

# Aesthetic Labia Minora and Clitoral Hood Reduction Using Extended Central Wedge Resection

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**Background:** The central wedge excision to reduce the labia minora was reported in 1998. The purpose of this article is to present recent modifications and results of this technique.

**Methods:** A central wedge or V is removed from the most protuberant portion of each labium minus. The outer portion of the V excision is usually curved lateral and anterior to excise redundant lateral labium and excess lateral clitoral hood. Postoperative examinations were performed when possible. Two separate mailings of questionnaires were sent, and follow-up phone calls were made to nonresponders.

**Results:** A total of 407 patients had labia reductions from January 1, 2005, to December 31, 2006. All but 14 (3 percent) were bilateral. Ages ranged from 13 to 63 years (average, 32.4 years). Almost all patients had some lateral clitoral hood excisions with the extension of the lateral hockey-stick design. Postoperative examinations at least 2 weeks after surgery were performed on 123 patients. The total number of patients undergoing reoperation was 12 of 407 (2.9 percent). Patients responding to the questionnaire (166 of 407) were pleased with the surgery by an average score of 9.2 of 10 (where 10 = most pleased). Improvement in self-esteem (93 percent), sex life (71 percent), and discomfort (95 percent) was reported with a low significant complication rate (4 percent); 163 of the respondents (98 percent) would undergo the surgery again.

**Conclusion:** Central wedge reduction with lateral clitoral hood reduction is a safe, effective procedure with few complications and high patient satisfaction. (*Plast. Reconstr. Surg.* 122: 1780, 2008.)

The most common female genital aesthetic procedure is a labia minora reduction (labioplasty). Women have become more aware of differences in genital appearance as a result of explicit photographs and movies and the wide acceptance of genital hair removal. Most consider an aesthetic ideal as labia minora and clitoral hood that do not protrude past the labia majora, but individual aesthetic judgment varies.<sup>1</sup> If a woman considers her labia enlarged or deformed, she may have diminished self-esteem and be sexually inhibited. In addition, the vast majority of women with enlargement of the labia minora also complain of a variable amount of discomfort with clothes, exercise, and/or sexual activity.<sup>2</sup> The large size can interfere with hy-

giene and can cause constant irritation.<sup>3</sup> Demand for labia minora reduction has increased because of recent media coverage of this operation.

The most common cause of labia minora enlargement is probably congenital.<sup>4</sup> The enlargement can be present since birth, but it usually becomes most apparent when the woman goes through puberty. Exogenous androgenic hormones<sup>5</sup> and chronic irritation<sup>6</sup> can also cause enlargement. Some women complain of growth of the labia during pregnancy or with age.

Traditionally, labia minora reductions were performed by the amputation or trimming of the labial edge with oversewing of the open labial

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border.<sup>2-6</sup> I reported a new labia minora reduction technique in 1998 using a central wedge or V excision of the most protuberant portion with reapproximation of the anterior and posterior edges.<sup>7</sup> This technique preserves the normal labia edge and color with less chance for chronic tenderness of the scar line. Since that time, other techniques and variations of this original method have been reported. The purpose of this article is to present my recent modifications and results.

### PATIENTS AND METHODS

A total of 407 patients had labia reductions from January 1, 2005, to December 31, 2006 (Table 1). Ages ranged from 13 to 63 years, with an average of 32.4 years (Table 1). All but 14 (3 percent) had bilateral reductions. Four had a second more posterior V labial excision performed on one side at the same time because of severe posterior asymmetry of the labia. Four underwent surgery to further reduce labia reductions performed by other physicians with an amputation or trimming technique. Four had bilateral reductions to reconstruct and reduce labial lacerations incurred as a child ( $n = 2$ ) or during childbirth ( $n = 2$ ).

Three hundred forty-eight patients (85.5 percent) underwent surgery for aesthetics plus some discomfort with clothing, exercise, or sexual intercourse. Fifty-four patients (13.3 percent) underwent surgery for aesthetics only and had no discomfort. Five of the 407 patients (1.2 percent) had no aesthetic concerns but underwent surgery

only for medical reasons such as discomfort, carcinoma in situ, or hemangiomas.

