

# Simultaneous Labia Minora and Clitoral Hood Reduction by Introducing a New Laser-assisted Technique: A Pilot Study

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## ABSTRACT

**Introduction:** Hypertrophy of labia minora can result in uncomfortable sexual or physical activity as well as aesthetic concerns. Currently, labiaplasty is the only treatment of choice which is performed by various techniques. We introduce a new laser-assisted technique for concurrent aesthetic labia minora and clitoral hood reduction. **Methods:** This experimental study was conducted between July and August 2021 on patients with hypertrophic labia minora. Patients were randomly selected using random number table. We included patients with esthetic concern, uncomfortable sexual intercourse or symptoms of local discomfort. Labia minora was completely resected using laser cuts (laser model), sparing only a thin layer at the base of labia minora. Then, clitoral hood was resected using laser cuts, leaving a tiny triangle-shaped remnant in the central area. This triangle-shaped area is then sutured to the surrounding tissues using a 3-0 monofilament suture. All the patients completed the Rosenberg self-esteem scale (RSEs), female sexual function index (FSFI) and genital appearance satisfaction scale questionnaires before and two weeks after the operation. **Results:** We analyzed 15 female patients with a mean age of 32.86±9.97 years. The mean RSEs score was 13±5.22 before and 23.93±3.91 after the intervention (p=0.001). All the patients had a significantly improved genital appearance after the operation (p<0.05). No complications were reported in patients. **Conclusion:** the introduced laser-assisted technique for labiaplasty has no significant complications and is also associated with significant improvements in self-esteem and genital appearance satisfaction scores.

**Keywords:** Labiaplasty; Labia minora hypertrophy; Clitorectomy; Laser cut; Female cosmetic genital

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## INTRODUCTION

Female cosmetic genital surgery (FCGS) has had an increasing trend, up to 200%, over the past five years (1, 2). Augmented exposure to model and idealized images of genital area through media and internet, as well as increased knowledge about FCGS are the possible causes of this increasing trend (1).

As a congenital or acquired condition, hypertrophy of labia minora can result in uncomfortable sexual or physical activity as well as aesthetic concerns in patients (3-6). Currently, surgical excision of the hypertrophic labia, also known as labiaplasty, is the only treatment of choice which is performed by various techniques (4). It should be noted that this is not only about the simple excision of the hypertrophic labia minora, but also reconstruction of the normal shape and preserving the original skin sensitivity is of an vital importance (7).

In the present study, we aimed to introduce a new laser-assisted technique for concurrent aesthetic labia minora and clitoral hood reduction, and to assess its efficacy by a pilot experimental study.

## MATERIAL AND METHODS

### Study design

This experimental study was conducted between July and August 2021 and we assessed patients with hypertrophic labia minora who were candidates for labiaplasty, for eligibility. Patients were randomly selected using random number table. We included patients with esthetic concern, uncomfortable sexual intercourse or symptoms of local discomfort. Patients with history of previous labiaplasty, diabetes mellitus, psychiatric disorders, taking injection or oral glucocorticoids and those not willing to take part in the study, were excluded. We strictly followed the Declaration of Helsinki in the present study and all the patients signed a written informed consent form. Demographic information was recorded in a pre-designed checklist. The patients were placed in lithotomy position and underwent local anesthesia with lidocaine 2%. The vulva and vaginal introitus were disinfected with iodophor and the surgical field was draped. Labia minora was completely resected using laser cuts, sparing only a thin layer at the base of labia minora. Then, clitoral hood was resected using laser cuts, leaving a tiny triangle-shaped remnant in the central area. This triangle-shaped area is then sutured to the surrounding tissues using a 3-0 monofilament suture. Every remaining bleeding in labial area was sutured using a 3-0 monofilament suture. All the procedures were done by a single surgeon.



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All the patients completed the Rosenberg self-esteem scale (RSEs) (8), female sexual function index (FSFI) (9) and genital appearance satisfaction scale questionnaires (10) before and two weeks after the operation. The RSEs questionnaire is commonly scored as a Likert scale. The questionnaire has 10 items which are answered on a four-point scale ranging from strongly agree to strongly disagree. FSFI is a validated questionnaire that assesses different domains of sexual function (desire, arousal, lubrication, orgasm, satisfaction and pain) in addition to providing an overall score regarding sexual function. The genital appearance satisfaction scale is a number of statements that women might make about their genitals.

Data were analyzed using Statistical Package for Social Sciences (IBM Corp. Released 2011. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp). Descriptive analysis was performed using mean and standard deviation as well as percentages and frequencies. Kolmogorov-Smirnov test was used to check the normal distribution of data. Comparison between groups was performed using t-test, and Mann-Whitney U test. Paired t-test was used to compare the changes within the groups. A p-value of less than 0.05 was considered as statistically significant.

