UNIVERSITY OF MEDICINE AND PHARMACY
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VAGINAL REJUVENATION AND ITS IMPACT ON QUALITY OF LIFE
PhD Summary

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Table of contents

Introduction

Vaginal rejuvenation is a rapidly evolving field situated at the crossroads of medicine, aesthetics, and women's rights. As demand for these procedures continues to rise, so does the need for evidence-based practice, ethical transparency, and personalized care. From ancient misconceptions to social pressures and current innovations, this area – once considered taboo – reflects the broad changes in how female sexual health is discussed and managed.

Advances in surgical techniques, laser and radiofrequency devices, injectables, and regenerative therapies hold great potential to improve both sexual quality of life and overall well-being for patients experiencing related symptoms. With these growing possibilities, it is more important than ever for specialists to take the necessary steps to ensure safety, fairness, and that patients make fully informed, conscious decisions regarding their treatment.

This thesis contributes to the scientific literature on vaginal rejuvenation by analyzing the therapeutic pathway of patients included in our study. It presents a comparative evaluation of existing pre- and peri-intervention protocols, and follows the outcomes of patients who underwent these procedures, particularly in terms of adverse effects, post-treatment satisfaction, and the incidence of additional interventions.

The results obtained through this doctoral research highlight improvements in sexual well-being, reductions in vaginal dryness, and relief from stress urinary incontinence. These clinical gains, along with the favorable safety profile observed during follow-up, support the validity and effectiveness of the pre-, peri-, and post-procedural protocol implemented in this work.

It is crucial that future research focuses on comprehensive clinical studies, the implementation of objective and standardized measures to assess therapeutic outcomes, and the development of personalized care models that consider individual anatomical differences and prioritize the long-term well-being of patients. As aesthetic gynecology continues to advance, its legitimacy will increasingly rely on specialists' ability to balance technological innovation with unwavering ethical standards.

Overall, vaginal rejuvenation goes beyond being merely a trend and establishes itself as a medical discipline with significant potential to transform the perception of women's health, bodily autonomy, and personal aesthetic choices.

Working hypothesis and general objectives

The aim of this paper is to study the effectiveness and safety of labiaplasty and vaginal rejuvenation using a non-invasive technique, namely laser technology. The research focuses on the reasons patients seek these procedures, postoperative complications, and the level of patient satisfaction with the outcomes.

The main objectives are:

- to provide a demographic description of the studied sample;
- to analyze the patients' personal medical history, with a focus on gynecological background;
- to identify the reasons for requesting the procedures;
- to describe postoperative complications;
- to assess the level of patient satisfaction and correlate it with the initial motivations and any postoperative complications.

General research methodology

The study is a retrospective observational analysis of data collected from patients who presented to a single medical center over a five-year period for labiaplasty or vaginal rejuvenation procedures. The study methodology includes the following stages:

- description of an interventional protocol;
- definition of inclusion and exclusion criteria for patient selection;
- collection of demographic data (biological and social sex, age);
- collection of gynecological history (menarche, number of pregnancies, number and type of births, other gynecological conditions);
- collection of personal medical history (systemic diseases, ongoing medication, previous surgeries);
- assessment of reasons for presentation and request for the procedure (aesthetic concerns, functional or sexual discomfort, recurrent infections, personal hygiene issues);
- evaluation of the type of procedure performed (labiaplasty, external/internal/combined vaginal rejuvenation);
- evaluation of postoperative complications (local discomfort, bleeding, wound infection, wound dehiscence, etc.) and recovery time;
- evaluation of patient satisfaction using the sGAIS (*Subject Global Aesthetic Improvement Scale*);
- assessment of patients' subsequent request for additional treatments following the initial procedure;
- correlation between the initial reason for presentation, postoperative complications, and patients' subjective satisfaction level.

