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IDEAS AND INNOVATIONS

Gender-affirming Surgery

A Refinement Technique to Conceal the Scar Along the Labia Majora in Gender-affirming Vaginoplasty

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Summary: Although the traditional gender-affirming vaginoplasty technique has been successful in closely resembling natural female anatomy, the surgical scar on the labia majora has been a significant concern for many. To address this issue, the author has developed a technique to conceal the scar resulting from the trimming of excess scrotal skin within the robustly reconstructed interlabial sulcus, thereby reducing its visibility and improving vulvar aesthetic outcomes. Of the 107 patients who underwent gender-affirming vaginoplasty, 72 underwent the traditional technique, whereas 35 underwent the technique in which scars from scrotal skin excision were concealed within the interlabial sulcus. The outcomes from the latter group showed that surgical scars were completely concealed in 32 (91.4%) patients, whereas 2 (5.7%) patients experienced scar migration lateral to the interlabial sulcus, and 1 (2.9%) patient had a loss of interlabial sulcus definition. By comparison, all patients who underwent the traditional technique exhibited visible scars in the center of the labia majora. This technique, which conceals the scar within the interlabial sulcus, demonstrates superior vulvar aesthetic outcomes compared with the traditional method. *(Plast Reconstr Surg Glob Open 2025;13:e6692; doi: 10.1097/GOX.0000000000006692; Published online 10 April 2025.)*

INTRODUCTION

Scarring on the labia majora resulting from scrotal skin excision in traditional gender-affirming vaginoplasty is a significant concern for many patients. As one of the most visible parts of the vulva, a noticeable scar can detract from the desired natural aesthetic outcome. Although individuals with abundant pubic hair may obscure the scar, those with sparse hair or who regularly shave often express dissatisfaction. To address this concern, a technique has been developed to strategically place the scar within the interlabial sulcus, making it virtually invisible.

PATIENT CRITERIA AND POSTOPERATIVE PROTOCOL

All patients who underwent gender-affirming vaginoplasty identified as transgender women and met the criteria outlined in the World Professional Association for Transgender Health Standards of Care.[1,2] Patients younger than 18 years, those without psychiatric certification, or those with severe comorbidities affecting surgery or anesthesia were excluded from surgery.

After surgery, patients were placed on complete bed rest with the surgical site covered by gauze, and urinary catheters and suction drains were used. Patients began eating the day after surgery and mobilized on the fourth postoperative day. Gauze and catheters were removed on the seventh day, and vaginal dilation began on the same day. Patients then spent an additional night in the hospital to receive instructions for vaginal care from specially trained nurses. Patients were scheduled for follow-up appointments every 3 months during the first year, followed by annual visits. Postoperative evaluations included general symptoms, vaginal function, external vulvar examination, and internal examination with a colposcope.

TECHNIQUE DESCRIPTION

The author uses the nonpenile inversion technique as the primary approach,[3] utilizing the entire penile skin to create double-layered labia minora extending to the vaginal introitus. In the traditional method, excess scrotal skin is typically excised after quilting sutures are placed in the

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interlabial sulcus, and the labia minora are inset. The excess scrotal skin is excised, leaving a scar on the labia majora. Some surgeons may choose to position the scar either medially or laterally.[4,5] The author's approach modifies the surgical sequences by incorporating a planned early excision of the scrotal skin concurrently with the reconstruction of the interlabial sulcus. This technique allows the scar to be positioned within the sulcus to reduce its visibility (Figs. 1A, B).

Interlabial sulcus reconstruction and scar concealment begin with the formation of a penile–scrotal skin flap unit by dividing the penile shaft skin along the midline. Excess scrotal skin is excised along the superolateral aspect, and the scrotal flaps are advanced medially, after which the penile and scrotal flaps are sutured together. (**See figure, Supplemental Digital Content 1**, which displays a photograph of the excision pattern for the excess scrotal skin along the superolateral aspect, **http://links.lww.com/PRSGO/D958**.) The interlabial sulcus is then reconstructed by quilting the penile–scrotal junction to the crus of the corpus cavernosum using long-lasting absorbable sutures on each side. (**See Video [online]**, which displays the interlabial sulcus reconstruction and scar concealment technique.)

