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Body Dysmorphic Disorder Secondary to Maxillofacial Traumatic Injuries: An Evaluative Analysis

Research Article

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Abstract

While the management of traumatic maxillofacial injuries is focused in restoring physical form and function to normalcy, the psychological morbidity that progresses silently during the recovery period remains undealt. BDD is one such disorder that has never been studied in maxillofacial trauma survivors but highly impacting and thus needs to be taken seriously. This study aims to evaluate the prevalence of Body Dysmorphic Disorder in patients surgically treated for traumatic maxillofacial injuries during their postoperative recovery period.

Materials and Methods: A cross sectional analysis of patients surgically managed for the traumatic facial injuries were enrolled between their sixth week and six months of recovery period. Age, gender, type of injury sustained (disfiguring or non-disfiguring)were recorded. BDD-YBOCS scale was applied on them and responses were recorded and subjected to statistical analysis.

Results: The population was predominantly male. . 65.6% (n= 42) of them sustained disfiguring injuries. Prevalence of BDD was observed in 23.4% (n=15). More than 93% of those found with BDD were with mean age of 24.8 and the association was highly significant with $p<0.000$.

Discussion: BDD is commonly existent in post-traumatic patients and with simple tools can be diagnosed with ease. Psychological well-being forms an integral part of a successful management of maxillofacial injuries.

Keywords: Psychological; Dysmorphophobia; Maxillofacial Trauma.

Introduction

Maxillofacial trauma has seen a surge in the 21st century and considered the silent epidemic of the era. Though remarkable progress in the surgical restoration of craniofacial fractures has occurred, little attention has been paid to the emotional and psychological distress that such trauma may cause [1]. Documentation of psychological consequences like anxiety, depression, negative socialization, Post traumatic stress disorder (PTSD) has been done from the late 20th century. Assessment of quality of health post trauma has been done by the psychologists but the role of maxillofacial surgeons who share first line relation in the management of the patient is negligible. Since face is crucial for establishing a social relation, injury sustained in a trauma that hampers this harmony impacts the individual's life significantly. Body dysmorphic disorder acquired post –trauma is a serious condition that has to be noticed and addressed at the earliest. In dysmorphophobia or body dysmorphic disorder, the patient has a subjective feeling of ugliness or physical defect that he or she believes is noticeable to others, although appearance is within normal limits [2]. This study intends to evaluate the prevalence of BDD in post-surgical patients treated for traumatic maxillofacial injuries and uncover the latent psychological morbidity that proceeds chronically undermining the patients' quality of life.

Materials and Methods

An evaluative analysis of 64 patients who sustained maxillofacial injuries due to trauma and were treated by the Department of Oral and Maxillofacial Surgery during April 2019 to April 2020 was enrolled in the study. Patients, who were 16 years of age and above, with surgical treatment (from suturing of lacerated wound to surgical fixation of complex maxillofacial fractures) at least six weeks to six months prior to their enrolment, were included in the study. After obtaining ethical clearance, demographic details were recorded. The injuries were recorded as disfiguring injuries in case of significant post-traumatic change of facial orthopaedics or evi-

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dent scarring and non- disfiguring injuries (no facial asymmetry or scarring). Those with known psychological or neurologic conditions were excluded in the study. After obtaining consent from the subjects, Yale-Brown Obsessive Compulsive Scale, Modified for BDD (BDD-YBOCS) was applied on them and their responses were recorded. The BDD- YBOCS is a 12-item semi-structured clinician-rated instrument to measure the severity of BDD in individuals showing excessive pre-occupation and subjective distress with physical appearance. They are rated on a 0-4 scale where 0 indicates no symptoms and 4 indicate extreme symptoms. It measures the severity of BDD-related obsessions, compulsions, and avoidance and hence was selected to assess the post-traumatic incidence of BDD in maxillofacial trauma patients. Total score varies from 0 to 48 and a score higher than 20 denotes the presence of BDD in the subject. All the data was recorded and subjected to statistical analysis.

Statistical Analysis

The collected data were analysed with IBM.SPSS statistics software 23.0 Version. To describe about the data, descriptive statistics, frequency analysis, percentage analysis were used for categorical variables and the mean & S.D were used for continuous variables. To find the significant difference between the bivariate samples in Independent groups the Unpaired sample t-test was used. For the multivariate analysis the one way ANOVA was used. To find the significance in categorical data Chi-Square test was used. Similarly if the expected cell frequency is less than 5 in 2×2 tables, the Fisher's exact test was used. In all the above statistical tools the probability value .05 is considered as significant level.

