

Evaluation of Life Quality of Patients Submitted to Surgery First and Conventional Orthognathic Surgery

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ABSTRACT

Background: The present study was conducted to compare surgery first and orthognathic surgery in terms of patient quality of life.

Materials & Methods: 56 patients with dento-skeletal malformations were divided into 2 groups of 28 patients each. Group I underwent surgery-first approach and group II had conventional orthognathic surgery. All patients underwent OQLQ-22 scale and OHIP.

Results: The mean OQLQ score at first administration in group I was 56 and in group II was 51. The mean OQLQ score at second administration in group I was 23 and in group II was 28. The mean OQLQ score at first administration in group I was 56 and in group II was 51. The mean OQLQ score at second administration in group I was 23 and in group II was 28. The difference was significant ($P < 0.05$).

Conclusion: Surgery-first orthognathic approach has proven to provide an immediate improvement of the quality of living.

Keywords: Dentofacial deformities, Orthognathic approach, Satisfaction.

INTRODUCTION

Dentofacial deformities have been described as changes that primarily affect the jaws and teeth, although the multiple craniofacial structures may also be affected. In most cases, they are the result of moderate or severe genetic distortions of the normal development process (such as mandibular prognathism, bimaxillary prognathism or retrognathism, maxillary vertical excess) and should be corrected using an integrated treatment of orthodontics and orthognathic surgery in adult orthodontics.¹

Patient satisfaction among subjects with facial skeletal discrepancies is a fundamental issue for orthognathic surgery. The primary factor in determining the level of patient satisfaction after orthognathic surgery is the perception of the changes and therefore the patient's opinion of the esthetics.² For the majority of these patients, the objective is to obtain a significant improvement in both the esthetics of their faces and oral functionality. At a psychological level, the surgeon's job is to prepare patients for the results of the operation before the surgery, so that the results can meet their expectations.³

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Surgery first is an orthognathic surgical procedure that is in constant evolution and diffusion.¹¹ Its success has been defined by the number of advantages offered and is definitively determined by the satisfaction of the patients themselves. The approach of surgery first differs from the traditional approach used in orthognathic surgery because it consists of only 2 phases: the surgery and the postsurgery orthognathic therapy.⁴ The Orthognathic Quality of Life Questionnaire (OQLQ-22) assess the impact of dentofacial deformities and the benefits of orthognathic surgical treatment on patients' quality of life. Oral Health Impact Profile (OHIP) evaluates the person's perception about quality of living in relation to oral conditions.⁵ The present study was conducted to compare surgery first and orthognathic surgery in terms of patient quality of life.

MATERIALS & METHODS

The present study was conducted among 56 patients with dento-skeletal malformations of both genders. All were informed regarding the study and their consent was obtained. Ethical clearance was obtained before starting the study.

Data such as name, age, gender etc. was recorded. Patients were divided into 2 groups of 28 patients each. Group I underwent surgery-first approach and group II had conventional orthognathic surgery. All patients were surgically treated with Le-Fort I and bilateral sagittal split osteotomies of the jaws. Patients in the test group had orthodontic brackets placed only 3 days before the surgical intervention. They were treated with the surgery-first approach.

All patients underwent OQLQ-22 scale and OHIP. OQLQ-22 focuses on one's dentofacial deformity in relation to quality of life and is rated on a 4-point scale with responses ranging from "bothers you a little" (score 1) to "bothers you a lot" (score 4). A total OQLQ score can range from 0 to 88. A lower score indicates better quality of life, and a higher score indicates poorer quality of life. OHIP includes 49 items, divided into 7 sections: functional limitation, physical pain, psychological discomfort, physical incapacity, psychological incapacity, social incapacity, and difficulty doing usual jobs. Results were tabulated and subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I: Distribution of patients.

Groups	Group I	Group II
Method	Surgery-First	Orthognathic Surgery
M: F	10:18	12:16

Table I shows that group I had 10 males and 18 females and group II had 12 males and 16 females.

