

## ORIGINAL PAPER

1. Obstetrician and Gynecologist, expert in Cosmetic, Regenerative and Functional Laser Aesthetics. <https://orcid.org/0000-0002-3585-1919>
2. Obstetrician and Gynecologist, UniRemington
3. Physician, Master in Epidemiology and Public Health, Biomedical Research Group, UniRemington <http://orcid.org/0000-0001-9485-7483>

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### Corresponding author:

Juan Fernando Bojanini Betancur

📍 Calle 19 A # 44-25 Office 2303 (Postal Code 050021). Tower of the Prado Clinic in Ciudad del Río, Medellín, Colombia.  
✉ [ginecologia@juanfernandobojanini.com](mailto:ginecologia@juanfernandobojanini.com)

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# Labiaplasty and genital cosmetic surgery techniques in Medellín, Colombia

## Labioplastia y técnicas de cirugía estética genital en Medellín, Colombia

Juan Fernando Bojanini-Betancur<sup>1</sup>, Edison Andrés Tavera-Agudelo<sup>2</sup>, Óscar Alejandro Bonilla-Sepúlveda<sup>3</sup>

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### ABSTRACT

**Introduction:** Female genital aesthetic surgery is in increasing demand; however, its technique and results are not well known. **Objectives:** To describe the sociodemographic data, clinical manifestations, postoperative results and satisfaction in a group of women who underwent female genital cosmetic surgery. **Methods:** Descriptive, retrospective study of an institutional database, in the period March 6, 2007 to January 14, 2021. Demographic and clinical data from medical records were analyzed using descriptive statistics. **Results:** Data were retrieved for 713 patients, mean age 34.3 years, 12 of whom were younger than 18 years. Before the intervention, 87.5 % (n= 624) of patients were dissatisfied with the appearance of their external genitalia, 74.1 % (n= 528) had discomfort with their genitalia and 53.4 % (n= 381) reported loss of sexual gratification. The most common findings on physical examination were hypertrophy of the labia minora (n= 616; 86.4 %) and redundant clitoral hood (n= 577; 80.9 %). The most commonly performed surgery consisted of labiaplasty (n= 609; 85.4 %) and clitoral hood reduction (n= 564; 79.1 %). Overall satisfaction at 8 and 30 days was 99.4 % (n= 709) and 93.3 % (n= 665), respectively. **Conclusions:** In the cohort studied, women achieved high rates of cosmetic satisfaction with surgical results and improvement in their functional satisfaction. There was a low rate of complications.

**Key words:** Vulva, Surgery, plastic, Cosmetic techniques.

### RESUMEN

**Introducción.** La cirugía estética genital femenina presenta una creciente demanda; sin embargo, su técnica y resultados no son bien conocidos. **Objetivos.** Describir los datos sociodemográficos, manifestaciones clínicas, resultados postoperatorios y la satisfacción en un grupo de mujeres a quienes se aplicó cirugía estética genital femenina. **Métodos.** Estudio descriptivo, retrospectivo de una base de datos institucional, en el periodo 6 de marzo de 2007 a 14 de enero de 2021. Se analizó los datos demográficos y clínicos de los registros médicos utilizando estadística descriptiva. **Resultados.** Se recuperaron los datos de 713 pacientes, con edad media de 34,3 años y 12 de las cuales tenían menos de 18 años. Antes de la intervención, el 87,5 % (n= 624) de pacientes estaban inconformes con el aspecto de sus genitales externos, el 74,1 % (n= 528) tenía incomodidad con sus genitales y 53,4 % (n= 381) manifestaron pérdida de gratificación sexual. Los hallazgos más comunes al examen físico fueron la hipertrofia de los labios menores (n= 616; 86,4 %) y el capuchón de clitoris redundante (n= 577; 80,9 %). La cirugía más efectuada consistió en labioplastia (n= 609; 85,4 %) y reducción del capuchón del clitoris (n= 564; 79,1 %). La satisfacción global a los 8 y 30 días fue de 99,4 % (n= 709) y 93,3 % (n= 665), respectivamente. **Conclusiones.** En la cohorte estudiada, las mujeres lograron altas tasas de satisfacción cosmética con los resultados quirúrgicos, y también experimentaron mejora en su satisfacción funcional. Existió una tasa baja de complicaciones.