Result

Out of the 64 subjects, 71.9% (n= 46) were males and 28.1% (n=18) were females. 65.6% (n= 42) of them sustained disfiguring injuries of the face while 34.4% (n= 22) sustained non disfiguring injuries. Prevalence of BDD was observed in 23.4% (n=15) of the study population with total score greater than 20 and absent in 76.6% (n= 49). Highest total score recorded was 31 and the lowest 0. Mean BDD score of the population was 16.30. No significant association of BDD with gender was observed in our study. Table 1 presents the correlation of BDD with the type of sustained maxillofacial injuries. 93.3% (n=14) of those with BDD had sustained disfiguring injuries to the face while 6.7% (n=1) had no disfiguring injury to the face but was found to have BDD. The association between the type of maxillofacial injury and incidence of BDD was statistically significant with $p<0.05$. Table 2 depicts the correlation of age and the incidence of BDD. The mean age of the population positive for BDD was 24.8 ± 3.4 and the association of BDD bore a high statistical significance with $p<0.000$.

Discussion

Maxillofacial trauma comprises the major concern of modern day medicine and public services due to increasing global urbanization. Due to the complexity and fragility of the anatomical architecture, the vulnerability of sustaining high impact forces by facial skeleton is not so uncommon. Road traffic accidents, interpersonal violence, fall, sport injuries are the most common reasons of maxillofacial trauma and, significant morbidity and mortality is associated with the same. The severity of maxillofacial injuries varies from mild soft tissue injuries like contusion, lacerations or abrasions to complex fractures of the craniofacial skeleton which requires respective management protocols. Prompt diagnosis of the severity of the sustained injury in the emergency department and early surgical management of the complex injuries reduces morbidity to a significant extent. Generally, the stability of the facial construct and reinstating the functional abilities are the prime objectives of treatment planning, restoration of facial esthetics is the third pillar of a successful management of maxillofacial injuries. While the stability and functional aspects of management greatly influences the restoration of physical form, esthetic restoration has significant effect on psychological well-being of the individual in addition to the physical form. Examination of the mental health of a patient post-trauma is rarely ever recorded and failure to do so affects the quality of life of the individual thereafter [3]. Face is vital in recognizing oneself socially and unfamiliar change in their face as a result of trauma causes grave psychologi-

Table 1: Correlation between BDD and Type of Maxillofacial Injury.

		BDD Negative	BDD Positive	TOTAL	Fischer Exact Sig. (2-sided)	Fischer Exact Sig. (1-sided)
Type of Injury	Disfiguring	28	14	42	0.012	0.008
		57.10%	93.30%	65.60%		
	Non- disfiguring	21	1	22		
		42.90%	6.70%	34.40%		
Total		49	15	64		
		100.00%	100.00%	100.00%		

Table 2. Correlation between BDD and Age.

	BDD	N	Mean	Std. Deviation	Std. Error Mean	t- test significance (2 tailed)
Age	Positive	15	24.87	3.461	0.894	0.001
	Negative	49	31.29	11.094	1.585	

cal morbidity [4]. Bisson JI et al reported that 26-41% of those sustaining maxillofacial injuries suffer from psychological illness post-treatment ranging from anxiety, depression to Post-traumatic stress disorder (PTSD)[5]. The importance of identifying and addressing these consequences are being studied upon by various researchers recently. In addition to these conditions, there is another unidentified mental morbidity that is commonly prevalent in the victims of facial traumatic injuries is the Body Dysmorphic Disorder (BDD). Maxillofacial injury causes both objective and subjective changes in facial appearance. Individuals with facial disfigurement tend to have a negative social imaging and a lower self-esteem in view of the acquired facial defect [6]. This study intended to identify such an unexplored yet important psychological concern uniquely associated with maxillofacial trauma.

Body Dysmorphic Disorder, according to Diagnostic and Statistical Manual of mental disorders-V (DSM-V)[7] criteria is characterized to be "preoccupation with one or more perceived defects or flaws in physical appearance that are not observable or appear slight to others," and by "repetitive behaviors (e.g., mirror checking, excessive grooming, skin picking, reassurance seeking) or mental acts (e.g., comparing his or her appearance with that of others) in response to the appearance concerns." In addition, it causes "clinically significant distress or impairment in important areas of functioning" and its "symptoms are not better explained by normal concerns with physical appearance or by concerns with body fat or weight in individuals meeting diagnostic criteria for eating disorders." Generally patients seek medical treatment and they still remain dissatisfied after treatment. In maxillofacial patient population, BDD is most commonly observed in patients with developmental jaw deformities requiring orthognathic surgeries or perceived defect of the soft tissues requiring aesthetic plastic surgeries [8]. Prevalence of BDD in post-traumatic acquired deformities of face when traced had little literature evidence and has not been studied previously. Most of it goes unrecognized by the surgeon and also the patient who is unaware of developing dissatisfaction of the facial defect with time. The more the BDD is unaddressed, the more impact it has on the social and personal life of the individual. It also repels the individual from the common activities due to increasing severity of preconceived notion regarding their post-traumatic disfigurement chronically affecting their lives. The diagnosis of BDD can be done with simple tools like questionnaires during the post-surgical period. Tools that are commonly employed for diagnosing BDD [9] are Yale-Brown Obsessive Compulsive Scale Modified for Body Dysmorphic Disorder (BDD-YBOCS), Structured Clinical Interview for DSM-IV Axis I Disorders, Non-Patient Edition (SCID-NP), CGI-I Scale, Body Dysmorphic Disorder Examination (BDDE), Modified Hamilton Depression Rating Scale (HAM-D), Brown Assessment of Beliefs Scale (BABS), The Cosmetic Procedure Screening Scale (COPS), The Appearance Anxiety Inventory (AAI), and the BDD Dimensional Scale.

