

Laser-Assisted Labiaplasty for Hypertrophic Labiaminora Without Wound Closure

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1. Abstract

1.1. Objective: We report a patient of symptomatic labia minora hypertrophy, who underwent a 2940nm Erbium laser-assisted labiaplasty with a Kelly vascular clamping the cutting margin. Postoperative wounds were not closed with sutures and well healing at third week without complications.

1.2. Case Report: A 49-year-old female, G4P4, complained of both protruding labia minora enlargement and darkness, which caused functional and aesthetic problems. A pelvic examination revealed that her labia minora were asymmetric, hypertrophic, obvious darker margin, 4.5cm in length from the base to the edge and 0.5cm in largest thickness. She underwent a 2940nm Erbium laser-assisted labiaplasty (FotonaSmooth XS®, Fotona®, Slovenia) under general anesthesia. The cutting hand piece was R11at LP mode with 10Hz, 120 mJ/cm² and 2mm spot size. A pair of Kelly vascular clamp was placed along the cutting margin to minimize the bleeding and removed after placing for five more minutes when finishing excision. Hemostasis was obtained and the wounds were not closed with sutures. The wound healed at third week without complications. The patient was very satisfied with the procedure.

1.3. Conclusion: A 2940nm Erbium laser labiaplasty is a useful and safe procedure with applying a vascular clamp during cutting process. Postoperative wound needs not be closed when the thickness of labia minora is less than 0.5 cm.

2. Introduction

In the past, labia minora labiaplasty, was usually performed by a simple and straight resection of the excessive labial tissue with over sewing the wound edge [1-3]. An aesthetic labiaplasty (labiaplas-

ty) was first performed in 1984 [3]. Now, labia minora labiaplasty ranks as one of the most frequently performed female genital cosmetic surgery procedures [4]. The use of lasers in gynecology and urology has been widely known for more than 40 years, including of the management of HPV-related genital lesions, prostate vaporization, and lithotripsy [5, 6]. Recent applications of vaginal laser treating stress urinary incontinence and genitourinary symptoms of menopause have been described [7]. Labia minora labiaplasty using a 2940-nm Erbium laser has been reported as an office procedure under local anesthesia with a high rate of postoperative satisfaction [4]. Postoperative wounds were closed with resorbable sutures after the procedure [4].

Here, we report a patient of hypertrophic labia minora undergoing laser-assisted labiaplasty (2940-nm Erbium) under general anesthesia without postoperative wound closure. She recovered well and reported a good satisfaction without complications.

3. Case Report

A 49-year-old female, G4P4, with regular periods, visited our gynecologic out-patient-department with the complaint of her protruded labia minora for many years. She complained of both protruding labia minora enlargement and more darkness recently, which she had never had before. These changes not only led to aesthetic problems, but also caused symptoms included chronic local irritation, recurrent infections, personal hygiene problems during menses, and discomfort in clothing and during walking. The patient height was 160cm and weight 68 kg. A pelvic examination revealed that her labia minora were asymmetric, hypertrophic, obvious darker margin, 4.5cm in length from the base to the

edge (type III of Felicio classification, 4-6cm) [8], and 0.5cm in largest thickness (Figure 1A). We suggested her to undergo a reduction surgery and introduced to her an office procedure with a 2940-nm Erbium laser assisted labiaplasty under local anesthesia. Upon shared decision making, the patient agreed to undergo this procedure, but she preferred general anesthesia due to her sensitivity and much fearing of pain.

After obtained Informed consent, the patient underwent the procedure in a dorsal lithotomy position under general anesthesia. The surgical margin of labia minora was marked with marking pen from upper part downward in a curve to preserve bilateral symmetry and natural curvature. A pair of Kelly vascular clamp was placed to each side along the marking line to minimize the bleeding during the cutting procedure (Figure 1B). Laser equipment was a Fotona Smooth XS® model from Fotona®, Slovenia. The cutting hand-piece was R11 at LP mode with 10Hz, 120 mJ/cm² and 2mm spot size. The laser hand-piece was placed perpendicular to the labia minora with a 10x10cm surgical gauze behind the surgical field to avoid possible injury (Figure 2A). The excess labial tissue was resected smoothly from the top to the bottom along against the vascular clamp. After removing both excess labial tissues, the vascular clamp was placed for five more minutes before opening (Figure 2B and 3A). Hemostasis was verified. The incisional wound was not sutured and just apply locally with antibiotic cream only. The patient was observed for 40 minutes in recovery room then was discharged with a week medication including oral pain killers and antibiotics. We told her to do external packing by gauze if bleeding noted at home. Weekly follow-up scheduled was made for the patient and the wound almost healed at the third week without complications (Figure 3B). The patient felt very satisfied after the procedure.



Figure 1: (A) Bilateral asymmetric and hypertrophic labia minora. (B) The cutting margins are applied with Kelly vascular clamps

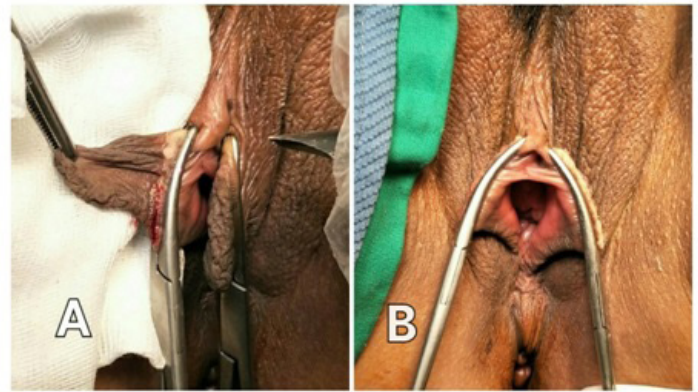


Figure 2: (A) Surgical gauze is placed behind the surgical field to avoid laser injury. (B) Excess labial tissues are removed, and the vascular clamp is placed for five more minutes before opening