Table II: Comparison of OQLQ score in both groups.

Administration	Group I	Group II	P value
First	56	51	0.04
Second	23	28	0.03

Table II, graph I shows that mean OQLQ score at first administration in group I was 56 and in group II was 51. The mean OQLQ score at second administration in group I was 23 and in group II was 28. The difference was significant ($P < 0.05$).

Graph I: Comparison of OQLQ score in both groups.

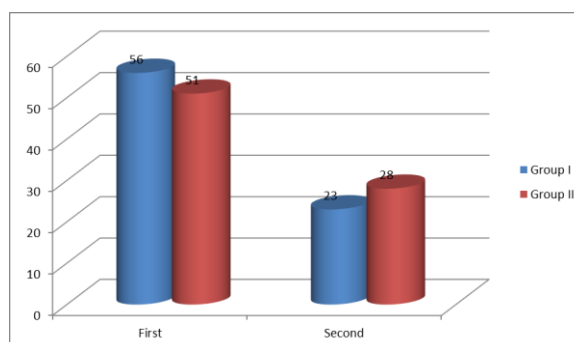
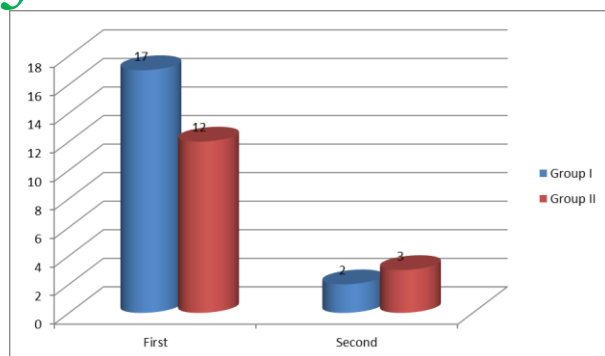


Table III: Comparison of OHIP score in both groups.

Administration	Group I	Group II	P value
First	17	12	0.05
Second	2	3	0.04

Table III, graph II shows that mean OQLQ score at first administration in group I was 56 and in group II was 51. The mean OQLQ score at second administration in group I was 23 and in group II was 28. The difference was significant ($P < 0.05$).

Graph II: Comparison of OHIP score in both groups.



DISCUSSION

Patients' motivation for the surgical option is the hope for improvement of their quality of life. The information about the effect of orthognathic surgery on patients during the recovery phase enables surgeons to better inform patients on their expectations from surgery.⁶ One of the important risk factors in low appearance self esteem is determined to be severe dentofacial deformity. Over the years, the patients with dentofacial deformities have lower mean quality of life values in comparison with those who have not.⁷ At present, the combination of the two treatment modalities, maxillofacial surgery and orthodontics, is one of the most important parts in the corrective treatment of malocclusion and facial deformities. Current advances in diagnostic and planning methods and surgical techniques have made orthognathic surgery safe and common for treating these deformities.⁸ The present study was conducted to compare surgery first and orthognathic surgery in terms of patient quality of life.

In present study, group I underwent surgery-first approach and group II had conventional orthognathic surgery. Group I had 10 males and 18 females and group II had 12 males and 16 females. Pelo et al⁹ in their study a total of 30 patients underwent orthognathic surgery for correction of malocclusions. Fifteen patients were treated with the conventional orthognathic surgery approach, and 15 patients with the surgery-first approach. The results showed significant differences in terms of the orthognathic quality of life questionnaire and the oral health impact profile scores within groups between the first and last administrations of both questionnaires. Differences in the control group between first and second administrations were also significant. Questionnaire scores showed an immediate increase of quality of life after surgery in

the surgery-first group and an initial worsening during orthodontic treatment in the traditional approach group followed by postoperative improvement.

