

Self-esteem and depression in patients presenting angle class III malocclusion submitted for orthognathic surgery

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Received: 20-04-2007

Accepted: 1-10-2007

Nicodemo D, Pereira MD, Ferreira LM. Self-esteem and depression in patients presenting angle class III malocclusion submitted for orthognathic surgery. Med Oral Patol Oral Cir Bucal. 2008 Jan1;13(1):E48-51.
 © Medicina Oral S. L. C.I.F. B 96689336 - ISSN 1698-6946
<http://www.medicinaoral.com/medoralfree01/v13i1/medoralv13i1p48.pdf>

Indexed in:

-Index Medicus / MEDLINE / PubMed
 -EMBASE, Excerpta Medica
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Abstract

Objective: To assess self-esteem and depression in patients submitted for orthognathic surgery. **Methods:** Assessment was realized on 29 patients, male and female, aged 17 to 46, presenting Angle Class III malocclusion and referred for surgical treatment, during the preoperative (orthodontic preparation) and postoperative (six-month postoperative) periods. Either maxillomandibular or isolated procedures were performed. Two previously validated standardized measurement instruments for this area were used: the UNIFESP-EPM Rosenberg Self-Esteem Scale and the Self-Report Questionnaire-20 (SRQ-20). Descriptive and inferential statistical analysis (Repeated Measures Analysis of Variance and the Bonferroni test) verified possible interactions between the pre and postoperative periods, genders and types of surgery. Significance was determined at 5%. **Results:** Females showed improved self-esteem, presenting lower mean values after surgery (8.9 to 6.3). Regarding depression, a significant reduction in the number of depressive symptoms ($p=0.002$) occurred for female patients. **Conclusions:** Female patients presented improved self-esteem and diminished depressive symptoms due to surgical intervention; whereas male patients showed no alteration in self-esteem and depression with surgical intervention.

Key words: Orthognathic surgery, quality of life, buccal health, psychosocial impact, self-esteem, depression.

Introduction

Orthognathic surgery, realized by a surgeon together with an orthodontist, is performed to treat dentofacial deformities and its importance lies not only in the correction of occlusion, but also in facial esthetics. Thus, the psychological implications of this treatment deserve both analysis and the attention of the professionals involved. Patient satisfaction with the surgical results, even with the known postoperative discomfort to which they are

submitted, is highlighted in many studies, alleging the benefits gained due to the change in appearance, which reflect a patient's desire to recover self-esteem, among other aspects (1, 2). Human appearance causes an impact and influences many aspects of life, such as social interaction; opportunities, or the lack of them, when seeking employment; the choice of partners; and in personality characteristics (3). From infancy onwards, interpersonal relationships perform a fundamental role in the formation

of a positive or negative concept of self, influencing a person's emotional state, including depression (4).

A growing number of studies regarding quality of life in the area of health demonstrate that the perception of an individual regarding self, of their physical and emotional state, is an important indicator in treatment management (5-8). In a study realized in 15 different cultural centers, Power et al., 1999 (9) demonstrated that the physical, psychological, social relations and environmental dominions are important in quality of life assessment and that self-esteem was the highest scoring item in the psychological dominion.

Gift and Atchison, 1995 (10) approached the existing relations between buccal health, general health and quality of life, emphasizing that these relations hold benefits for professionals, in their approach to clinical practice; for researchers, in the identification of health determinants and risk factors; and favor the supervision of priorities regarding institutional programs dealing with health. Clinical exams, the perception of buccal/general well-being and physical, social and psychological functioning are independent measures, but share important correlations among the components assessed both in buccal health and in quality of life.

Considering the influence of psychosocial aspects in the treatment of dentofacial deformities, the impact that surgery provokes due to changes in appearance and the relevance of quality of life studies and related factors, the objective of this work was to assess self-esteem and depression in patients presenting Angle Class III malocclusion referred for orthognathic surgery.

Methods

Casuistic

Assessment was realized on 29 patients, both male and female, presenting Angle Class III malocclusion, referred for surgical treatment and who realized orthodontic preparation at the Orthodontics Correction Clinic of the Post-Graduation Course in Odontology of the Methodist University of São Paulo State (UMESP), Brazil, for a year to one year and six months. The patients were selected consecutively, and observed the following inclusion criteria: patients with Angle's class III malocclusion, with negative overjet ≥ 4 mm.

