Int. J. Oral Maxillofac. Surg. 2015; 44: 1125–1130
http://dx.doi.org/10.1016/j.ijom.2015.02.003, available online at http://www.sciencedirect.com

International Journal of Oral & Maxillofacial Surgery

Clinical Paper
Orthognathic Surgery

Effects of orthognathic surgery on psychological status of patients with jaw deformities

H. Takatsuji[1], T. Kobayashi[1], T. Kojima[1], D. Hasebe[1], N. Izumi[2], I. Saito[3], C. Saito[1,4]

[1]Division of Reconstructive Surgery for Oral and Maxillofacial Region, Department of Tissue Regeneration and Reconstruction, Niigata University Graduate School of Medical and Dental Sciences, Niigata, Japan; [2]Department of Dentistry and Oral Surgery, Kashiwazaki General Hospital and Medical Center, Kashiwazaki, Niigata, Japan; [3]Division of Orthodontics, Department of Oral Biological Science, Niigata University Graduate School of Medical and Dental Sciences, Niigata, Japan; [4]Department of Oral and Maxillofacial Surgery, Tokyo Dental College Suidobashi Hospital, Tokyo, Japan

H. Takatsuji, T. Kobayashi, T. Kojima, D. Hasebe, N. Izumi, I. Saito, C. Saito: Effects of orthognathic surgery on psychological status of patients with jaw deformities. Int. J. Oral Maxillofac. Surg. 2015; 44: 1125–1130. © 2015 International Association of Oral and Maxillofacial Surgeons. Published by Elsevier Ltd. All rights reserved.

Abstract. The purpose of this study was to determine the effect of orthognathic surgery on psychological status. The subjects were 119 patients (38 males and 81 females, mean age 25.5 ± 9.4 years) who underwent orthognathic surgery. They were divided into class III (84 patients), class II (20 patients), and class I (15 patients) groups according to the anteroposterior skeletal pattern, and they were also divided into an asymmetry group (51 patients) and a symmetry group (68 patients). We assessed psychological status using the Minnesota Multiphasic Personality Inventory (MMPI) before surgery and at more than 6 months after surgery. The MMPI scores for the depression, hysteria, psychasthenia, and social introversion scales were significantly higher than standard values before surgery, and the hypomania scale significantly lower. The cannot say scale, depression scale, and hysteria scale decreased significantly after surgery. A comparison of MMPI scores among the groups showed the depression scale in the class III group to be higher than those in the class I and II groups; there was no significant difference between the asymmetry and symmetry groups. In conclusion, orthognathic surgery has a positive influence on the psychological status of patients with jaw deformities, especially patients with skeletal class III malocclusion.

Keywords: jaw deformity; orthognathic surgery; psychological status; Minnesota Multiphasic Personality Inventory (MMPI).

Accepted for publication 3 February 2015
Available online 21 May 2015

The purpose of orthognathic surgery is to correct functional and aesthetic problems due to underlying jaw deformities. The motives of patients who request orthognathic surgery are many and varied,[1] but the desire for aesthetic improvement and the resulting psychological benefit are frequently major motives, rather than a desire for functional improvement.[1–6]

Moreover, self-perception of poor aesthetics is not always correlated to morphometric measures such as physical characteristics and cephalometric values,[7–9] especially in patients with psychological problems, and it has been reported that patients with elevated psychological distress prior to orthognathic surgery tend to experience more difficulties and more discomfort after surgery.[10] Therefore, the psychological function and personality structure of patients who undergo orthognathic surgery are of interest to orthodontists and oral and maxillofacial surgeons.

There are many types of psychological test, and they have many different purposes. The Minnesota Multiphasic Personality Inventory (MMPI)[11] is the most widely used psychological test that assesses personality traits and psychopathology. In this study, we investigated the psychological status of patients with jaw deformities analyzed by MMPI

 © 2015 International Association of Oral and Maxillofacial Surgeons. Published by Elsevier Ltd. All rights reserved.

and the changes following orthognathic surgery.

Materials and methods

Subjects

The subjects were 119 patients (38 males and 81 females) in whom jaw deformities were surgically corrected in the oral and maxillofacial surgery clinic of a university medical and dental hospital in Niigata, Japan, between April 2006 and August 2011 (Table 1). The mean age ± standard standard deviation (SD) at surgery was 25.5 ± 9.4 years (range 16–59 years).

