

Effect of labiaplasty on women's sexual and psychological life

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Ethics Committee Approval

İstanbul Gelişim University, 20-05-2020, 2020-14-15. Written informed consent was obtained from all participants and those whose images were presented in the study.

All procedures in this study involving human participants were performed in accordance with the 1964 Helsinki Declaration and its later amendments.

Conflict of Interest

No conflict of interest was declared by the authors.

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Abstract

Background/Aim: The number of labiaplasties has increased in recent years, in accordance with the growing importance given to the female body. The main factors for labial surgery include emotional and physical discomfort, aesthetic concerns, and sexual disorders.

Methods: We designed this prospective cross-sectional study to evaluate women's sexual function and quality of life before and 3 months after labiaplasty. A total of thirty-four women with labium minus hypertrophy (LMH) and asymmetry were included in the study. Women with malignancies, psychological disorders, other gynecologic disorders, menopausal status, vulvar disorders, a history of vaginal or labial surgery, and those who were sexually inactive were excluded. We evaluated the Female Sexual Function Index (FSFI) and Beck Depression Inventory (BDI) scores before and 3 months after labiaplasty.

Results: The mean total FSFI score of the patients after the surgery (24.91 (2.74)) was higher than before the surgery (24.14 (3.06)) ($P=0.001$). Postoperative desire, arousal, lubrication, orgasm, satisfaction, and pain scores of the patients in FSFI were significantly higher ($P=0.023$, $P=0.026$, $P=0.015$, $P=0.05$, $P=0.022$ and $P=0.004$, respectively), while mean BDI scores were significantly lower (8.79 (4.51) vs. 10.90 (4.90)), $P=0.037$).

Conclusion: Labiaplasty is a comfortable, safe method with a short recovery period, satisfactory aesthetic results, and low complication rates. By using the radiofrequency with the trimming method, the sexual and quality of lives of the patients improve, along with their self-confidence and body image.

Keywords: Labiaplasty, Sexual life, FSFI, BDI

Introduction

The number of labiaplasties has increased in recent years in accordance with the growing importance given to the female body [1]. Genital aesthetic procedures have become important for women's sexual, psychological, and emotional lives [2]. The main indications for labial surgery are emotional, physical discomfort, aesthetic concerns, and sexual disorders. Labium minus hypertrophy causes problems during physical exercise, discomfort in tight clothes, and pain during sexual intercourse. Although the etiology remains incompletely elucidated, pregnancies, vaginal births, chronic irritation, and increased elasticity of the labial skin with age are among the reasons. We know that labiaplasty procedures positively affect women's sexual and quality of lives and increase their self-confidence. Hence, we designed this study to evaluate patients before and 3 months after labiaplasty with Female Sexual Function Index (FSFI) and Beck Depression Inventory (BDI). The purpose of our study is to assess how labiaplasty affects women sexually and psychologically.

Materials and methods

This single-center, prospective cross-sectional study was approved by İstanbul Gelişim University Ethics Committee (Date: 20-05-2020; No:2020-14-15) and performed in accordance with the ethical standards of the 1964 Declaration of Helsinki. Written informed consent was obtained from all participants. A total of thirty-four sexually active women between the ages of 18 and 50 years who had grade 2-3-4 labium minus hypertrophy and were admitted to the gynecology unit with labium minus hypertrophy (LMH) and asymmetry were included in the study. Labium minus hypertrophy was assessed according to Franco's classification, as follows: <2 cm protrusion of labium minus over labium majus indicates grade 1, 2-4 cm protrusion indicates grade 2, 4-6 cm protrusion indicates grade 3, and >6cm protrusion indicates grade 4 labium minus hypertrophy. We excluded women with malignancies, psychological disorders, other gynecologic disorders, menopausal status, vulvar disorders, a history of vaginal or labial surgery, and those who were sexually inactive. The FSFI and BDI scores of patients before and 3 months after labiaplasty were evaluated.

FSFI is a self-report inventory consisting of nineteen questions which is used for assessing female sexual function in six domains: Desire, arousal, lubrication, orgasm, satisfaction, pain. The questions comprise four items for arousal and lubrication, three items for orgasm, satisfaction, pain, and two items for desire. Items are scored on a five-point scale. BDI is a 21-question self-report multiple-choice inventory designed to assess the severity of depression, in which items are scored between 0-3 points.

To prevent bias, all patients who met the criteria within the designated period were included in the study group. None of the patients withdrew, which eliminated withdrawal bias. The researchers did not see the test results of the patients, which were instantly sent to the statistics team. Only validated and standardized scales were used to reduce the risk of bias.