After orthodontic preparation, all patients were operated on by the same surgeon (MDP) in the Craniomaxillo-facial Surgery Sector of the Plastic Surgery Division at Federal University of São Paulo (UNIFESP), Brazil. Every patient was evaluated by lateral telerradiograph in order to measure the anteroposterior discrepancy. The surgical procedures, planned according to anteroposterior discrepancy presented by the patient, comprised maxillary advancement or mandibular setback (isolated surgery) and maxillary advancement with mandibular setback (maxillomandibular surgery).

Sample description

Of the 29 patients assessed, 16 were female (55.2%) and 13 were male (44.8%); the majority were single, students, aged between 17 and 22 years-old (75.8%), with secondary (junior high USA) school education (62.0%).

Procedures

The patients were assessed in both the pre and postoperative periods. The preoperative period refers to the period in which the patient received orthodontic preparation, more specifically, during the thirty days prior to surgery; and the postoperative period refers to the six months follow-up after surgical intervention.

Assessment consisted of two standardized instruments that had been previously validated for the Brazilian population: the Self-Report Questionnaire-20 (SRQ-20) and the UNIFESP-EPM Rosenberg Self-Esteem Scale. Each patient was individually assessed, in the presence of the researcher, through the assisted application of the two self-administrated instruments, in the order described above. This procedure was adopted for both the pre and postoperative periods for posterior results analysis.

The prospective study was approved by the Local Ethics Committee (578/01).

Instruments

Self-Report Questionnaire -20 (SRQ-20). The SRQ-20, used as an indicator of minor psychiatric disorders (depression, anxiety and somatoform disorders), was validated for the Brazilian population by Mari and Williams, 1986 (11). It consists of 20 statements followed by Yes or No response options. Scoring follows the questionnaire standardization, wherein the sum of the Yes responses is calculated; a result equal to or greater than eight indicates a disorder.

UNIFESP-EPM Rosenberg Self-Esteem Scale. The Rosenberg Self-Esteem Scale is composed of 10 questions with the following response options: a) strongly agree; b) agree; c) disagree; d) strongly disagree. It was translated to the Portuguese language and validated for the Brazilian culture in the Post-Graduation Program in Plastic Surgery, UNIFESP-EPM, by Dini et al., 2004 (12). Scoring follows the scale standardization, where the values for individual responses vary from 0 to 3 points, followed by the sum total of the values obtained (maximum 30 points). The best score on the scale is represented by values close to zero.

Statistical analysis

Descriptive and Inferential Statistical Analyses were realized in order to characterize the study variables and make comparisons of interest. The McNemar test was applied to the SRQ-20, since it deals with a qualitative variable, classifying the patient as either depressive or not.

The statistical test adopted for the realization of comparisons between the types of surgery, among genders and between the different periods (pre and postoperative) was the Repeated Measures Analysis of Variance. When a significant difference was found between the items of a specific factor (gender, period, type of surgery). Multiple

comparisons were realized using the Bonferroni test, in order to identify which items presented differences between each other. The level of significance was determined as 5%; thus, difference was considered between the groups (gender and type of surgery), and/or between the two periods, when $p < 0.05$.

Results

Self-Esteem

With regard to self-esteem, the results verified that the patients presented reduced scores after surgery, that is, they showed improvement in this aspect, since in the UNIFESP-EPM Rosenberg Self-Esteem Scale, the higher the score the worse the patient’s self-esteem and the closer to zero, the better.

Analysis of the effect of the interaction between the results showed that the female patients presented a greater mean value than the males prior to surgery and that in the postoperative period, scoring, though greater when compared to male patients, diminished in relation to the preoperative period. Self-esteem improved in the women, though considering the p value of 0.051, the results were minimally statistically significant (Table 1).

Depression

In the descriptive analysis of the number of affirmative and negative responses for the SRQ-20 that indicate whether the patient presents depression, the results verified that the patients showed no disorder, according to the mean values. From the multiple comparison analysis, the results verified that differences between the genders were only found in the preoperative period, indicating that prior to surgery, the female patients presented a higher mean value, i.e. a greater number of symptoms, than the males and that this value diminished after surgery, showing statistical significance - $p = 0.002$ (Table 2).

Discussion

Of the patients that participated in the study, the majority were aged between 17 and 22 years-old. The greater part of the group of patients was formed of young adults, a fact also related to the majority being single individuals (86.21%). A review of the literature by Bennett and Phillips, 1999 (13), highlighted that the number of patients who required and desired realization of this type of surgery had increased and that the age of these patients was decreasing, as revealed by the present casuistic.