Skeletal morphology was examined with the use of lateral and frontal cephalograms, which were taken simultaneously with the teeth in centric occlusion. Lateral and frontal cephalograms were traced and digitized by translating the points on landmarks. The anteroposterior and vertical relationships between facial skeletal structures were assessed on the lateral cephalogram and the patients were divided into three groups according to the type of anteroposterior skeletal pattern. Eighty-four patients had skeletal class III malocclusions (class III group), 20 patients had skeletal class II malocclusions (class II group), and 15 patients had skeletal class I malocclusions with facial asymmetry and/or open bite (class I group). The mean age ± SD at surgery was 25.4 ± 10.2 years (range 16–59 years) in the class III group, 25.2 ± 6.0 years (range 17–35 years) in the class II group, and 26.8 ± 8.6 years (range 17–44 years) in the class I group. On the frontal cephalogram, the *x*-axis was the line connecting bilateral latero-orbitales, the *y*-axis was perpendicular to the *x*-axis passing through the neck of the crista galli, and asymmetry was assessed with the absolute *x*-value of the menton. The patients were divided into two groups according to the presence or absence of facial asymmetry, which was diagnosed if the absolute *x*-value of the menton on a frontal cephalogram was over 4 mm. Fifty-one patients had facial asymmetry (asymmetry group) and 68 patients had no facial asymmetry (symmetry group). The mean age ± SD at surgery was 26.4 ± 10.2 years (range 16–59 years) in the asymmetry group and 24.9 ± 8.8 years (range 16–55 years) in the symmetry group.

Table 1. Numbers of patients in groups classified according to the type of anteroposterior skeletal pattern and the presence or absence of facial asymmetry.

Groups	Male	Female
Skeletal class III	31	53
Skeletal class II	2	18
Skeletal class I	5	10
Asymmetry	17	34
Symmetry	21	47

A combination of Le Fort I osteotomy and bilateral sagittal split osteotomies and/or other surgeries was used in 81 patients, and bilateral sagittal split osteotomies were performed in 38 patients. Secondary genioplasty was used in 19 patients. No cases of cleft palate or craniofacial syndrome were included. All of the subjects received pre- and postoperative orthodontic treatment, and osteosynthesis was achieved using titanium miniplate and/or resorbable fixation devices. Maxillomandibular fixation was performed 1 day after surgery and maintained for 14 days. The psychological status of each of the patients was assessed using the MMPI before surgery and at more than 6 months after surgery.

The study protocol was approved by the institutional ethics committee and informed consent was obtained from the subjects.

Minnesota Multiphasic Personality Inventory (MMPI)

We used the new Japanese version of the MMPI (The Society for MMPI New Japanese Version, 1993),[11] which is a self-report personality inventory consisting of 550 items that describe feelings or actions that the person is asked to agree with or disagree with. The MMPI is made up of 10 clinical subscales, which are a result of answering certain questions on the test in a specific manner: (1) The Hypochondriasis (Hs) scale measures a person's perception and preoccupation with their health and health issues. (2) The Depression (D) scale measures a person's depressive symptoms level. (3) The Hysteria (Hy) scale measures the emotionality of a person. (4) The Psychopathic Deviate (Pd) scale measures general social maladjustment and the absence of strongly pleasant experiences. (5) The Masculinity/Femininity (Mf) scale measures a stereotype of a person and how they compare. (6) The Paranoia (Pa) scale primarily measures interpersonal sensitivity, moral self-righteousness, and suspiciousness. (7) The Psychasthenia (Pt) scale measures a person's inability to resist specific actions or thoughts, regardless of their maladaptive nature. (8) The Schizophrenia (Sc) scale measures a person's unusual/odd cognitive, perceptual, and emotional experiences. (9) The Hypomania (Ma) scale measures a person's energy. (10) The Social Introversion (Si) scale measures the social introversion and extroversion of a person.

Additionally, the MMPI contains four validity scales designed to measure a person's test-taking attitude and approach to the test: (1) the Cannot say (CNS) scale is the number of items answered ''I cannot say either way'' and is high in general neurotic patients. (2) The Lie (L) scale is intended to identify individuals who are attempting to place themselves in a good light. (3) The Frequency (F) scale is intended to detect unusual or atypical ways of answering the test items, like if a person were to randomly fill out the test. (4) The Correction (K) scale is intended to identify psychopathologies in people who would otherwise have profiles within the normal range.

These scales are standardized to ensure that the averages are around 50 points, with scores more than 70 points considered high.

Statistical analysis

All MMPI data were compared with standard values calculated from measurements obtained from 114 Japanese men and 86 Japanese women in their twenties.[12] To assess the significance of differences between the groups, the Student's *t*-test, one-way repeated measures analysis of variance (ANOVA), or Tukey multiple comparison test was used, as appropriate. Probabilities of less than 0.05 were accepted as significant. Data were analyzed using IBM SPSS Statistics 20 for Windows (IBM Japan, Ltd, Japan).

Results

Comparison of preoperative and postoperative MMPI scores with standard values

The preoperative scores on the D, Hy, Pt, and Si scales were significantly higher than standard values for their generation, and the score on the Ma scale was significantly lower than standard values. The scores on the CNS, D, and Hy scales decreased significantly after surgery. However, the postoperative scores on the D, Pt, and Si scales were significantly higher than standard values, and the postoperative score on the Ma scale was significantly lower than the standard value (Table 2).

Thirty-five of the 119 patients had high scores (>70) on some clinical subscales. In 16 of the 35 patients with high scores before surgery, all scores were within normal ranges after surgery, but the other 19 patients still had high scores on some clinical subscales after surgery.

Download English Version:

https://daneshyari.com/en/article/3132172

Download Persian Version:

https://daneshyari.com/article/3132172

Daneshyari.com