

The Effectiveness of Bimaxillary Osteotomy on the Psychological and Functional Status of Patients

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Abstract

Aim: The purpose of this study was to evaluate the psychological and functional status of patients who underwent bimaxillary orthognathic surgery at the Riyadh Military Hospital, RMH (Prince Sultan Military Medical City) in 2015.

Material and Methods: A survey study was carried out at the RMH. A total of 34 patients (11 male, 23 female) who underwent bimaxillary orthognathic surgery were included in the study. All the patients were asked to fill out a survey and the results were recorded. The results were analyzed statistically using SPSS statistics (Statistical Package for the Social Sciences).

Results: The total number of patients included in the study was 34 patients. The result showed that most of the patients had a positive impact from the procedure and were very satisfied with the result of the treatment. Male patients were more satisfied with their appearance after the procedure but apart from that there was no significant statistical difference between male and female patients.

Conclusion: Most of the patients were satisfied with the result of the treatment and had a positive impact from the procedure. However, it should be kept in mind that the number of patients included in the study was not high. Therefore, to get a more accurate result, a study with a larger number of patients needs to be carried out.

Keywords: Orthognathic Surgery; Bimaxillary; Patient Satisfaction

Introduction

Orthognathic surgery is a surgical procedure which involves moving the maxilla and/or mandible forward and/or bringing them backwards depending on the [1]. It is also sometimes called corrective jaw surgery case [2]. In some cases, patients might require simultaneous procedures on the maxilla and mandible. This procedure is called bimaxillary osteotomy [3].

Orthognathic surgery is performed to modify the state of the jaws to enhance dental impediment strength, enhance temporomandibular joint capacity, open the oropharyngeal aviation route, and enhance the patient's facial extents [4]. Today the treatment can range from a standard a surgical procedure to one with a combination of surgical with orthodontic treatment according to case severity [5]. The procedure can bring about excellent aesthetic results.

Segmental LeFort I osteotomy requires clinical aptitude in the administration of the maxillary pieces. In surgical cases exhibiting moderate maxillary choking-related with other maxillary issues, it might be a critical piece of the treatment arrange [6]. In several studies related to orthognathic surgery, improvement in functional status and facial appearance has been shown [7]. In psychological aspects, the psychoneurosis may give negative effects but not in the long term [8]. Some studies also reported the reason for orthognathic procedures is to improve the functional aspects rather than the improvement in appearance [9]. All patients who ended up with orthognathic surgery gained psychosocial advantages such as: increased self-esteem and improvement in interpersonal relationships [8].

Instruments such as “The Orthognathic Quality of Life Questionnaire (OQLQ)” were developed to measure the outcome of orthognathic treatment [10]. OQLQ measures using two groups of instruments: (i) generic measures and (ii) condition-specific measures which re-late to particular conditions, disease, population or problem [11].

Aim of the Study

The aim of this study was to evaluate the psychological and functional status of patients who underwent bimaxillary orthognathic surgery in 2015 at the RMH using a survey from a study carried out in Norway.

Materials and Methods

This study was carried out at the RMH in Riyadh during 2015. The number of participants in the study were 34 patients, who were seen at the oral and maxillofacial clinics at RMH. Ethical approval from the Ethics Committee was obtained at the beginning of the study, and informed consent was obtained before beginning data collection. The participants were in-formed about the examination procedures and were assured of the confidentiality of the collected information. Only those who gave consent were included in the research. Patients were asked to answer the questionnaire according to how they perceived themselves before and after the bimaxillary osteotomy procedure.

The results of the survey were recorded and were analyzed statistically using SPSS statistics (Statistical Package for the Social Sciences) [12].

Results

The total number of participants in the study was 34. Out of these, 11 of the patients were male, while 23 of the patients were females (Table 1). The age range of the male patients was 19 to 33 years (mean age was 26.3 years).

Gender	Number	Percentage
Male	11	32.40%
Female	23	67.60%
Total	34	100%

Table 1

The age range of the female patients was 17 to 33 years (mean age was 24.3 years).

When asked about the reason they decided to start the treatment, 22 of the patients (64.7%) said they did it to improve the dental appearance. 23 of the patients (67.6%) did it to improve the facial appearance. 13 patients (38.2%) did it to improve chewing ability, 8 of them (23.5%) did it to improve speech. 12 of the patients (35.3%) did it to prevent future problems related to teeth and jaws. 1 of the patients (3%) had other reasons (To improve the appearance of the gums and mouth closing) (Table 2). There was no significant statistical difference between the male and female patients (chi-square test).

Q1: What was the reason for your decision to start treatment?		
Answer	Patient No.	Percentage
a: Improve dental appearance	22	64.70%
b: Improve facial appearance	23	67.60%
c: Improve chewing ability	13	38.20%
d: Improve speech	8	23.50%
e: Prevent future problems related to teeth and jaws	12	35.30%
Other	1	2.90%
Total	34	100%

Table 2

27 of the patients (79.4%) said their dental appearance improved after the treatment. And 25 of them (73.5%) had better facial appearance. On the other side 12 of the patients (35.3%) had better chewing abilities. Also 5 of the patients (14.7%) had better speech and 2 of the patients (5.9%) had other reasons (The disappearance of pain in the jaw joint) (Table 3). There was a significant statistical difference between the male and female patients only in the dental appearance. Male patients all thought their appearance was better (chi-square test).

