INDEX COPERNICUS INTERNATIONAL

ORIGINAL ARTICLE

Comparison of quality of life before and after open septorhinoplasty with the WHOQOL-BREF questionnaire

Piotr Rot, Łukasz Skrzypiec, Marcin Jadczak, Dariusz Jurkiewicz

Clinic of Otolaryngology and Laryngological Oncology with the Clinical Facial-Maxillo-Maxillofacial Unit, Military Medical Institute;
Head of the Clinic: prof. dr hab. med. Dariusz Jurkiewicz

Article history: Received: 18.10.2018 Accepted: 23.10.2018 Published: 23.10.2018

ABSTRACT:

Introduction: The study aimed to assess the influence of rhinoplasty on the quality of different aspects of life. The study group included 79 patients with congenital or posttraumatic nasal deformities (38 males, 41 females) aged from 17 to 49 (mean age 20 years) with open septorhinoplasty.

Materials and Methods: Quality of life was assessed before and 3 months after surgery, using the WHOQOL-BREF questionnaire. Other patient data including demographic data, other surgeries and comorbidities were also registered. Completion of 71 preoperative and 70 postoperative questionnaires was accomplished.

Results showed statistically significant differences in the quality of life in all domains.

Discussion and conclusion: Based on the conducted studies and after analysis of available literature, it may be concluded that functional and plastic surgeries including septorhinoplasty have an influence on the quality of life. To control postoperative results, tools evaluating this aspect should be used.

KEYWORDS: quality of live, septorhinoplasty, WHOQOL-BREF

INTRODUCTION

The study aimed to assess the influence of rhinoplasty on the quality of different aspects of life. Rhinoplasty is a functional nasal surgery (performed for the improvement of nasal breathing) and plastic surgery (for aesthetic improvement). In accordance with evidence-based medicine, it appears pertinent to assess whether an invasive procedure such as rhinoplasty that is associated with health risks is justified. In addition, not all countries, including that of the researcher provide a full refund for expenditures incurred during this surgery. Thus, patients' self-funding leads to an increase of expectations regarding the surgery. A number of scales are used to assess specific postoperative results in rhinoplasty, including the subjective impression of patients undergoing the procedure. However, there is a lack of an appropriate instrument to examine the functional and aesthetic improvements [1]. We attempted to assess the global influence of the surgery on all aspects of life with a questionnaire that is not specific for rhinology, namely a general WHOQOL-BREF questionnaire.

MATERIALS AND METHODS

The retrospective study was conducted using a database of patients comparing the quality of life preoperatively and postoperatively. The study group included 79 patients (38 male, 41 female) aged from 17 to 49 (mean age 20 years old) who underwent open septorhinoplasty. Informed consent was obtained from each patient before study enrollment. Quality of life before and after 3 months after surgery was assessed using the WHOQOL-BREF questionnaire (consent to use this instrument was obtained). This scale was used to assess four domains like the somatic, psychological, social, and environmental domains. Additionally, other patient information was registered: demographic data, other surgeries and comorbidities. Seventy one preoperative and 70 postoperative forms were received.

RESULTS

Descriptive statistics (mean and standard deviation), Shapiro-Wilk test, Student t-test, and Cohen's d were used for data analysis. Statistical analysis was carried out using the STATISTICA 13.1 and the significance level was $p < 0.05$. The results with $0.05 < p < 0.1$ were statistically significant.

Consolidated results of all precomputed descriptive statistics with a normality test of distribution are given in Table 1. The cohort group presented higher scores in postoperative WHO-QOL-BREF compared to preoperative WHO-QOL- BREF scores in all domains.

Student t-test was conducted for independent samples to identify statistically significant differences in the quality of life levels before and after rhinoplasty. Results showed statistically significant

INDEX COPERNICUS INTERNATIONAL

Tab. I. Basic descriptive statistics of quantitative variables measured with the Shapiro-Wilk test.

	M	Mdn	SD	Sk	Kurt	Min	Max	S-W	SIG.
General									
Somatic domain	22.19	22.00	3.14	0.10	-0.01	15.00	30.00	0.99	0.303
Psychological domain	22.24	22.00	2.50	-0.69	2.06	13.00	27.00	0.94	<0.001
Social domain	12.18	12.00	1.71	-0.28	0.38	7.00	15.00	0.94	<0.001
Environmental domain	30.58	31.00	3.63	0.13	0.02	22.00	40.00	0.99	0.415
Group before surgery									
Somatic domain	18.66	20.00	5.10	0.12	-0.11	12.00	30.00	0.98	0.439
Psychological domain	17.04	21.00	7.62	-0.94	2.55	6.00	27.00	0.93	0.001
Social domain	8.36	11.00	5.73	-0.45	0.54	0.00	15.00	0.94	0.003
Environmental domain	20.92	27.00	14.22	0.19	-0.02	0.00	40.00	0.98	0.474
Group after surgery									
Somatic domain	20.23	22.00	5.48	0.21	0.62	02.00	29.00	0.95	0.269
Psychological domain	18.49	21.00	7.21	0.18	-0.43	02.00	27.00	0.91	0.179
Social domain	9.59	12.00	5.34	0.44	-0.74	00.00	15.00	0.87	0.005
Environmental domain	23.60	29.00	13.14	0.39	0.72	00.00	38.00	0.93	0.533