Study 1: Laser Labiaplasty and Vaginal Rejuvenation: Our Protocol and a Narrative Review on Protocols, Safety, and Outcomes

Introduction

Labiaplasty, a surgical intervention designed to reshape and reduce the labia minora, has seen a notable increase in demand driven by both functional impairments and aesthetic preferences. While traditional surgical techniques have long been the standard, advancements in laser technology have introduced new possibilities for reducing tissue trauma and improving recovery times. However, the diversity in surgical protocols and patient outcomes reported in the literature underscores the need for standardized approaches that maximize safety and patient satisfaction. This narrative review aims to contextualize the current evidence on laser labiaplasty, discuss safety considerations, and present our center's experience with a standardized laser protocol developed to optimize patient care.

Materials and Methods

We performed a comprehensive review of existing literature addressing laser labiaplasty protocols, safety profiles, and clinical outcomes. Concurrently, we analyzed retrospective data from patients treated at our center using a standardized CO_2 laser labiaplasty protocol. Key elements of our protocol include precise preoperative evaluation, aseptic technique, laser settings tailored to tissue characteristics, and a structured postoperative care plan emphasizing pain management and infection prevention. Patient outcomes were assessed through postoperative follow-ups, with data collected on complication rates, healing times, and patient satisfaction measured via validated questionnaires.

Results

Our experience demonstrates that laser labiaplasty, when performed following a strict protocol, is associated with high levels of patient satisfaction and a low incidence of complications. Minor postoperative issues such as transient edema and mild discomfort were reported but resolved with conservative management. The use of laser technology contributed to reduced intraoperative bleeding and more precise tissue excision, leading to accelerated wound healing and improved cosmetic outcomes. Our narrative review corroborates these findings, showing that centers adopting standardized laser protocols

generally report fewer complications and enhanced patient-reported outcomes compared to traditional methods.

Conclusion

Laser labiaplasty represents a promising evolution in aesthetic gynecology, offering a minimally invasive option with improved safety and efficacy profiles. The success of the procedure depends heavily on individualized patient assessment, surgeon expertise, and strict adherence to optimized protocols. While early results are encouraging, further prospective, multicenter studies are needed to establish long-term outcomes and refine best practice guidelines. Our center's protocol provides a valuable framework that may serve as a reference model for improving clinical outcomes and patient satisfaction in laser labiaplasty and vaginal rejuvenation.

Study 2: Efficacy and Patient Satisfaction of Laser Labiaplasty for Labia Minora Hypertrophy: A Retrospective Analysis

Background

Labia minora hypertrophy is a common condition that can cause both aesthetic dissatisfaction and functional discomfort for affected women, negatively impacting their quality of life and sexual self-esteem. While traditional surgical labiaplasty techniques have proven effective for labial reduction, they are often accompanied by longer recovery periods, increased postoperative pain, and a higher risk of complications such as infection, scarring, and sensory changes. In recent years, laser labiaplasty has emerged as a minimally invasive alternative, promising reduced operative trauma, quicker healing, and improved cosmetic outcomes. This study seeks to assess the efficacy, safety profile, and overall patient satisfaction with laser labiaplasty specifically using a CO_2 laser for the reduction of hypertrophic labia minora.

Patients and Methods

A retrospective review was performed on 60 female patients presenting with symptomatic labia minora hypertrophy who underwent laser labiaplasty between 2020 and 2024. Inclusion criteria encompassed patients with primary aesthetic or functional complaints. Baseline evaluations included detailed medical histories, comprehensive gynecological examinations, and documented patient concerns related to appearance, discomfort during physical activity, or sexual intercourse. The surgical intervention was carried out under local anesthesia with a CO_2 laser device employed for precise excision of excess tissue, avoiding traditional scalpel use and eliminating the need for suturing. Postoperative assessments were conducted via scheduled follow-up visits at 1 week, 1 month, and 6 months, supplemented by structured telephone interviews. Outcomes measured included incidence and nature of complications, duration of recovery, return to daily activities, and subjective patient satisfaction as quantified by the *Subjective Global Aesthetic Improvement Scale* (sGAIS), ranging from 1 (worse) to 5 (excellent improvement).