BDD- YBOCS is semi-structured 12 item clinician rated scale that assess the severity of BDD in the past week. Since BDD share similar symptoms with Obsessive Compulsive Disorder, this scale was re-adapted in diagnosing BDD. The first five items assess obsessional preoccupations of the perceived appearance defects (time preoccupied, interference in functioning and distress due to perceived appearance defects, resistance against preoccupations, and control over preoccupations). Items 6–10 assess BDD-related repetitive behaviours (e.g., excessive grooming, mirror checking) and are similar to items 1–5 (time spent performing the behaviours, interference in functioning due to the behaviours, distress experienced if the behaviours are prevented, and resistance of and control over the behaviours). Item 11 assesses insight into appearance beliefs (e.g., "I am ugly"), and item 12 assesses avoidance (e.g., of work/school or social activities) because of BDD symptoms. Scores for each item range from 0 (no symptoms) to 4 (extreme symptoms); the total score ranges from 0 to 48, with higher scores reflecting more severe symptoms [10]. Minimum score of 20 is required to confirm the patient to be positive for BDD [11].

This study results revealed that a considerable proportion of the patients were found to have developed BDD during their post-operative recovery period. Out of 64 patients enrolled, BDD was incident in 23.4% of the patients. BDD in general population has a prevalence rate of 0.7 to 4%. While in patients seeking cosmetic surgery and dermatology it is around 6 to 16%. About 10% of those seeking esthetic jaw correction surgeries were reported to have BDD. Avinash De Souza [12] reported that prevalence of psychological comorbidity in patients undergoing reconstructive surgeries post-tumor resection is comparatively lower than patients sustained traumatic facial injuries. Trauma induced defects are often considered to be unnecessary, random and unacceptable that escalates anger and hatred towards oneself and the situation that could have been avoided by chance as well as idealizing one's pre-injury physical appearance making the adjustment process more difficult. This supports the results of our study. Also, the rate of incidence of BDD was higher in patients sustaining disfiguring injuries of the face comprising about 93.3% of the total positive BDD patients which was statistically significant. Also another important finding in our study was, those who were diagnosed with presence of BDD were young adults with mean age of 24.8 years and the result was highly significant statistically. This depicts the dire need to address the psychological impact of trauma during the recovery period. Failing to do so proves to be detrimental to the rest of the productive years of these young adults. 20- 30 years being the formative years of an individual is loaded with vision and responsibility, self-esteem, confidence and prime importance to the esthetic outlook of the individual. When a traumatic event causes facial defect, it impacts social image of the patient. Patients feel inferior due to the stigma around the facial appearance and tend to exhibit social withdrawal and isolation. The prolonged recovery, multiple hospital visits, rehabilitation methods adds up to the mental exhaustion [12]. When prompt diagnosis is not made, this can progress chronically stagnating the progress of the individual and coping with the distress becomes an uphill task. The psychological needs of a individuals with post- traumatic facial injuries are unique and are more likely to report symptoms of depression, anxiety, and hostility when compared to a matched normal control group for a period of up to 1 year post trauma [13]. In many cases due to the sub-threshold prevalence of BDD, a diagnostic dilemma prevails and prevents from being spot. Thus it is imperative to watch out for the psychological well-being of the patients during the post-surgical recovery period. A comprehensive approach has to be made by the surgeon in managing the patient physically and psychologically. Lack of understanding of the psychological aspect of the patients can be attributed to no exposure to psychology as a subject resulting in low awareness [14]. With simple tools that are enormously available and easy to apply, could identify the prevalence and severity of the condition, it should be adapted as a part of the post-

operative protocol and follow an interdisciplinary management of the patient for a complete success.

This study has few shortcomings. A larger sample size would have substantiated the importance of the prevalence of BDD. This study was done cross-sectionally due to the reduced compliance of the patients of the region and multiple visits and follow up of the same could validate the course of the disorder over time. The sample population was predominantly male and a higher size of sample would alleviate the doubts entailing the same.

Conclusion

This study exposes that BDD is commonly prevalent in patients with acquired facial defects due to traumatic injuries and has to be checked for in every patient during follow up. Adequate psychological support should be provided to the patients to recover mentally that will hasten up the process of physical well-being. Young adults are more prone to develop BDD and are often unaware of it progressing chronically. Hence a multidisciplinary approach should be formulated during the treatment of maxillofacial trauma patients and adequate follow up of the patient should be done to improve the overall recovery of the patient.

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