For vaginal lining techniques, scrotal skin grafting is the preferred method when the scrotal skin is abundant. However, in cases of insufficient scrotal skin or when a mucosal lining or greater vaginal depth is required, alternative options such as colon or peritoneal vaginoplasty may be considered.

RESULTS

From 2021 to 2024, a total of 107 patients underwent gender-affirming vaginoplasty, with 35 having scars concealed within the interlabial sulcus and 72 undergoing the traditional technique. The majority of patients were of Asian ethnicity (99, 92.52%), with a mean age of 28.18 years and a mean body mass index of 22.30 kg/m^2. Twenty-four (22.43%) patients were circumcised, and 10 (9.35%) had undergone orchidectomy. For vaginal lining techniques, 53 (49.53%) patients had peritoneal vaginoplasty, 38 (35.51%) had scrotal skin grafting, 14 (13.08%) had colon vaginoplasty, and 2 (1.87%) had zero-depth vaginoplasty. Vaginal depth averaged 5.8 inches (14.73 cm) immediately postoperatively and 5.1 inches (12.95 cm) at 1 year.

Of the 35 patients who underwent vaginoplasty with scar concealment, 32 (91.4%) achieved completely concealed scars. Two (5.7%) patients experienced scar migration, and 1 (2.9%) patient had a loss of sulcus definition. In contrast, all patients who underwent the traditional method exhibited visible scars centrally located on the labia majora (Fig. 2).

Overall complications across both groups included wound dehiscence as the most common, affecting 24 (22.43%) patients. Additional complications included labia minora necrosis in 9 (8.41%) patients, vaginal canal stenosis in 6 (5.61%) patients, rectal injury in 3 (2.80%) patients, and urethral injury in 1 (0.93%) patient. (**See table, Supplemental Digital Content 2**, which displays a table that shows a comparison of postoperative complications between traditional and scar-concealed gender-affirming vaginoplasty, **http://links.lww.com/PRSGO/D959**.)

Takeaways

Question: How can the visible scar running through the labia majora from traditional gender-affirming vaginoplasty be concealed?

Findings: In this study, the author described a surgical technique to conceal the scar resulting from trimming the excess scrotal skin within the interlabial sulcus.

Meaning: The technique of placing the scar within the interlabial sulcus offers an effective approach to conceal it within the anatomical boundary, significantly reducing its visibility and enhancing the overall vulvar aesthetic outcomes in gender-affirming vaginoplasty.

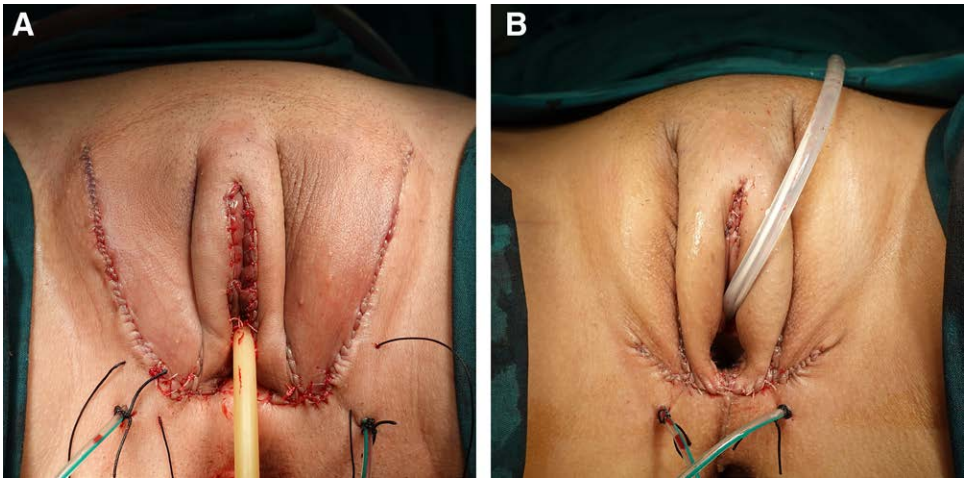

Fig. 1. Immediate postoperative results of gender-affirming vaginoplasty. A, A photograph of the immediate postoperative result of traditional gender-affirming vaginoplasty. B, A photograph of the immediate postoperative result of gender-affirming vaginoplasty with concealed scars.