Results

The cohort had a mean age of 34.7 years (with a range of 21 – 52 years old), with the predominant reasons for seeking surgery being aesthetic concerns (85%) and functional discomfort, including irritation and dyspareunia (55%). Minor postoperative complications

were limited to transient bleeding in 10% of cases and mild discomfort or edema in 25%, all resolving within two weeks without intervention. Notably, no severe adverse events such as infection, significant scarring, or sensory deficit were reported. Recovery time was notably brief, with patients resuming normal daily activities within an average of 5 days. Patient-reported outcomes showed high satisfaction levels, with 92% scoring their postoperative appearance and comfort as significantly improved (sGAIS scores 4 or 5). Additionally, many participants emphasized enhanced sexual confidence and comfort.

Conclusion

Laser labiaplasty using a CO_2 laser presents a safe, effective, and minimally invasive option for the management of labia minora hypertrophy. The procedure is associated with low complication rates, minimal postoperative discomfort, and rapid recovery, resulting in high levels of patient satisfaction for both aesthetic and functional outcomes. Given these findings, laser labiaplasty should be considered a valuable alternative to conventional surgical techniques, particularly for patients prioritizing less invasive approaches and a quicker return to normalcy.

Study 3: Post-Procedural Infection Risk Following Laser Vaginal Rejuvenation: Clinical Experience from a Single Center

Introduction

Genitourinary syndrome of menopause (GSM) and vulvovaginal atrophy (VVA) are common conditions that significantly impair women's quality of life. Symptoms such as vaginal dryness, irritation, painful intercourse (dyspareunia), and urinary incontinence often result in discomfort and reduced sexual wellbeing. Traditional management strategies primarily involve hormonal replacement therapy and, in some cases, surgical interventions. However, these treatments are not suitable or effective for all patients due to contraindications, side effects, or patient preferences. Recently, laser vaginal rejuvenation has emerged as a minimally invasive procedure designed to restore vaginal tissue health, improve mucosal elasticity, and relieve symptoms with minimal downtime and a low risk of complications.

Patients and Methods

This retrospective study evaluated 53 female patients who underwent laser vaginal rejuvenation either internally, externally, or as a combined approach at a single clinical center over a five-year period. Patient demographics, gynecological and medical histories, indications for treatment, details of the laser procedure, and post-treatment clinical outcomes were systematically collected. Follow-up assessments included patient-reported symptom relief, physical examinations, and microbiological cultures of genital secretions to monitor for potential infections.

Results

The primary indications for treatment were vaginal laxity (69.8%), urinary incontinence (47.2%), and general vaginal discomfort such as dryness or irritation (15.1%). Most of the patients (90.6%) received combined internal and external laser therapy, most commonly undergoing three treatment sessions spaced several weeks apart. Post-procedural adverse effects were minimal and transient, consisting mainly of mild discomfort and minor bleeding in three cases, which resolved without intervention. Importantly, no cases of wound infection or serious complications were identified during follow-up visits. This absence of infectious complications was further supported by negative genital cultures collected postoperatively.

Conclusion

Our findings indicate that laser vaginal rejuvenation is a safe and well-tolerated procedure, with high patient compliance and satisfaction rates. Although the study's descriptive and single-center design limits the potential for generalization to the population of these results, the outcomes align with broader clinical evidence supporting the procedure's efficacy in alleviating symptoms related to GSM and VVA while minimizing infectious risks. Further multicentric and randomized studies are recommended to strengthen the evidence base and optimize patient selection and procedural protocols.

Conclusions and personal contributions

General conclusions

This paper presents a retrospective and methodical evaluation of the efficacy and safety of labiaplasty in the treatment of labia minora hypertrophy, as well as of vaginal rejuvenation using laser technology. It emphasizes both clinical and functional dimensions, along with aesthetic and psychosocial aspects. The study was conducted on a sample of 60 patients who underwent labiaplasty and 53 patients who presented for vaginal rejuvenation, all treated in a single medical center over a five-year period, providing a solid data foundation for outcome assessment.

The analysis revealed a high rate of postoperative satisfaction, with 92% of patients reporting a "significant" or "very significant" improvement in their condition, both aesthetically and functionally, according to the Subject Global Aesthetic Improvement Scale (sGAIS). The satisfaction level directly correlated with a low incidence of postoperative complications, the most common being minor bleeding and transient local discomfort. No cases of wound infection, hematoma, or other serious complications were recorded, highlighting the favorable safety profile of this minimally invasive approach.