Surgery technique

General anesthesia was administered before the procedure. All patients were operated in the lithotomy position by the same surgeon. Preoperative photographs were taken. The

incision lines were marked on the internal aspect of the right labium minus, which was placed on the left labium minus to mirror the line. Then, the external aspects of the labium minora were marked. With a radiofrequency needle electrode (Surgitron, Ellman®, USA) using 4.0 MHz radio wave, an incision was made at an angle of 45° in the sagittal plane on the inner and outer surfaces of labium minora, and the hypertrophied tissue was removed in the form of an apple slice. After a wedge-shaped piece was removed from the labium minora longitudinally, the remaining two surfaces of the labium were sutured together with 5/0 rapid absorbable vicryl sutures. Radiofrequency incisions preserve the slim form of the labium and achieve tissue hemostasis. Patients were discharged on the same day. Follow-up appointments were scheduled after 7 days, 1 and 3 months. The postoperative FSFI and BDI tests were administered, and photographs were taken at the 3-month visit (Figure 1).

Figure 1: Grade 3 labium minus hypertrophy in a 35-year-old woman (before and after surgery, Informed consent for the photograph was obtained from the patient).



Statistical analysis

The power of the study and sample size were calculated with G Power 3.1.9.4 power based on the data of a reference study with FSFI and BDI scores [3]. The calculated sample size was thirty-two. We recruited thirty-four participants, which yielded a power of 95% with a type-1 error of 5%. The clinical features of the group were analyzed with the Statistical Package for Social Sciences (SPSS) for Windows, version 22 (SPSS Inc. IL, USA). The normality of data distribution was evaluated with the Kolmogorov-Smirnov test. Reliabilities of the FSFI and BDI tests were calculated with Cronbach's Alpha test. Data were presented as mean (SD) for continuous variables. The differences between the groups were analyzed with the paired t-test for normally distributed variables, and Mann Whitney U test for non-normally distributed variables. A *P* value of <0.05 was considered statistically significant.

Results

The mean age of the participants was 30.7 (7.68) years (Range: 18-50 years). Among the patients, sixteen (47.05%) were single. Half of the patients were nulligravid. Forty-one percent had graduated from university. Fifteen patients (44.1%) suffered from aesthetic concerns, 20.5 % (n=7) from dyspareunia, 11.7% (n=4) from reduced sexual pleasure, 5.88% (n=2) from poor hygiene, and 17.6% (n=6) from emotional discomfort (Table 1).

Table 2 shows the mean FSFI and BDI subscale scores. Postoperatively, the mean FSFI scores of the patients were significantly higher (24.91 (2.74) vs. 24.14 (3.06), *P*=0.001), while mean BDI scores were significantly lower (8.79 (4.51) vs. 10.90 (4.90), *P*=0.037) compared to the preoperative period. In terms of subscales, FSFI desire, arousal, lubrication, orgasm, satisfaction, and pain scores of the patients were all significantly

higher 3 months after surgery ($P=0.023$, $P=0.026$, $P=0.015$, $P=0.05$, $P=0.022$ and $P=0.004$, respectively).

Hematoma was observed in only one patient after the surgery, which was successfully managed with cold compression. The satisfaction rate of the patients was 93.75 % (30/32).

Table 1: Demographic characteristics of patients

		(n=34)
Age		30.7 (7.68)
Parity	0	17 (50%)
	1	7 (20.58%)
	2	6 (17.64%)
	≥ 3	4 (11.76%)
Education	Elementary School	2 (5.88%)
	Secondary School	5 (14.70%)
	High School	7 (20.58%)
	University	14 (41.17%)
	Post-Graduate	4 (11.76%)
	Doctorate	2 (5.88%)
Patient complaints	Aesthetic concerns	15 (44.11%)
	Dyspareunia	7 (20.58%)
	Emotional discomfort	6 (17.64%)
	Reduced sexual pleasure	4 (11.76%)
	Poor hygiene	2 (5.88%)

Table 2: Mean FSFI with subscale scores and BDI scores

	Before surgery	After surgery	P-value
Desire	3.59 (0.77)	3.76 (0.81)	0.023
Arousal	4.32 (0.63)	4.45 (0.52)	0.026
Lubrication	4.3 (0.51)	4.44 (0.48)	0.015
Orgasm	4.23 (1.06)	4.34 (0.98)	0.005
Satisfaction	4.48 (0.89)	4.6 (0.8)	0.022
Pain	3.2 (1.24)	3.3 (1.24)	0.004
FSFI total score	24.14 (3.06)	24.91 (2.74)	0.001
BDI total score	10.90 (4.90)	8.79 (4.51)	0.037

Discussion

In the recent years, societal norms, evolving concept of beauty, and social media have affected women's awareness of their own bodies. Labiaplasty procedures have increased by 29.7% between 2015-2019 [4]. This is a prospective study that aimed to evaluate the sexual and psychological effects of labiaplasty on females.