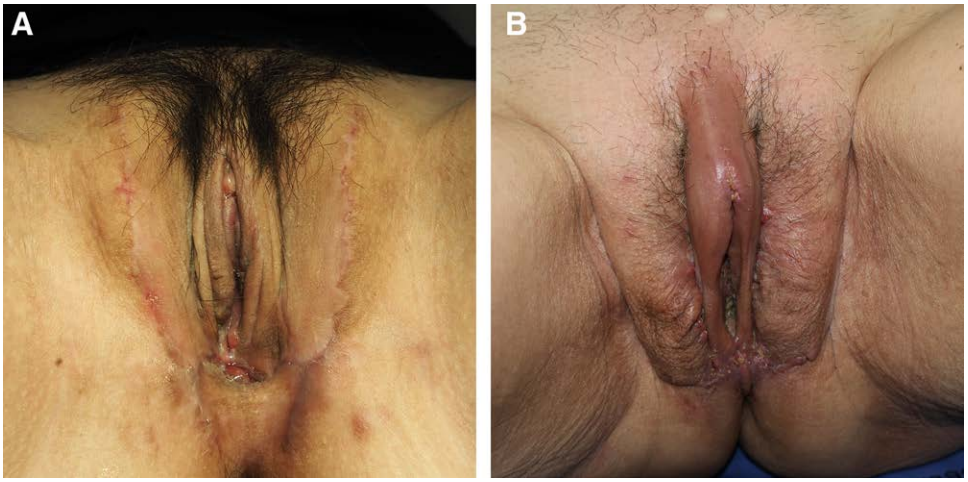

Fig. 2. Postoperative outcomes of gender-affirming vaginoplasty. A, A photograph of postoperative outcomes at 10 weeks following traditional gender-affirming vaginoplasty. B, A photograph of postoperative outcomes at 6 weeks following gender-affirming vaginoplasty with concealed scars.

DISCUSSION

Based on the literature on vulvar aesthetics in gender-affirming vaginoplasty, the focus has been on clearly defined vulvar subunits, with less attention to scarring on the labia majora.[6,7] However, as outcomes increasingly resemble natural female anatomy, concerns about visible scars have risen.[8] This technique, devised to conceal the scar within the interlabial sulcus, addresses this issue.

Although this technique is generally feasible for most patients, individuals with limited scrotal skin may encounter challenges in achieving complete scar concealment. Additionally, patients undergoing vaginal lining with scrotal skin grafting may face increased skin tension in the interlabial sulcus, which can compromise scar concealment or contribute to scar creep. The tension can result in scar migration or loss of sulcus definition, as observed in some cases.

Although quilting sutures can help stabilize the sulcus, achieving zero scar creep or complete retention of sulcus definition is not always feasible. Two primary factors influence this outcome: scrotal skin tension, with reduced tension facilitating scar concealment, and the sulcus reconstruction technique. Anchoring sutures to the corpus cavernosal crus and carefully managing subcutaneous fat along the suture pathway are essential for maintaining long-term sulcus durability.

Although patients who achieved scar concealment reported high satisfaction, the lack of long-term patient-reported outcome measures is a limitation of this study. Future research should address this by including patient-reported outcome measures in evaluations, which must be applied with sensitivity in gender-diverse populations.[9,10]

CONCLUSIONS

The technique of placing the scar along the labia majora within the interlabial sulcus offers an effective approach to conceal it within the anatomical boundary, significantly reducing its visibility and enhancing the overall vulvar aesthetic outcomes in gender-affirming vaginoplasty.

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DISCLOSURE

The author has no financial interest to declare in relation to the content of this article.

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