**Palabras clave.** Vulva, Cirugía plástica, Técnicas cosméticas.

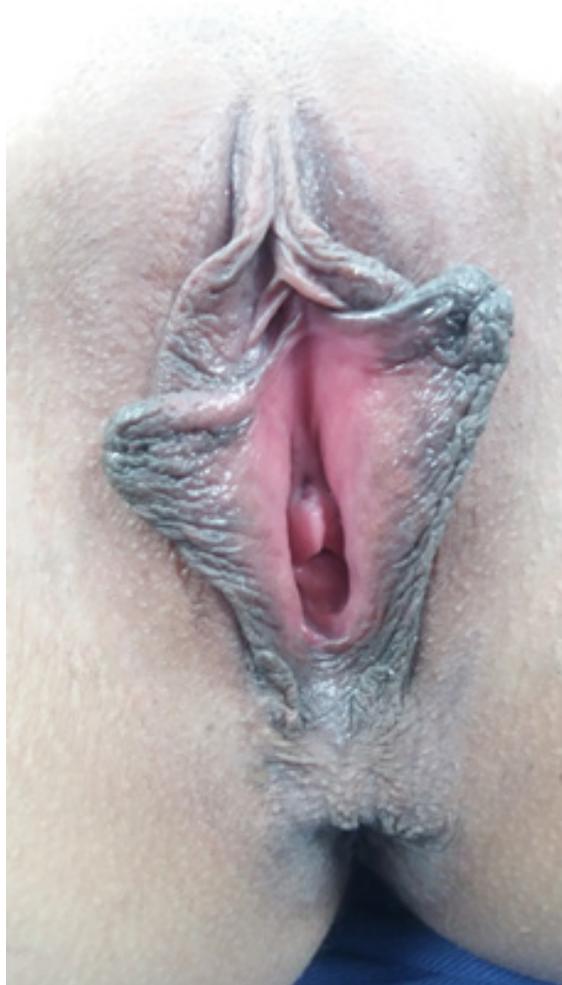
### INTRODUCTION

Female genital cosmetic surgery (FGCS) is defined as a vaginal or labial surgical technique with esthetic or functional intent<sup>(1)</sup>. In the field of gynecology, an increase in the number of patients is observed. Modern trends have shifted towards lack of pubic hair, making subtle labial irregularities more noticeable<sup>(2)</sup>. The most commonly related abnormality is labia minora hypertrophy and redundant clitoral hood. Figure 1.

Labiaplasty is the most frequently performed (FGCS) by plastic surgeons or gynecologists. In the United States, 5,070 procedures were performed



FIGURE 1. HYPERTROPHY OF LABIA MINORA (SOURCE JFBB).



in 2013 and about 12,000 in 2016, with an increase of 237 %<sup>(3,4)</sup>. The increase in requests is also observed worldwide<sup>(1)</sup>. Thus, the International Society of Aesthetic Plastic Surgery (ISAPS) describes an increase of 45% between 2015 and 2016<sup>(5)</sup>.

The technique of labiaplasty involves resecting the exuberant and unwanted greater / lesser labial tissue, often bilaterally. The most commonly used techniques are linear cutting, jockey stick, de-epithelialization and wedge resection<sup>(6)</sup>. Figure 2.

The objective of vaginoplasty, also known as vaginal rejuvenation, is to tighten or restore the vaginal contour. The most commonly used methods are anterior, posterior or lateral colporrhaphy<sup>(7)</sup>.

Laser vaginal rejuvenation is used to improve symptoms of vulvovaginal atrophy, particularly

in menopause, as it can increase the production of collagen and extracellular matrix with a consequent increase in the thickness of the vaginal epithelium, and potentially improve the contour of the vaginal caliber, increasing vaginal lubrication and tightening<sup>(8)</sup>.

Labia majora augmentation is another (FGCS) procedure. It is performed to modify the appearance of the labia majora by autotransplantation, fat injection or reticulate hyaluronic acid injection.

