current study found that out of 42 patients diagnosed with PTSD, 23 had fractures involving the orbital complex (ZMC fractures and Lefort 2 and 3), and this was found to be statistically significant ($p<0.01$). Out of the 42 patients diagnosed with PTSD, 34 had a perceptible facial scar caused due to the traumatic event. The presence of a perceptible facial scar in patients following trauma and its effect on PTSD was found to be statistically relevant by the Pearson Chi-square test ($p<0.01$). (Table 1) Out of 42 patients with PTSD, 29 had associated avulsed/ luxated anterior teeth and was statistically significant as determined by the Pearson Chi-square test ($p<0.01$). (Table 2)

DISCUSSION

Depression and anxiety associated with facial trauma is often coupled with worries regarding recovery and length of the treatment process.[13] Facial trauma leads to disfigurement which also affects the social image of the patient.[14] Patients may express unhappiness regarding facial appearance after facial trauma and this may often led to social withdrawal and isolation. They may feel inferior to others in social presentation and may often feel a stigma associated with facial disfigurement.[15] The recovery process after facial trauma is often lengthy and multiple surgeries with a multidisciplinary post-operative rehabilitation process may be needed. This may add to the frustration of the patient.[16] Injuries to key areas of the face like the eyes, ears and dental injuries often increase vulnerability to stress and impede recovery.[17] Significant difficulties in returning to premorbid levels of occupational functioning have been noted in these cases.[18] Facial trauma patients also report higher rates of somatoform symptoms, substance abuse, post-traumatic stress disorder symptoms, body image issues, stigmatization, lower quality of life and lower overall satisfaction with life.[19] They also report problems in marital, occupational and social functioning.[20] The current study shows the high prevalence of PTSD in patients with maxillofacial injuries. In addition to assessing PTSD in maxillofacial injuries, it determines the efficiency of a diagnostic instrument, IES-R, in the diagnosis of PTSD from an oral and maxillofacial point of view by relating them to a standard structured instrument, CAPS-5. In the current study, almost 29% of patients with oral and maxillofacial injuries exhibited PTSD, and this corresponds to the study findings of Bisson et al., who reported a 27% prevalence.[21] The outcome of the current study is manifold. It is evident that, in maxillofacial trauma, the IES- R is a good diagnostic screening tools to detect PTSD. The proper knowledge about the factors playing a significant role in the development of PTSD in maxillofacial trauma, such as orbital injuries, facial lacerations, and avulsed anterior teeth, can direct maxillofacial surgeons to focus on these aspects during the

surgical management of the patient. Treatment measures should be directed to minimize post-traumatic deficits by addressing both functional and esthetic deformities.

CONCLUSION

Subjects with maxillofacial injuries involving the orbital complex, those with a perceptible post-traumatic scar and avulsed anterior teeth, are more prone to develop PTSD.

REFERENCES

1. Cunningham SJ. The psychology of facial appearance. Dent Update. 1999;26:438–43.
2. Shetty V, Glynn S, Brown KE. Psychological sequelae and correlates of orofacial injury. Dent Clin North Am. 2003;47:141–57.
3. De Sousa A. Psychological issues in oral and maxillofacial reconstructive surgery. Br J Oral Maxillofac Surg. 2008;46:661–4.
4. Frodel JL., Jr Dealing with the difficult trauma and reconstructive surgery patient. Facial Plast Surg Clin North Am. 2008;16:225–31.
5. Alexander DA. Human reactions to trauma: Their features and management. In: Greaves I, Porter K (Editors). Pre-Hospital Medicine: The Principles and Practice of Immediate Care, London: Arnold; 1999.
6. Shepherd JP. Strategies for the study of long-term sequelae of oral and facial injuries. J Oral Maxillofac Surg 1992;50(4):390-9.
7. Bisson JI, Shepherd JP, Dhutia M. Psychological sequelae of facial trauma. J Trauma 1997;43(3):496-500. 5. Hull AM, Lowe T, Devlin M, Finlay P, Koppel D, Stewart AM. Psychological consequences of maxillofacial trauma: A preliminary study. Br J Oral Maxillofac Surg 2003;41(5):317-22.
8. Roccia F, Dell'Acqua A, Angelini G, Berrone S. Maxillofacial trauma and psychiatric sequelae: Post-traumatic stress disorder. J Craniofac Surg 2005;16(3):355-60.
9. Seligman ME, Walker EF, Rosenhan DL. Abnormal Psychology, 4th ed. NewYork: W.W. Norton & Company; 2001.
10. Davison V, Gerald C. Abnormal Psychology, Toronto: Veronica Visentin; p. 154.
11. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, 5th ed. Arlington, VA: American Psychiatric Publishing; p. 189.
12. Sandra S. Depression: Questions You Have – Answers You Need, Allentown: People's Medical Society; 1997.
13. Enqvist B, Von konow OL, Bystedt OH. Stress reduction, preoperative hypnosis and perioperative suggestion in maxillofacial surgery: Somatic responses and recovery. Stress Med. 1995;11:229–33.
14. McGrouther DA. Facial disfigurement. BMJ. 1997;314:991–2.
15. Newell R, Marks I. Phobic nature of social difficulty in facially disfigured people. Br J Psychiatry. 2000;176:177–81.
16. Van Swearingen J. Facial rehabilitation: A neuromuscular reeducation and patient centered approach. Facial Plast Surg. 2008;24:250–9.
17. Shaikh ZS, Worall SF. Epidemiology of facial trauma in a sample of patients aged 1-18 years. Injury. 2002;33:669–71.
18. Thompson A, Kent G. Adjusting to disfigurement: The processes involved in dealing with being visibly different. Clin Psychol Rev. 2001;21:663–82.
19. Shepherd JP. Strategies for the study of the long term sequelae of oral and facial injuries. J Oral Maxillofac Surg. 1992;50:390–9.
20. Tebble NJ, Thomas DW, Price P. Anxiety and self consciousness in patients with minor facial lacerations. J Adv Nurs. 2004;47:417–26.
21. Bisson JI, Shepherd JP, Dhutia M. Psychological sequelae of facial trauma. J Trauma 1997; 43(3):496-500.

TABLES

Table 1- Association of perceptible facial scars with PTSD

Perceptible Facial Scar	**PTSD Absent**	**PTSD Present**	**Total**	**p-value**
	N (%)	N (%)	N (%)	
Absent	49 (46.7)	8 (19.0)	57 (38.8)	<0.001
Present	56 (53.3)	34 (81.0)	90 (61.2)	
Total	105 (100.0)	42 (100.0)	147 (100.0)	

Table 2- Association of avulsed/luxated anterior teeth with PTSD

Dental avulsion	**CAPS-5 Absent**	**CAPS-5 Present**	**Total**	**p-value**
	N (%)	N (%)	N (%)	
Absent	73 (69.5)	13 (31.0)	86 (58.5)	<0.001
Present	32 (30.5)	29 (69.0)	61 (41.5)	
Total	105 (100.0)	42 (100.0)	147 (100.0)	

**CAPS-5- Clinician-Administered PTSD Scale for the Diagnostic and Statistical Manual of Mental Disorders-5th edition*