A central wedge or V is removed from the most protuberant portion of each labium minus. The wedge is excised to give the length of each labium a straight line with no tension on the suture line. If no tension is present, the introitus will not be pathologically narrowed unless the patient has a high posterior vaginal lip. Vaginal tension should be checked by inserting two fingerbreadths without creating undue tension. If a high posterior lip is present, it may need to be released. The frenulum of the clitoris extends to the upper labium. Usually, this point of intersection is used as a guide for alignment of the upper labium to the lower labium in marking the wedge excision. The inner wedge is designed as a V extending into the vagina (Fig. 1, *above, center*). The outer wedge excision is curved lateral and anterior (hockey-stick) to excise redundant lateral labium and excess lateral clitoral hood (if desired by the patient) (Fig. 1, *above, right*). Therefore, the internal and external V excisions are shaped differently, with the intervening subcutaneous tissue preserved and the leading labial edge precisely reapproximated. Occasionally, hypertrophic and discolored clitoral hood skin is more medial on the hood. In this case, the lateral incision stops at the lateral labium and a vertical medial ellipse is instead taken from the clitoral hood to remove this unwanted skin (Fig. 2). Alternatively, depending on the anatomy, the lateral incisions can turn more medial to excise hyperpigmented skin or an extra medial hood fold (Fig. 3).

After marking, injection of lidocaine with epinephrine and Marcaine (Abbott Laboratories, Abbott Park, Ill.) is performed, which significantly reduces postoperative pain. Loupe magnification is helpful in achieving accurate wound approximation and closure. The mucosa and outer skin are removed while attempting to keep most subcutaneous tissue. Only enough subcutaneous tissue is excised to produce a good cosmetic result, because good subcutaneous closure is necessary to prevent fistula formation and wound separation. The subcutaneous tissue is closed in one or two layers depending on the thickness of the labium. The internal subcutaneous dog-ear is excised proximally. Thus, the labium is reapproximated in at least three layers using 5-0 Monocryl (Ethicon, Inc., Somerville, N.J.) for all layers (Fig. 1, *below*). An atraumatic TF needle is very helpful in preventing tissue damage during reapproximation. The leading labial edge and initially the distal medial and lateral labium are approximated with

**Table 1. Summary Table**

	No. (%)
Totals by age* (total average age, 32.4 yr; range, 13-63 yr)	
13-19	35 (8.6)
20-29	139 (34.2)
30-39	150 (36.9)
40-49	65 (16.0)
50-59	15 (3.7)
60-63	3 (0.7)
Surgical procedures*	
Bilateral: one V on each side	389 (95.6)
Previous trimming reduction	4
Previous labial lacerations	4
Bilateral with second unilateral posterior V	4 (1.0)
Unilateral	14 (3.4)
Total no. of labia V excisions	804†
Reason for surgery*	
Aesthetics and discomfort (with clothing, exercise, and/or intercourse)	348 (85.5)
Aesthetics only	54 (13.3)
Medical reasons only	5 (1.2)

\* $n = 407$ .

†389 + 389 + 12 + 14.



**Fig. 1.** Photographs of a 47-year-old woman who underwent labia reduction and lateral clitoral hood reduction. (*Above, left*) Photograph obtained preoperatively. (*Above, center*) Internal V markings with the labia open. (*Above, right*) External hockey stick V marking extending along the lateral clitoral hood to the anterior hood. (*Below, left*) The completed right side compared with the left side. (*Below, center*) Photograph obtained postoperatively. (*Below, right*) Photograph obtained postoperatively with the labia open.

vertical mattress sutures of 5-0 Monocryl, which helps to prevent labial edge separation. The remainder of the medial closure can be performed with running Monocryl, whereas the lateral labium is usually closed with interrupted sutures. The lateral clitoral hood is closed with 5-0 Monocryl in the subcutaneous tissue and a subcuticular Monocryl skin closure. Minor defects are closed with 6-0 Monocryl. The surgical time ranges from 75 to 120 minutes for a bilateral procedure (Figs. 4 and 5). Multiple ancillary procedures were per-

formed at the same time (Table 2), including 35 patients who also had a clitoropexy with more extensive clitoral hood resection (to be discussed in an article published later).

Postoperative examinations at 2 weeks or greater were performed on 123 patients, but patients commonly traveled long distances to have the surgery and/or would not return for follow-up. Therefore, two separate mailings of anonymous questionnaires were sent to all patients when they were at least 4 months postoperatively. Tele-



**Fig. 2.** Photographs of a 33-year-old woman who underwent labia reduction and medial-lateral clitoral hood reduction. (*Above, left*) Photograph obtained preoperatively. (*Above, center*) External labial excision ends at the lateral labium. Separate elliptical excision of thickened clitoral hood. (*Above, right*) Same as *above, center*. (*Below, left*) Internal V markings with the labia open. (*Below, right*) Photograph obtained postoperatively.

phone follow-up was later performed for the remaining nonresponders.