M – mean; Mdn – median; SD – standard deviation; Sk. – skewness; Kurt. – kurtosis; S-W – result of Shapiro-Wilk test

differences within the quality of life in somatic, psychological, and environmental domains. In all of the aforementioned, the results were higher in the group after surgery than the group before surgery, indicating that quality of life was improved after rhinoplasty. Size effect differences (Cohen's d) indicated that the strongest differences relate to the somatic and environmental domains; nevertheless, all the other domains showed medium effect sizes. The smallest difference was notable in the social domain, which implied that the surgery did not have a statistically significant influence.

DISCUSSION

Measurement of the quality of life is very important in the assessment of postoperative results in each case of treatments, including aesthetic defects in their scope. Quality of life is used as an assessment tool after surgical treatment of congenital malformations such as cleft palate, which shows an increase in quality of life.[2,3,4].

According to the American Society for Aesthetic Plastic Surgery statistics, there were 148,000 rhinoplasties performed in 2016 in the United States. This procedure is the sixth most popular plastic surgery performed in this country. There is lack of data on the number of surgeries in the reseracher's country. Therefore, it appears pertinent to assess whether this surgery is justified in accordance with evidence-based medicine.

In the era of evidence-based medicine, it is essential to find an assessment method of indications for surgery, as well as a tool, which would objectify the results of plastic surgeries. Thereby, new instruments should be developed and validated to assess the results reliably and repeatedly. Barone et al. researched the available instruments for the assessment of postoperative results after rhinoplasty. It was concluded that only patient-reported outcome measures (PROMs) are justified in plastic surgery because assessment of postoperative results depends on subjective feelings. Therefore, it appears pertinent to assess the influence of surgery on the quality of different aspects of life. However, the efficient instrument was not stated by the authors in the conclusions[1].

In another study assessing the results of surgical facial aesthetic treatment (different surgeries) using the FACE-Q scale, a need for the assessment of quality of life after surgical facial treatment was highlighted due to lack of another objective assessment method [5]. Systematic reviews emphasize the necessity of developing a standardized and clinically reliable way of verifying postoperative results . Most of the analyzed tools are based on quality of life measurements. [6,7,8]

In this study, the quality of life was evaluated using a validated instrument developed by the World Health Organization, which is an abbreviation for World Health Organization Quality of Life (WHOQOL-BREF). In addition, this questionnaire was acknowledged as a very useful instrument for the assessment of quality of life in the study population [9].

The results of this study showed statistically significant differences in the quality of life after a surgery in somatic, psychological, and environmental domains, which appears real in the context of recently conducted studies focusing mainly on psychological aspects. In one of the studies, it was confirmed that a study group qualified for rhinoplasty had increased anxiety (according to the Liebowitz Social Anxiety Scale) and decreased quality of life in comparison to the control group (in the SF-36 scale) [10]. Whereas, Hoeningman et al. stated that external nasal deformity is a clinical state which may negatively influence psychosocial functioning and human relations [11].

Additionally, it was researched whether some groups of patients may benefit from rhinoplasty. There was a significant overall in-

Tab. II. Różnice pod względem poziomu jakości życia w zależności od zabiegu plastyki nosa.

	GROUP BEFORE SURGERY (N = 71)		GROUP AFTER SURGERY (N = 70)				95% CI	
	M	SD	M	SD	t	p	LL	UL
Somatic domain	18.66	5.10	20.23	5.48	-3.317	0.003	-3.623	-0.811
Psychological domain	17.04	7.62	18.49	7.21	-2.432	0.021	-2.347	-0.321
Social domain	8.36	573	9.59	5.34	-1.768	0.182	-1.279	0.213
Environmental domain	20.92	14.22	23.60	13.14	-2.427	0.045	-3.517	-0.212

crease in patients' satisfaction after surgery (based on Rhinoplasty Outcomes Evaluation (ROE)); there were no significant differences in age, gender. There was a significant increase in the satisfaction in all groups [12,13]. There exist rationales that the improvement of quality of life after a surgery is permanent [14]. Mohammadshah et al. presented distinct results as these presented in this study and cited articles. According to their study, rhinoplasty as a surgical procedure is related to risk of failure; decreasing patients' satisfaction from the results of surgery, it may negatively influence on quality of life.

It should be highlighted that the results of this study may result in cultural differences and socioeconomic factors in the study population in comparison to other groups [15].