In this study, the patients required surgical treatment to correct dentofacial deformities comprising mandibular setback, maxillary advancement or both procedures. In 2002, Gerzanic et al. (14) aimed to assess the psychological profiles of patients who presented Class II and III malocclusion, as well as the opinions of their respective relatives. They verified differences in the personality profiles and in postoperative dynamics. It should be understood how relevant and vital the dentofacial deformity classification data is regarding treatment management and surgical intervention; however, it was not the intention of this work to emphasize the orthodontic/surgical classification. In this study, the casuistic consisted of patients presenting Class III malocclusion and considered the type of surgery performed, while focusing on the interference that dentofacial deformity provokes in diverse sectors of the personal and professional life of the individual. Similarly, authors studied candidate patients for orthognathic surgery and highlighted the importance of understanding the psychological aspects, of the assessment and prior preparation of the patient, and not the classification of the deformity in these cases (15, 5-7).

Considering dentofacial deformity as a factor of negative impact on the quality of life of a patient, this raised the hypothesis that patients with this deformity could present

Table 1. Descriptive analysis of the effect of the interaction* between gender and period for self-esteem.

| | | Self-Esteem (Pre) | | Self-Esteem (Post) | |
|--------|--------|-------------------|----------------|--------------------|----------------|
| | | Pre | Standard Error | Post | Standard Error |
| Gender | Male | 5.2 | 1.0 | 5.6 | 1.5 |
| | Female | 8.9 | 1.7 | 6.3 | 0.9 |

*obtained after RM ANOVA by Bonferroni correction; ($p = 0.051$).

Table 2. Descriptive analysis of the effect of the interaction* between gender and period for depression.

| | | SQR 20 (Yes) - Pre | | SQR 20 (Yes) - Post | |
|--------|--------|--------------------|----------------|---------------------|----------------|
| | | Pre | Standard Error | Post | Standard Error |
| Gender | Male | 4.2 | 0.8 | 3.5 | 0.8 |
| | Female | 6.5 | 1.0 | 3.5 | 0.8 |

*obtained after RM ANOVA by Bonferroni correction; ($p = 0.002$).

low self-esteem and depressive disorders. Thus, the patients specifically referred for orthognathic surgery were assessed by means of the UNIFESP-EPM Rosenberg Self-Esteem Scale and the SRQ-20.

Self-esteem and depression

Comparing the total scores of the patients in the pre and postoperative periods, the results verified that a change in self-esteem occurred, for the better, after the realization of surgery. While assessing patient satisfaction with the results of orthognathic surgery in both men and women, Siow et al., 2002 (16) found that women sought to improve their self-confidence more than men. Garvill et al., 1992 (17) found a difference in responses between genders, emphasizing that women suffered from the negative impact caused by deformity to a greater extent.

While investigating self-esteem in different groups of patients (reparative surgery, esthetic and control groups), Ozgur et al., 1998 (18) verified that the self-esteem of the reparative surgery patients was lower prior to surgery, similar to the present work. In contrast, Lazaridou-Terzoudi et al., 2003 (5) found no difference in self-esteem and body image among groups of patients and non-patients, though they affirmed the positive psychological effect that the treatment provoked.

Cunningham et al., 1996 (19) used the same scale for measuring self-esteem and also assessed depression. Similarly, they verified that no significant statistical difference occurred regarding self-esteem; that the patients were satisfied with the surgical results; and that the patients received explanations, but they would like to have known more about certain aspects of the surgery. With regard to depression, the results differed, since in the present study a statistically significant effect was verified for female patients between the pre and postoperative periods. The patients showed no depression, but their positive response scores improved, more so among the women than among the men. When comparing surgical treatment with conventional orthodontic treatment, Kiyak et al., 1985 (20) found some depression in patients prior to surgery, which, according to the authors, was provoked by tension and anxiety due to expectations regarding the results and also in the postoperative period due to pain, discomfort and problems with oral functioning. Frost et al., 1991 (21) verified that women were more depressed than men, but were more enthusiastic with the surgical results.

Stewart and Sexton, 1987 (22) assessed depression in patients who were recovering from orthognathic surgery through the use of interviews, inquiring about vegetative symptoms. In the present study, a validated standardized test was applied to assess depression, but unlike Stewart and Sexton, the suffering associated with the experience of depression was not assessed.

Conclusions

1. Female patients showed improved self-esteem and diminished depressive symptoms due to surgical intervention;
2. The aspects of self-esteem and depression presented no alterations with surgical intervention for male patients.

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