Q2: What are the improvements that have occurred after the treatment?		
Answer	Patient No.	Percentage
a: Dental appearance	27	79.40%
b: Facial appearance	25	73.50%
c: Chewing ability	12	35.30%
d: Speech	5	14.70%
Other	2	5.90%
Total	34	100%

Table 3

When asked about the positive impact on their social life among family, friends and col-leagues, 14 patients (41.2%) said they had a great impact with their family and friends and colleagues. 11 patients (32.4%) had some impact on their family and friends and 10 patients (29.4%) had some impact on their colleagues. 7 patients (20.6%) had no impact on their family and friends and 5 patients (14.7%) had no impact on their colleagues. 2 of the patients (5.9%) were not sure of any impact on their family and friends while 5 patients (14.7%) were not sure of any impact on their colleagues (Table 4 and 5). There was no significant statistical difference between the male and female patients (chi-square test).

Q3: Has the treatment had any positive impact on your social life among family and friends?		
Answer	Patient No.	Percentage
a: Among family and friends (No impact)	7	20.60%
b: Among family and friends (Some impact)	11	32.40%
c: Among family and friends (Great impact)	14	41.20%
d: Among family and friends (None sure)	2	5.90%
Total	34	100%

Table 4

Q4: Has the treatment had any positive impact on your social life among colleagues?		
Answer	Patient No.	Percentage
a: Among colleagues (No impact)	5	14.70%
b: Among colleagues (Some impact)	10	29.40%
c: Among colleagues (Great impact)	14	41.20%
d: Among colleagues (None sure)	5	14.70%
Total	34	100.00%

Table 5

28 of the patients (82.4%) were happy with the current experience and would have definitely had the treatment based on their experience. 1 of the patient (2.9%) would probably have it. 4 of the patients (11.8%) would probably not have it while 1 of the patients (2.9%) did not know if they would or would not have the treatment again (Table 6). There was no significant statistical difference between the male and female patients (chi-square test).

Q5: With your current experience, would you have had this treatment?		
Answer	Patient No.	Percentage
a: Definitely Yes	28	82.40%
b: Probably Yes	1	2.90%
c: Not probably No	4	11.80%
d: Not definitely No	0	0%
Don't know	1	2.90%
Total	34	100%

Table 6

23 of the patients (67.6%) were very satisfied with the result of the treatment. 3 of the patients (8.8%) were satisfied, 5 of the patients (14.7%) were somewhat satisfied and 3 of the patients (8.8%) were not satisfied with the treatment results (Table 7). There was a significant statistical difference between the male and female patients. Female patients were more dissatisfied (chi-square test).

Q6: a: Are you satisfied with the result of treatment?		
Answer	Patient No.	Percentage
Very satisfied	23	67.60%
Satisfied	3	8.80%
Somewhat dissatisfied	5	14.70%
Very dissatisfied	0	0%
If you are dissatisfied, what is the reason? (other)	3	8.80%
Total	34	100%

Table 7

17 of the patients (50%) had normal sensations in the face/lips/gums. 5 of the patients (14.7%) had somewhat reduced sensations. 6 of the patients (17.6%) had markedly reduced sensations. 4 of the patients (11.8%) had reduced sensations. 1 patient (2.9%) had

increased sensations and 1 patient (2.9%) had complete loss of sensations (Table 8). There was no significant statistical difference between the male and female patients (chi-square test).

Q7: How would you describe the sensation in the face/lip/gums at present?		
Answer	Patient No.	Percentage
Normal, almost normal	17	50%
Somewhat, reduced	5	14.70%
Markedly	6	17.60%
Reduced	4	11.80%
Increased	1	2.90%
Complete loss of sensation/Pain	1	2.90%
Total	34	100%

Table 8

The patients were also asked if the impaired sensations were a concern to them. 17 of them (50%) had normal sensations so they were not relevant. In the remaining, 9 patients (26.5%) had a mild concern, 7 patients (20.6%) had a moderate concern while 1 patient (2.9%) had a marked concern (Table 9). There was no significant statistical difference between the male and female patients (chi-square test).

Q8: Is the impaired sensation of concern to you because it affects your daily life?		
Answer	Patient No.	Percentage
Mild	9	26.50%
Moderate	7	20.60%
Marked	1	2.90%
Not relevant (normal sensation)	17	50%
Total	34	100%

Table 9

Discussion

Bimaxillary osteotomy is a noteworthy surgical technique [13]. Although the results can be amazing and very beneficial for the patient, the healing process itself can be long and difficult [14]. There is always a chance of neurosensory problems which can be a very challenging time for some patients [15].

Most of the patients chose to have the procedure done to improve their facial and dental appearance and according to the results most of the patients did have an improvement in facial and dental appearance. This could explain why most of the patients were satisfied with the results of the treatment and would definitely have had the treatment done based on their current experience. A similar study also showed improvement in the facial profile [16].

Male patients mostly showed satisfaction in their appearance as compared to female patients [17]. In our study, all the male patients thought their appearance was better after the treatment whereas majority of the female patients didn't. This could be because the female patients had a better result in mind and the result was not as they had expected.

Most of the patients also had a positive impact on their social life among family, friends and colleagues after the procedure. This could also be another reason for the overall satisfaction with the results of the treatment. Hence, this might be a motivational factor for some of them to get the treatment done and also recommend it to others. According to another study, patients were mostly satisfied with postsurgical results in social appearance and general health [18].

Even though most patients did not have neurosensory problems, some did have slight problems while a few also had marked impaired sensations [19]. This is a very important point and it could be the reason some of the patients were not happy with the results and would not have the procedure done again based on their experience. That is why it is imperative that each patient should be explained about this occurrence and proper consent should be taken. The final results should be made clear to them and care should be taken to explain the results in depth to patients who have very high expectations [15].

Conclusion

In conclusion, bimaxillary orthognathic surgery can be a life changing procedure for patients but care should be taken in explaining the positive as well as the negative aspects that could arise from this procedure to the patients. Also, in order to get a better idea of patients perspective on the procedure, a study with a much larger number of patients needs to be carried out.

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