In labiaplasty procedures, the use of CO_2 laser enabled precise tissue excision, effective hemostasis, and eliminated the need for sutures. This contributed to reduced postoperative pain, a shorter recovery period, and improved aesthetic outcomes. These benefits were further supported by follow-up assessments at one, three, and six months, which showed optimal healing and significant resolution of the initial complaints.

A notable observation was the association between obstetric history—particularly multiple pregnancies—and the degree of postoperative discomfort. This suggests a need for additional counseling and potentially a tailored approach for multiparous patients.

Motivations for seeking treatment varied, with aesthetic concerns dominating (85%), often accompanied by functional symptoms such as discomfort during physical activity or sexual intercourse. The study emphasizes that while aesthetic perceptions of the genital area are deeply shaped by modern cultural and social norms, there is often a genuine impairment in quality of life, which supports surgical intervention.

In conclusion, laser-based labiaplasty and vaginal rejuvenation are shown to be viable, effective, and safe options for women seeking correction of labial hypertrophy, whether for functional or aesthetic reasons. The results also highlight the need for continued research into these procedures, including the development of a standardized classification system for

labial hypertrophy and the implementation of unified procedural protocols to improve efficacy and satisfaction while minimizing postoperative risks and complications. Going forward, a multidisciplinary approach is essential for patients requesting these procedures—one that integrates medical evaluation, psychological counseling, and a critical analysis of patient expectations to ensure ethical, patient-centered care.

Personal contributions

The originality of this doctoral thesis lies both in its practical applicability and in its comprehensive perspective on a medical intervention that remains sensitive and controversial within modern gynecological practice. The elements that define the original character of the research are as follows:

- The implementation and analysis of a state-of-the-art, minimally invasive method (labiaplasty and vaginal rejuvenation using CO_2 laser) in a real clinical setting, based on a relatively large sample size, allowing for the extraction of conclusions relevant to current medical practice;
- The integration of a detailed topographic classification of labial hypertrophy (types I, II, and III) and its correlation with symptomatology and postoperative satisfaction levels, offering a personalized and patient-adapted approach superior to traditional classifications based solely on measurements;
- A comprehensive evaluation of patient satisfaction using a validated scale (sGAIS – Subject Global Aesthetic Improvement Scale), correlated with analysis of motivations for presentation, complications, and changes in quality of life, all carried out with statistical rigor;
- A contribution to the Romanian medical literature on genital aesthetic surgery, a field that remains relatively under-documented at the national level, by providing concrete data on complication rates, laser technique efficacy, and patient satisfaction levels;
- An integrated sociological and psychological perspective on the intervention, including a critical reflection on aesthetic pressures and the influence of mass media on women's perceptions of genital anatomy, which adds depth and balance to the analysis of a sensitive topic;
- The clinical relevance of the conclusions, which may serve as a foundation for the development of future best-practice protocols for performing labiaplasty and

vaginal rejuvenation with laser, as well as for advocating the introduction of official guidelines for preoperative counseling and postoperative monitoring.

Thus, this thesis offers an original and significant contribution to the understanding, implementation, and validation of an innovative technology in gynecological aesthetic surgery, delivering tangible benefits to both the medical community and patients.

List of published papers

1. **Demirgean F**, Albu S, Costache DO, Constantin M. (2025). Efficacy and Patient Satisfaction of Laser Labiaplasty for Labia Minora Hypertrophy: A Retrospective Analysis. Romanian Journal of Military Medicine. Q4, IF=0,1. 128. 234-241. 10.55453/rjmm.2025.128.3.7.
2. **Demirgean F**, Albu S, Constantin MM, Streinu-Cercel A. Laser labiaplasty and vaginal rejuvenation: how to reach zero post-operative infections. An expert opinion and short narrative review on protocols, safety and outcomes. GERMS.Q3, IF=1,7. 2025;15(2):121-126. doi: 10.18683/germs.2025.1462
3. **Demirgean F**, Albu S, Constantin MM, Streinu-Cercel A. Post-procedural infection risk following laser vaginal rejuvenation: clinical experience from a single center. GERMS. Q3 IF=1,7. 2025;15(2):116-120. doi: 10.18683/germs.2025.1461

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