Hymenoplasty, also known as revirgination, is a controversial procedure that attempts to repair the hymen to a 'virginal' state. This is most often accomplished by suturing the remaining portions of the hymen back together, and is often performed in combination with vaginoplasty, to simultaneously decrease the caliber of the vagina.

The surgeries also aim to improve sexual gratification, for example, by intervening on the pubic mound, removing excess fatty tissue through liposuction. Clitoral hood resection (hoodectomy) describes the removal of excess tissue around the clitoris to improve sexual function by increasing sensitivity and allowing more direct contact with the clitoris during sexual activity. Finally, G-spot amplification involves injecting hyaluronic acid into the anterior vaginal wall, offering increased stimulation during intercourse<sup>(7)</sup>.

The objective of this study was to conduct a retrospective review of the sociodemographic data, clinical manifestations, postoperative results and satisfaction with genital cosmetic surgery of patients who attended the gynecology consultation in a genital aesthetic laser clinic in the city of Medellín, Colombia.

## METHODS

This is a descriptive, retrospective study of women who underwent genital cosmetic surgery between March 6, 2007 and January 14, 2021.

As secondary sources of information, medical records of women who underwent genital cosmetic surgery were selected from the personal records of one surgeon (JFBB), a gynecologist expert in genital aesthetic surgery and vaginal laser rejuvenation in the city of Medellín, located in northwestern Colombia.



FIGURE 2. LABIAPLASTY WITH LASER LINEAR CUTTING TECHNIQUE, PRE- AND POST-SURGICAL (SOURCE: JFBB).



Inclusion criteria were: female gender, esthetic or functional nonconformity with their external genitalia, congenital abnormalities or secondary to obstetric trauma, and previous unsatisfactory cosmetic surgeries. Exclusion criteria were if the women had records with relevant loss of information, women with body dysmorphic disorder or if they refused to undergo the intervention. After consecutive sequential sampling, 713 records were obtained. No cases were withdrawn; all were included in the analysis and were useful for the study.

After standardization of the research protocol, the information was collected, tabulated and verified in an Excel® database by the principal investigator JFBB. The following variables were evaluated in the study population: age, residence, marital status, obstetric history (pregnancy, births, cesarean section, live children). A hetero-directed form was filled out by the principal investigator about cosmetic and functional satisfaction before and after the procedure, type of surgery, symptoms associated with the surgical procedure and complications.

The most frequently performed surgery was labiaplasty, using the linear laser cutting techni-

que, also known as the edge method, according to Hodgkinson<sup>(1)</sup>. The area to be cut with the laser is marked with methylene blue, with mirror image in the ipsilateral lip to achieve symmetry between them, infiltration with lidocaine, placement of support stitches, cutting the redundant tissue with laser, decreasing the thickness of the lips and facing with subdermal stitches. It is imperative to leave a 1 cm cuff of labia minora to provide a functional 'seal' at the introitus.

Descriptive analysis of the sociodemographic and clinical variables was performed. Absolute frequencies and percentages, mean and standard deviation were calculated according to the nature and distribution of the variables. Normal distribution was validated using the Shapiro-Wilk goodness-of-fit test. Bivariate analysis was performed with the chi2 test to establish the association between cosmetic and functional satisfaction pre- and post-surgery. For hypothesis testing, a confidence interval of 95% and significance level of 5% were applied. SPSS statistics software version 23 was used.

In relation to ethical considerations, the present study is considered a study without risk, according to the classification set forth in Article 11



of Resolution No. 008430 of 1993 (issued by the Ministry of Health of Colombia), and complies with international standards, the Declaration of Helsinki, and the ethical guidelines for biomedical research prepared by the Council for International Organizations of Medical Sciences -CIOMS. The principal investigator JFBB has informed consent and authorization for the use of photographic records.

Between March 6, 2007 and January 14, 2021 (13 years, 10 months), following the criteria, 713 cases were included. The mean age was 34.3 years (SD 9.4), 84.7 % (n= 604) resided in Medellín, most were single (48.9 %; n= 349), followed by married women in 37.3 % (n= 266).