## RESULTS

### Complications

The total number of patients undergoing reoperation was 12 of 407 (2.9 percent), with 16 sides repaired or revised (Table 3). There were 18 patients

(4.4 percent) with significant complications, which included revisions ( $n = 12$ ), patients wanting revisions ( $n = 3$ ), and chronic discomfort ( $n = 3$ ).

In 12 patients, there were 13 separations at the labia edge in a total of 804 labial V excisions (389 bilateral, four with three excisions, and 14 unilateral) (Table 3). Only three of these patients desired or needed a revision. One patient, who is a



**Fig. 3.** Photographs of a 38-year-old woman who underwent labia reduction and medial-lateral clitoral hood reduction because of redundant medial clitoral hood folds. (Above, left) Photograph obtained preoperatively. (Above, right) Markings showing more medial extension of external labial markings. (Below, left) Labia majora pulled open to visualize markings. (Below, right) Photograph obtained postoperatively showing incisions.

smoker, had bilateral labia minora revisions for separations and sinuses. She healed fine after a major revision once she quit smoking. One had repair of a minor separation with another V excision and closure. One had a small pointed tip at the separation, which was fixed by a simple excision. Nine patients had such minor separations

that they did not wish or need them revised. One patient had an asymptomatic labial fistula that was revised. Therefore, only four patients (1 percent) underwent revision surgery for tip separations or fistulas.

Seventeen patients (4.2 percent) had some stretching of the labia scar and seven (1.7 per-



**Fig. 4.** Photographs obtained (*left*) preoperatively, (*center*) immediately postoperatively showing lateral clitoral hood incisions, and (*right*) 2 months postoperatively of a 17-year-old female patient who underwent labia reduction and lateral clitoral hood reduction.



**Fig. 5.** Photographs obtained (*left*) preoperatively and (*right*) 3 months postoperatively of a 34-year-old woman who underwent labia reduction and lateral clitoral hood reduction.

cent) underwent revision: four unilateral and three bilateral. The V technique was used in six of the patients to achieve symmetry, and the crescent medial and lateral resection of Choi

and Kim<sup>8</sup> was used on one unilateral stretched labium to achieve symmetry. Other minor complications and causes for reoperation are listed in Table 3).

**Table 2. Ancillary Procedures**

Procedures	No.
Second unilateral posterior V	4
Clitoropexy	35
Transverse clitoral hood resection	4
Debulking clitoral hood subcutaneous tissue	1
V excision of overhanging clitoral hood prepuce	3
Dorsal slit of clitoral hood	1
High posterior vaginal lip release	5
Posterior V of introitus for excess tissue	1
Perineal median raphe or tissue excised	7
Episiotomy scar revision	2
Vaginal polyps or hymen tag removal	9
Labia majora fat injections	8
Vaginal tightening	12

**Table 3. Complications and Causes for Reoperation**

	No. (%)
Reoperation*	12 (2.9)
Labial separations	3 (0.7)
Bilateral	1
Unilateral	2
Stretching	7 (1.7)
Unilateral	4
Bilateral	3
Labial fistula	1 (0.2)
Clitoral hood dog-ear	1 (0.2)
Total significant complications*	18 (4.4)
Reoperations	12
Desire revision (stretching)	3
Discomfort	3
Complications	
In labia V excisions†	
Separation at labia edge	13 (1.6)
Reoperation	4
No operation	9
Stretching of labium (sides)	28 (3.5)
Reoperation	10
Want reoperation	6
Minor: do not want reoperation	12
Labium fistula	1 (0.1)
In total patients*	
Separation	12 (2.9)
Stretching	17 (4.2)
Labium fistula	1 (0.2)
Suture granuloma of hood	4 (1.0)
Chronic discomfort: worse or not present preoperatively	3 (0.7)
Pain during sex	2
Slight tenderness	1
Visible scars: mild	7 (1.7)
Clitoral hood dog-ear	1 (0.2)

\*n = 407.

†n = 804 (389 + 389 + 12 + 14).

**Questionnaire**

Questionnaires were returned by 166 of 407 patients (41 percent). The patients were asked about indications, change in sensation, complications, self-esteem, change in sex life, and happiness with the operation (Table 4).