Enlarged labia minora can cause unaesthetic appearance, irritation, difficulty wearing tight clothes, hygienic and sexual problems. A classification system was described by Franco in 1993 to determine the severity of labial hypertrophy in four stages [5]. A hypertrophic tissue of less than 2 cm is considered Stage I, between 2-4 cm, Stage II, between 4-6 cm, Stage III and that more than 6 cm is considered stage IV. We used Franco classification and included patients with grade 2-3-4 labial hypertrophy in our study. Labiaplasty procedure was defined by Hodgkinson in 1983 [6]. Many labiaplasty techniques have been described in the following years, such as those by Giraldo and Munhoz [7, 8]. The main methods for of labiaplasty include trimming technique and wedge excision. The trimming technique has a short operation time and can create light-colored labia minors. The disadvantages are longitudinal scar and irregular labial shapes. The wedge technique's advantage is that the natural labial tissue of patients is used, and its disadvantages include longer operation time, wound dehiscence, and dark-colored labia minora [8]. All methods can be performed by scissors, knife radiofrequency, and laser. The laser has been used in gynecology for over 40 years [9]. Many studies used CO2 laser and radiofrequency for labiaplasty and observed very few complications [9, 10]. The advantages of radiofrequency include limited thermal damage of only one micron and accelerated wound healing. Smarrito et al. [11] observed hematomas in only 3 of 231 patients, while 4.71% of patients had dehiscence. In another study, Smarrito observed only five patients with wound dehiscence, and no hematomas, necrosis, or sexual

dysfunction after surgery [12]. Alter et al. reported 4% complications and 93% improved self-esteem [13]. Pardo et al. described only a few complications of laser with hemostatic advantages [14]. We used the trim technique with radiofrequency for labiaplasty in this study and observed a 3.12% complication rate. We managed it with cold compression and the patient did not require a revision.

Labial minus hypertrophy can be associated with sexual problems, impairment of couple relations, and lower self-esteem. In this study, we investigated the differences in patient's sexual and psychological lives. The impact of labiaplasty on sexual life was assessed with Turkish FSFI which was developed by Aygin and Aslan [15]. The psychological effect was evaluated with the Turkish BDI questionnaire developed by Ulusoy [16]. FSFI is a self-report questionnaire of 19 items that comprises six domains: Satisfaction, desire, arousal, lubrication, pain, and orgasm. BDI is a 21-question self-report multiple-choice inventory. Items are scored between 0-3 points and designed to assess the depth of depression. According to a meta-analysis, the prevalence of female sexual dysfunction in premenopausal women is 40.9% [17]. Sir et al. [18] compared sexual dysfunction rates among women with labium minor hypertrophy (LMH) who did not undergo labiaplasty and healthy individuals and found that the LMH group had lower sexual function scores (24.18 (3.24) vs. 27.53 (4.43)). FSFI subsets of the LMH group, such as lubrication, orgasm, satisfaction, and pain, were significantly lower. They found that 86 percent of LMH patients had sexual problems. Our study's primary finding is that the lives of women who had labiaplasty improved both sexually and psychologically. The mean total FSFI score of the patients increased and BDI scores decreased significantly postoperatively. All FSFI subscales scores, especially pain and orgasm, showed statistically significant improvements after surgery. We can explain this with repair of functional discomfort with radiofrequency and improvement of emotional discomfort. We believe that improvement of sexual functions was also due to increased self-confidence, along with the physiological effect of surgery.

The strengths of the study include the fact that we could compare variables before and after the surgery, its retrospective nature, the performance of the operations by a single surgeon and the use of Turkish-adapted and validated scoring systems to assess the difference.

One limitation of our study is that some patients had sexual disorders before the surgery, so postoperative improvement may be expected. We can design another study to examine the change in sexual functions of patients who did not have sexual problems, who were operated on solely for aesthetic concern. Another limitation of the study is the short follow-up time of the cases. Also, all women included in the study were heterosexuals, we have not assessed lesbian couples. Among all, 77.8% of the patients participating in the study are high school graduates and above, hence, these women have a higher self-awareness. If we had evaluated these patients together with those with low education levels, we would have obtained different results. More comparative studies are needed in patients without sexual dysfunction and who are operated due to aesthetic concerns only.

Conclusion

Labiaplasty is a comfortable, safe method with a short recovery period, satisfactory aesthetic results, and low complication rates. With radiofrequency at trimming technique, patients' sexual functions and overall quality of lives improved, along with their body image and self-confidence.

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