Within the obstetric history, the majority (40.5 %; n= 289) had not been pregnant and 59.5 % (n= 424) had gestated. The majority had two pregnancies (23.7 %; n= 169), followed by those who had one pregnancy (20.9 %; n= 149). The most frequent delivery was vaginal in 53.5 % (n= 227), 106 cases had cesarean section and in 91 patients the pregnancy ended in abortion.

The most frequent reason for consultation was dissatisfaction with the esthetics of their external genitalia (87.5 %; n= 624), 74.1 % (n= 528) reported genital discomfort with the use of underwear and with sports activity and 381 patients (53.4 %) informed loss of associated sexual gratification.

On physical examination, the most frequent finding was labia minora hypertrophy in 86.4 % (n= 616), followed by inadequate vaginal amplitude in 57.6 % (n= 411); the least frequent finding was clitoral hypertrophy in 11 cases (1.5 %) (Table 1).

Among the types of genital cosmetic surgery, the most frequent was minor reduction labiaplasty with laser in 85.4 % (n= 609), followed by resection of redundant clitoral hood in 79.1 % (n= 564), vaginal rejuvenation with laser 39 % (n= 278), resection and tightening of redundant labia majora skin (lifting) in 38 % (n= 271), perineoplasty in 8.6 % (n= 61), clitoroplasty in 1.7 % (n= 12), hymenoplasty in 1.4 % (n= 10) and G-spot injection in one case (0.1 %).

There was bleeding of the wound edges in the immediate postoperative period in 429 cases (60.2 %), of which the majority was mild (n= 59.9;

TABLE 1. ESTHETIC PERCEPTION OF GENITALIA BY THE PATIENT AND ACCORDING TO CLINICAL EVALUATION.

Variable	Patient perception	Clinical evaluation
	n=713 (%)	
<b>Vaginal amplitude</b>		
Adequate	297 (41.7)	302 (42.4)
Inadequate	414 (58.1)	411 (57.6)
No data	2 (0.3)	0
<b>Labia minora</b>		
Normal	129 (18.1)	97 (13.6)
Hypertrophic	584 (81.9)	616 (86.4)
<b>Labia majora</b>		
Normal	636 (89.2)	398 (55.8)
Flaccid	77 (10.8)	314 (44)
No data	0	1 (0.1)
<b>Clitoral hood</b>		
Normal	631 (88.5)	136 (19.1)
Redundant	80 (11.2)	577 (80.9)
<b>Hymen</b>		
Normal	705 (98.9)	704 (98.7)
Tear	8 (1.1)	9 (1.3)
<b>Clitoris</b>		
Normal	704 (98.7)	701 (98.3)
Hypertrophic	9 (1.3)	11 (1.5)
No data		1 (0.1)
<b>Perineum</b>		
Normal	No data	631 (88.5)
Relaxation		82 (11.5)

99.5 %), and in 7 cases (1 %) hematoma was present, being in 3 cases mild (0.4 %) and in 4 cases moderate (0.6 %). There was dehiscence in 22 cases (3.1 %) and urinary retention in 6 cases (0.8 %); 9 cases required reintervention (1.3 %) and there were no cases of wound infection.

The most common symptoms in the immediate postoperative period were genital edema in 59.3 % (n= 423), mostly mild (n= 385; 54 %), followed by pain in 26.9 % (n= 192), burning in 4.9 % (n= 35) and pruritus in 23 cases (3.2 %).

The evaluation of esthetic and functional satisfaction at pre- and 90 days post-surgery is presented (Table 2) and bivariate analysis is performed for overall satisfaction at pre- and 90 days post-surgery (Table 3).

## DISCUSSION

This study gathers the largest number of cases reported in the world bibliography of female genital cosmetic surgery. Therefore, it contributes to the knowledge of the surgical technique,



especially in Hispanic population, and analyzes the satisfaction associated to the surgical procedure.