Thirty-eight patients (22.9 percent) claimed a positive increase in sexual sensation (easier to or-

**Table 4. Follow-Up Questionnaire (n = 166)**

	No. (%)
Sensation	
Positive sensation (easier orgasm, more sensitive)	38 (22.9)
Negative change in sensation	9 (5.4)
Increased difficulty to orgasm	5
Less sensitive	4
Ratings	
Happy, 0–10	
10 of 10	2
8 of 10	6
5 of 10 (pain was worse postoperatively)	1
Discomfort preoperatively	148 (89.2)
Resolved	106 (71.6)
Much better	35 (23.6)
Moderately better	3 (2.0)
Slightly better	3 (2.0)
Worse	1 (0.7)
No discomfort preoperatively	18 (10.8)
Slight discomfort postoperatively	1
Moderate discomfort during sex postoperatively	1
No discomfort postoperatively	16
Postoperative discomfort summary (pain or tenderness)	3 (1.8)
Worse postoperatively: would not do again (5 of 10)	1
Not present preoperatively	2
Moderate discomfort: may do again (5 of 10)	1
Slight discomfort: would do again (9 of 10)	1
Self-esteem increased?	
A lot	117 (70.5)
A little	25 (15.1)
Somewhat	13 (7.8)
No change	7 (4.2)
Never a problem	4 (2.4)
Improved sex life?	
Yes	118 (71.1)
No change	39 (23.5)
Not applicable	8 (4.8)
Worse	1 (0.6)
Happy with surgery (1–10, with 10 being happiest)*	
4 (still too large)	1 (0.6)
5 (2 discomfort, 1 too large, 1 unknown)	4 (2.4)
6	1 (0.6)
7	3 (1.8)
8–8.5	27 (16.3)
9–9.5	35 (21.1)
10	95 (57.2)
Would do again?	
Yes	163 (98.2)
Maybe	2 (1.2)
Pain postoperatively which was not present preoperatively	1
Increased difficulty obtaining orgasm	1
No (pain worse after surgery)	1 (0.6)

\*Mean = 9.235.

gasm, more sensitive). Nine (5.4 percent) claimed a negative change in sexual sensation, which was an increased difficulty to orgasm (n = 5) and decreased labial sensation (n = 4). One of the latter four had

increased pain during sexual intercourse causing orgasm difficulty. However, eight of these nine rated their happiness with the surgery from 8 to 10. The only low rating, a 5, was this patient with pain, but she refuses to return for treatment.

This patient was also only one of three questionnaire respondents (1.8 percent) with new or worse chronic discomfort. A second patient developed moderate postoperative discomfort but might undergo the procedure again. The third had mild postoperative tenderness but would undergo surgery again and rated her happiness level at 9 of 10.

Of the 148 patients who had some discomfort preoperatively, which included irritation with clothes, exercise, or sexual intercourse, 106 (71.6 percent) were cured, 35 (23.6 percent) were much better, three (2 percent) were moderately better, and three (2 percent) were slightly better. One patient (0.7 percent) was worse (see above).

Of the 166, 155 (93 percent) said their self-esteem improved at least somewhat and 118 (71 percent) said their sex life improved. The average rating of happiness (1 to 10, with 10 being happiest) with the surgery was 9.2 percent. Of the 166, 163 (98 percent) would undergo the surgery again, two (1.2 percent) might undergo the surgery again (one has increased difficulty having an orgasm and one has postoperative pain), and one (0.6 percent) would not (discomfort worsening after surgery).

It is possible that the complication rate could be higher, because only 123 patients (30 percent) were examined 2 weeks postoperatively, and only 166 patients (41 percent) responded to the questionnaire. Geographic separation makes it difficult to obtain complete, accurate follow-up. However, patients generally seek treatment with their surgeon or have questions if they are having difficulties or are displeased. Even if the real complication rate is somewhat higher, it is still extremely low, with high patient satisfaction.

## DISCUSSION

Until my report in 1998 using the wedge technique, the correction of protuberant or asymmetrical labia minora was performed by simple trimming excision or amputation of the abnormal areas with oversewing the incision line, thus leaving the labial edge as a scarred suture line.<sup>7</sup> Subsequently, there were theoretical concerns with the wedge technique about the possibilities of a tight introitus and notching or separation of the suture line.<sup>8-12</sup> Over the years, my technique has been altered to eliminate labial edge wound separation, decrease the possibility of sinus or fistula formation, reduce the often

redundant clitoral hood lateral excess, and minimize postoperative pain.<sup>13,14</sup>