## RESULTS

Finally, we analyzed 15 female patients with a mean age of 32.86±9.97 years, ranging from 21 to 55 years old. Among all study individuals 8(53.33%) patients had esthetic concern, 5(33.33%) had uncomfortable sexual intercourse and 2(13.33%) had symptoms of local discomfort. The mean RSEs score was 13±5.22 before and 23.93±3.91 after the intervention (p=0.001). Table 1 shows the distribution of responses to genital appearance satisfaction scale questionnaire, before and after the intervention. All the patients had a significantly improved genital appearance after the operation (figure 1, p<0.05).

Mean FSFI score was 17.78±3.34 before, and 23.48±1.80 after the intervention (P<0.001). Table 2 summarizes the sexual function measures scores in detail.

No complications including bleeding, scars or sexual dysfunction were reported in patients.



**Figure 1.** Pre- and post-operative views of concurrent labiaplasty and clitoral hood reduction by the new laser-assisted method.

## DISCUSSION

We found that the newly introduced laser-assisted method for concurrent labiaplasty and clitoral hood reduction, was associated with a significant improvement in RSEs, FSFI measures and genital appearance satisfaction scores. In addition, this technique was not associated with any complications in comparison to the common techniques.

To the best of our knowledge, this is the first study reporting this laser-assisted technique. Other common surgical techniques of labiaplasty are wedge resection, edge resection and central resection which have their specific strengths and weaknesses (4). Wedge resection is the most popular technique which tries to modify the labia by preserving the natural color, function or sensation (4). In this technique, the labia cannot be reduced too much and the patient will be safe from dryness, infections, vaginal discharge and discomfort in intercourse.

**Table 1.** The distribution of responses to genital appearance questionnaire, before and after the intervention.

Question	Before				After				p value
	Never	Sometimes	Often	Always	Never	Sometimes	Often	Always	
1	14(93.3%)	0	1(6.7%)	0	1(6.7%)	1(6.7%)	1(6.7%)	12 (80%)	0.001
2	0	1(5.9%)	3(20%)	11(73.3%)	12 (80%)	2(13.3%)	0	1(6.7%)	0.001
3	0	2(13.3%)	5(29.4%)	8(47.1%)	14(93.3%)	0	0	1(6.7%)	0.001
4	15(100%)	0	0	0	1(6.7%)	0	4(26.7%)	10(66.7%)	0.001
5	1(6.7%)	5(33.3%)	4(26.7%)	5(33.3%)	10(66.7%)	5(29.4%)	0	0	0.002
6	14(93.3%)	0	1(6.7%)	0	1(6.7%)	1(6.7%)	4(26.7%)	9(60%)	0.001
7	2(13.3%)	6(40%)	0	7(46.7%)	14(93.3%)	1(6.7%)	0	0	0.001
8	1(6.7%)	5(33.3%)	2(13.3%)	7(46.7%)	14(93.3%)	1(6.7%)	0	0	0.001
9	3(20%)	6(40%)	2(13.3%)	4(26.7%)	14(93.3%)	1(6.7%)	0	0	0.003
10	0	9(60%)	2(13.3%)	4(26.7%)	14(93.3%)	1(6.7%)	0	0	0.001
11	1(6.7%)	6(40%)	1(6.7%)	7(46.7%)	11(73.3%)	3(20%)	0	1(6.7%)	0.007

However, wedge dehiscence is a relatively common complication of this method. Edge resection is the removal of excessive labial tissue in the most protruded part by a straight, lazy S-, or W-shaped resection (11, 12). Surgeons usually use scalpel, diathermia or a combination of both for this procedure, using a clamp or not to control the bleeding. Scar contraction is a common complication of this technique which has been tried to be avoided using S-shaped or double-W-shaped incisions (11, 12). De-epithelialization and fenestration, also known as central resection, are being performed by removal of a triangle-shaped marking from the central part of labia minora using a scalpel (13, 14). Then a catgut is used to suture the rough edges together (14).

Reviewing the literature, we found that a few studies have already reported the outcomes of labiaplasty (15-17). Variability in surgical techniques, study design and outcome measures among studies with outcome reports, has made it difficult for researchers to reach a consensus. Satisfaction and self-esteem questionnaires were administered to the patients of that studies which were accompanied by a relatively high rate of satisfaction, ranging from 71% to 95% (15-17). In addition, no significant complications were reported following these procedures (17). These findings are in line with the results of our study in which there was no complications associated with the newly introduced laser-assisted labiaplasty technique. Moreover, patients had a significantly higher RSEs and better genital appearance satisfaction scale scores after the labiaplasty.

## CONCLUSION

In conclusion, the present study introduces a new laser-assisted technique for labiaplasty which has no significant complications and is also associated with significant improvements in self-esteem and genital appearance satisfaction scores. Future studies are recommended to be conducted with a larger sample size and longer duration of follow-up to determine the long-term efficacy and possible complications of this technique. Also, sexual function is another scale which should be considered in the further studies.

## ETHICAL CONSIDERATION

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## CONFLICT OF INTERESTS

None.

## ABBREVIATIONS

RSEs; Rosenberg self-esteem scale, FSFI; female sexual function index, FCGS; Female cosmetic genital surgery.

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