The mean age in the present study was 34.3 years, similar to that found in other studies, with a range between 31.5 and 33.5 years<sup>(9)</sup>. Labiaplasty is the most frequently used procedure among female genital aesthetic surgeries; in this study it was performed in 85.4 % (n= 609). Few studies address the other techniques, partly because of their low frequency<sup>(10)</sup>.

This study showed that the main motivator to undergo labiaplasty was cosmetics, due to dissatisfaction with the appearance of the genitalia in 87.5% (n= 624), similar to what was found by Veale et al<sup>(11)</sup>, where the main symptom was cosmetic in 70.8% of the patients. Sharp et al<sup>(12)</sup> observed that three quarters of the patients had cosmetic reasons as their main driver for labiaplasty.

The second most frequent motivation was discomfort with the external genitalia in 74.1 % (n= 528), while Veale et al<sup>(11)</sup>, found this to be the fourth most important concern. Miklos and Moore<sup>(13)</sup> in their study reported that 37% of patients had esthetic and 32% functional non-sexual reasons.

Sorice et al<sup>(14)</sup> related that poor perception of their genitalia affected their quality of life. One

of the landmark studies describing the key motivations of women seeking labiaplasty reports reduced body image, sexual satisfaction and quality of life as the main motivators<sup>(11)</sup>. The present study detected that 53.4 % (n= 381) considered loss of sexual gratification. Turini et al<sup>(15)</sup> found a significant improvement in the total score of the female sexual function questionnaire in the domains of pain and enjoyment.

In Doyan and Yassa's study<sup>(16)</sup>, up to 30% of the women thought they had normal genitalia, and in the present study it was found that 12.5% (n= 89) were satisfied with the appearance of their genitalia, and the motivation with surgery was to seek further improvement.

The literature describes high rates of patient satisfaction and low rates of complications associated with labiaplasty, Crépaux et al<sup>(17)</sup> found 95 % satisfaction and 94 % functional improvement, Propst et al<sup>(9)</sup> reported 95.2 % overall satisfaction. Sharp et al<sup>(12)</sup> noticed statistically significant rates of satisfaction with genital appearance ( $p < .001$ ), sexual satisfaction ( $p = .009$ ) and psychological well-being ( $p < .001$ ) compared to their levels before surgery.

With the laser labiaplasty technique, Bizjak-Ogrinc et al<sup>(18)</sup> found an overall satisfaction of 100 %. In the present study of laser labiaplasty, overall satisfaction at 8 days was 99.4 % (n= 709), cosmetic 99.3 % and functional 99.3 %, with a low rate of complications.

The major limitations of this study were its retrospective nature, the heterodirected satisfaction survey of the interviewer may bias the responses, subjectivity may be present in the concept of beauty on the part of the patient and examiner, and the results correspond to a specific cohort in the experience of a gynecologist, which does not allow inferences in the experience of general practice.

TABLE 2. EVALUATION OF ESTHETIC AND FUNCTIONAL SATISFACTION AT PRE- AND 90 DAYS POST-SURGERY.

Surgical area evaluated	Pre-surgery n (%)	Post-surgery n (%)
<b>Cosmetic satisfaction</b>		
Satisfied	89 (12.5)	659 (92.4)
Dissatisfied	624 (87.5)	6 (0.8)
No data		48 (6.7)
<b>Functional satisfaction</b>		
Satisfied	185 (25.9)	664 (93.1)
Dissatisfied	528 (74.1)	1 (0.1)
No data		48 (6.7)

TABLE 3. BIVARIATE ANALYSIS FOR OVERALL SATISFACTION AT PRE- AND 90 DAYS POST-SURGERY.

Variable	Outcome				OR	95% CI		p
	Satisfied		Not satisfied			Lower limit	Upper limit	
	n	%	n	%				
Pre-surgery	89	12.5	324	87.5	2.417	335	421	0.0000
Post-surgery	664	93.1	1	0.1				



In conclusion, in the cohort studied, women achieved high rates of cosmetic satisfaction with surgical outcomes, and also appeared to experience improvements in their functional satisfaction. Most were associated with physical/functional motivations congruent with the physical findings. Surgery performed by a skilled gynecologist was safe and was associated with low complication rates.

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