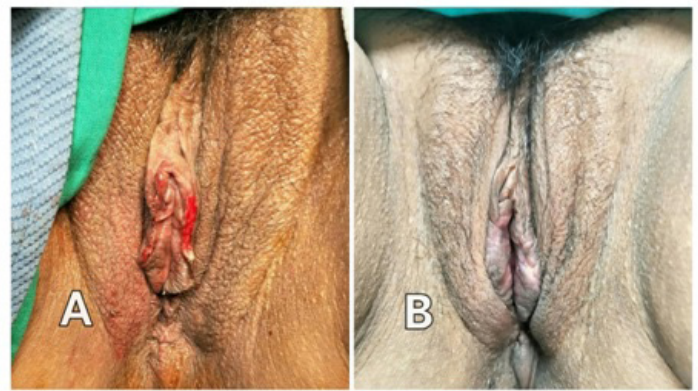


Figure 3: (A) Wound hemostasis and no wound closure. (B) Wound healing at third postoperative week

4. Discussion

Hypertrophic labia minora refers to large labia minora projecting beyond the labia majora, and can be bothersome from adolescent to adult for functional, aesthetic and emotional reasons. The etiologic factors of hypertrophic labia minora can be congenital or acquired by chronic irritations, excessive masturbation, and abnormal participation in sexual activities [9-10]. Functional, aesthetic and medical indications for labiaplasty have been reported in the literature including social embarrassment, interference with sexual intercourse, entry dyspareunia, discomfort with exercise and clothing, poor hygiene, intermittent urination, a desire to look better, enhance self-esteem and lesion (ie. hemangioma) [3, 11-17]. Rouzier et al [13] reported that labia minora are considered hypertrophic when maximal distance between the base and the edge is >4cm due to likelihood to induce physical discomfort [13]. Therefore, they only agree to perform surgical reduction for labia minora depended on the size. Our patient indeed was indicated for labiaplasty based on the size > 4cm with her bothering reasons functionally and aesthetically.

Surgical techniques for labiaplasty have been reported by the use of scalpels, scissors, lasers and electro scalpels [18]. Barber et al [19] reported 15 labiaplasties performed with a 2940-nm erbium laser under local anesthesia as an office procedure in 2016. They performed a linear resection pattern with injectable 1% lidocaine solution and applied a vascular clamp to place along the incisional margin of labia minora. This technique allowed the procedure to be done in a very short time and minimized bleeding. After removing the excessive labia minora, the incisions were sutured continuously using intradermal Vicryl 4-0. Actually, we tried to follow their procedure, but my patient was too nervous and fears of pain. We found out that laser assisted labiaplasty under general anesthesia presented some advantages. First, the operative time was shorter and faster. The patient would not be irritable during the procedure and the operative time was 10 minutes in our case. Second, the incision margin without lidocaine injection induced tissue swelling that would lead to less postoperative edema and less bilateral labia asymmetry. Vascular clamps placed along the incision area really allowed to have a less performed time and less bleeding; meanwhile, our patient's labia minora was less than 0.5cm and we found out there was no oozing after removing the clamp. Finally, we decided not suture the incision wounds. The patient recovered well without wound closure and showed a good wound healing without wound edge separation at third week. The reason may be less thickness of her labia minora (<0.5cm) and we performed with the technique of a vascular clamp. Erbium laser labiaplasty has been described as a safe procedure with a high level of patient satisfaction [20]. A descriptive study of 500 labia minora labiaplasty has been reported using laser, and electrocautery the other half, without any technical advantages over the other, in terms of complications, satisfaction and aesthetic final outcome [18]. In the study of Barber and his co-workers [19], the laser assisted labiaplasty demonstrated benefits of a very short operative time, minimal bleeding, no significant pain, high satisfaction and all of their patients returned to normal activities in a short period of time (between 7 to 10 days). Therefore, we speculate the thermal injury in laser would be less than electrocautery and this would cause less tissue edema postoperatively and reduce the downtime. However, randomized studies of a laser or electrocautery technique will be needed to conduct in the future.

In the literature of labiaplasty [3, 11-17, 19], a high level of patient satisfactory rates has been reported from 89% to 98 % in aesthetic, or in functional outcomes. Labiaplasties were performed under local or general anesthesia using instrument or surgical technique and all of postoperative wounds were reported to be closed with resorbable or non-resorbable sutures. Postoperative complications included distal flap necrosis, hematoma, superficial infection, skin retraction, late local pain, transient dyspareunia and wound dehiscence [13, 14, 17]. Postoperative wound dehiscence was the

most common adverse event and was particularly difficult to manage whatever the suture material and technique were used [17]. Anecdotally, Dermabond (Ethicon, Inc.) can be served as an adjunct to avoid wound separation.

In our case, the patient complained of postoperative discomfort within one week, which could be alleviated with medication and ice packing. We also emphasized the genital hygiene, light daily activity, loose clothing and avoiding sex intercourse within one month. So, the patient recovered well in one month without complications. In conclusion, we didn't perform wound closure after laser assisted labiaplasty under general anesthesia, and it could present a good healing outcome when the thickness of labia minora is less than 0.5cm along with a vascular clamp to minimize bleeding.

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