We observed that mean OQLQ score at first administration in group I was 56 and in group II was 51. The mean OQLQ score at second administration in group I was 23 and in group II was 28. The mean OQLQ score at first administration in group I was 56 and in group II was 51. The mean OQLQ score at second administration in group I was 23 and in group II was 28. Eslamipour et al¹⁰ determined the impact of orthognathic surgery on quality of life in patients with dentofacial deformities at immediate presurgery and at 3-week, 3-month, and 6-month intervals following the surgery. The results showed significant reduction returned to baseline in OQLQ mean scores and aesthetic, awareness, and social subdomains in all 3 intervals after surgery. However oral function domain showed an increase at T2 and then a decrease at next intervals. Maximum and minimum effect size were observed in aesthetic (ES = 0.7) and oral function (ES = 0.3) domain, respectively.

Pahkala and Kellokoski¹¹ suggested that patients who had mandibular setback were more satisfied than patients with skeletal class II that had mandibular advancement. Choi et al¹² showed that there was no significant difference in QOL scores between different dentofacial deformities in any time point after surgery. More studies are necessary to clarify the relation between malocclusion type and changes QOL after orthognathic surgery.

CONCLUSION

Authors found that surgery-first orthognathic approach has proven to provide an immediate improvement of the quality of living.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

REFERENCES

1. Kiyak HA, McNeill RW, West RA. The emotional impact of orthognathic surgery and conventional orthodontics. *Am J Orthod* 1985; 88:224-34.

2. Hernandez-Alfaro F, Guijarro-Martinez R, Peiro-Guijarro MA. Surgery first in orthognathic surgery: what have we learned? A comprehensive workflow based on 45 consecutive cases. *J Oral Maxillofac Surg* 2014;72:376-90.
3. Cunningham SJ, Gilthorpe MS, Hunt NP. Are orthognathic patients different? *Eur J Orthod* 2000;22:195-202.
4. Cunningham SJ, Garratt AM, Hunt NP. Development of a condition-specific quality of life measure for patients with dentofacial deformity: I. Reliability of the instrument. *Community Dent Oral Epidemiol* 2000;28:195-201.
5. Iannetti G, Fadda TM, Riccardi E, Mitro V, Filiaci F. Our experience in complications of orthognathic surgery: a retrospective study on 3236 patients. *Eur Rev Med Pharmacol Sci* 2013;17:379-84.
6. Panula K, Finne K, Oikarinen K. Incidence of complications and problems related to orthognathic surgery: a review of 655 patients. *J Oral Maxillofac Surg* 2001;59:1128-36.
7. Holman AR, Brumer S, Ware WH, Pasta DJ. The impact of interpersonal support on patient satisfaction with orthognathic surgery. *J Oral Maxillofac Surg* 1995;53:1289-97.
8. Luther F, Morris DO, Karnezi K. Orthodontic treatment following orthognathic surgery: how long does it take and why? A retrospective study. *J Oral Maxillofac Surg* 2007;65:1969-76.
9. Pelo S, Gasparini G, Garagiola U, Cordaro M, Di Nardo F, Staderini E, Patini R, De Angelis P, D'Amato G, Saponaro G, Moro A. Surgery-first orthognathic approach vs traditional orthognathic approach: oral health-related quality of life assessed with 2 questionnaires. *American Journal of Orthodontics and Dentofacial Orthopedics*. 2017 Aug 1;152(2):250-4.
10. Eslamipour F, Najimi A, Tadayonfard A, Azamian Z. Impact of orthognathic surgery on quality of life in patients with dentofacial deformities. *International journal of dentistry*. 2017 Oct;2017.
11. R. H. Pahkala and J. K. Kellokoski, "Surgical-orthodontic treatment and patients' functional and psychosocial well-being *American Journal of Orthodontics and Dentofacial Orthopedics* 2007; 158-164.
12. W. S. Choi, S. Lee, C. McGrath, and N. Samman. Change in quality of life after combined orthodontic-surgical treatment of dentofacial deformities. *Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology and Endodontology* 2010; 46-51.