CONCLUSIONS

Based on the conducted studies and after analysis of available literature, it may be concluded that functional and plastic surgeries including septorhinoplasty have an influence on the patients' quality of life. There is a lack of the appropriate instruments to examine the postoperative results and to compare surgical techniques, as well as to specify a group which would be potentially benefit the most from surgery. It appears essential to conduct a study which may develop an instrument for the assessment of postoperative results in different cultural, racial, and age groups. Developing such an instrument, it is crucial to assess the influence of the surgical procedure on the quality of life.

REFERENCES

1. AlHarethy S., Al-Angari S.S., Syouri F., Islam T., Jang Y.J.: Assessment of satisfaction based on age and gender in functional and aesthetic rhinoplasty. Eur Arch Otorhinolaryngology 2017; 274 (7): 2809–2812.
2. Papi P., Giardino R., Sassano P., Amodeo G., Pompa G., Cascone P.: Oral health related quality of life in cleft lip and palate patients rehabilitated with conventional prostheses or dental implants. J Int Soc Prev Community Dent. 2015 Nov–Dec; 5 (6): 482–487.
3. Zeraatkar M., Ajami S., Nadjmi N., Golkari A.: Impact of oral clefts on the oral health-related quality of life of preschool children and their parents. Niger J Clin Pract. 2018 Sep; 21 (9): 1158–1163.
4. Hennocq Q., Person H., Hachani M., Bertin H., Corre P., Gorbonosov V., Ivanov A., Khonsari R.H.: Quality of life and nasal splints after primary cleft lip and nose repair: Prospective assessment of information and tolerance. J Craniomaxillofac Surg. 2018 Oct; 46 (10): 1783–1789.
5. Barone M., Cogliandro A., Di Stefano N., Tambone V., Persichetti P.: A systematic review of patient-reported outcome measures after rhinoplasty. Eur Arch Otorhinolaryngology 2017; 274 (4): 1807–1811.
6. Rhee J.S., McMullin B.T.: Outcome measures in facial plastic surgery: patient--reported and clinical efficacy measures. Arch Facial Plast Surg. 2008 May--Jun; 10 (3): 194–207.
7. Kosowski T.R., McCarthy C., Reavey P.L., Scott A.M., Wilkins E.G., Cano S.J. et al.: A systematic review of patient-reported outcome measures after facial cosmetic surgery and/or nonsurgical facial rejuvenation. Plast Reconstr Surg. 2009 Jun; 123 (6): 1819–1827.
8. Ching S., Thoma A., McCabe R.E., Antony M.M.: Measuring outcomes in aesthetic surgery: a comprehensive review of the literature. Plast Reconstr Surg. 2003 Jan; 111 (1): 469–480.
9. Ercolani M., Baldaro B., Rossi N., Trombini G.: Five-year follow-up of cosmetic rhinoplasty. J Psychosom Res. 1999; 47 (3): 283–286.
10. Honigman R.J., Phillips K.A., Castle D.J.: A review of psychosocial outcomes for patients seeking cosmetic surgery. Plast Reconstr Surg. 2004; 113 (4): 1229–1237.
11. Klassen A.F., Cano S.J., Scott A., Snell L., Pusic A.L.: Measuring patient-reported outcomes in facial aesthetic patients: development of the FACE-Q. Facial Plast Surg. 2010; 26 (4): 303–309.
12. Kowalska M., Skrzypek M., Danso F., Humeniuk M.: Assessment of reliability of the whoqol-bref questionnaire in a study of quality of life among adults, the economically active population of the Silesian agglomeration. Przegl Epidemiol. 2012; 66 (3): 531–537.
13. Radulesco T., Penicaud M., Santini L., Thomassin J.M., Dessi P., Michel J.: Outcomes of septorhinoplasty: a new approach comparing functional and aesthetic results. Int J Oral Maxillofac Surg. 2018 Feb; 47 (2): 175–179.
14. Kucur C., Kuduban O., Ozturk A., Gozeler M.S., Ozbay I., Deveci E. et al.: Psychological Evaluation of Patients Seeking Rhinoplasty. Eurasian J Med. 2016; 48 (2): 102–106.
15. Mohammadshahi M., Pourreza A., Orojlo P.H., Mahmoodi M., Akbari F.: Rhinoplasty as a medicalized phenomenon: a 25-center survey on quality of life before and after cosmetic rhinoplasty. Aesthetic Plast Surg. 2014; 38 (4): 615–619.

Word count: 1660 Tables: 2 Figures: – References: 15

Access the article online: DOI: 10.5604/01.3001.0012.6900 Table of content: https://otolaryngologypl.com/issue/11772

Corresponding author: Piotr Rot; Klinika Otolaryngologii CSK MON, Wojskowy Instytut Medyczny, ul. Szaserów 128, 04-141 Warszawa, Polska; tel.: +48 261 816 462; e-mail: prot@wim.mil.pl

Competing interests: The authors declare that they have no competing interests.

Cite this article as: Rot P., Skrzypiec Ł., Jadczak M., Jurkiewicz D.: Comparison of quality of life before and after open septorhinoplasty with the WHOQOL-BREF questionnaire; Otolaryngol Pol 2019; 73 (1): 13-16