Most surgeons continue to perform labia minora reduction techniques by amputation or trimming of the labial edge and oversewing it.<sup>2-6,15</sup> The use of a scalpel, laser, or scissors to make the excision is probably irrelevant, but meticulous, symmetrical tissue removal and closure are most important for an adequate result with that technique. However, the removal of the labial edge with suture closure usually results in an abnormal appearance because of the loss of the normal labial contour and pigmentation. In addition, the transition zone between the labium and the frenulum and clitoral hood often becomes distorted, resulting in an abrupt-ending clitoral frenulum and large overhanging clitoral hood. The long vertical labial suture line can cause chronic irritation, because it is more apt to rub on clothing and so forth. Overzealous excision can also result in removal of the entire labia on one or both sides, leading to a severe aesthetic deformity and persistent discomfort. To prevent the possibility of labial edge scar retraction, chronic irritation, and possible elevation and tightening of the introitus, Maas and Hage developed a running W-shaped resection with interdigitating suturing of the residual labium.<sup>10</sup> However, this procedure still results in elimination of the normal labial edge. Recently, Felicio reported her experience with an S-shaped incision to avoid the possibility of scar contracture, with good results.<sup>16</sup> She makes the comment that most women have asymmetrical labia minora, so she maintains some degree of this asymmetry. I disagree, as most women wish to achieve symmetry in the genital region as in other parts of the body and face.

Because of the theoretical concerns of my initial technique with possible scar retraction, introitus narrowing, and so forth, other modified techniques have been reported. Giraldo et al. reported a variation of my central wedge technique in which the central wedge is removed with a 90-degree Z-plasty to reassemble the labium to prevent the introital narrowing.<sup>11</sup> In fact, labial skin and mucosa are very thin, with minimal dermis and submucosa, so I have not had a case of scar contraction or vaginal narrowing. In fact, slight stretching of the suture line is occasionally seen but is not usually problematic. The medial suture line goes inside the lateral wall of the vagina, so any area of theoretical contracture would not narrow the introitus. Because my patients have not reported any incidence of scar contraction or tightness of the introitus, this Z-plasty procedure seems excessively



complicated and unnecessary. Rouzier et al. reported results with V-shaped excision of the redundant labium with Kocher clamps at an approximately 90-degree angle, but the posterior excision seems to be placed very close to the introitus and the anterior flap can be relatively bulky.<sup>17</sup> However, 96 percent of their patients were satisfied. The highest complication rate was a suture line dehiscence in 7 percent. Munhoz et al. reported an inferior wedge reduction with superior pedicle flap reconstruction.<sup>18</sup> Their aesthetic results are somewhat similar to those of Rouzier et al., in which the superior flap is advanced posterior. They are less rigid in their determination of the amount to be resected and take care to avoid tension at the anastomosis. However, the advancement of the superior flap can leave a relatively bulky labium as the excess lateral clitoral hood tissue is advanced posteriorly. With my hockey-stick lateral excision combined with a central wedge excision, this bulk is actually removed. In addition, a long superior pedicle can cause a wound disruption by the relatively poor vascularity of the distal flap as illustrated by that complication in four of their 20 patients (20 percent). Choi and Kim developed a labia reduction in which mucosa from the medial side and skin from the lateral side of the labium were removed and closed.<sup>8</sup> This reduced the protrusion of the labium and maintained the normal labial edge. However, it did not decrease the length of the labium and can result in a bulky labium with redundancy. I have successfully used this method for a secondary reduction when the patient was not a candidate for another wedge resection.

Only my latest patients are included in this study, because my technique and results have changed. The frequency of fistula formation and of separation at the leading labial edge has diminished markedly with the use of 5-0 Monocryl vertical mattress sutures. Monocryl is relatively non-reactive and thus allows better healing, with a decrease in postoperative pain.

The central wedge usually removes the most darkly colored labial skin. There can occasionally be a color discrepancy between the anterior and posterior labium, which is rarely an issue. Most women have considerable excess clitoral hood skin and folds, which can be safely removed with the lateral hockey-stick excision. When the most hypertrophic, darkened hood skin is located just off center on the hood, the lateral excision is shortened and the medial unsightly hood skin is excised with a separate elliptical excision.

It is very unusual for a woman to have significant postoperative complaints with this technique. I am very pleased with the aesthetic results, as are almost all patients. Conversely, I have seen many women with complaints from amputation techniques relating to overresection, asymmetry, rough irregular edges, an unnatural clitoral hood-labial junction, and chronic discomfort.

## CONCLUSIONS

Physicians frequently discount the importance of female genital appearance to women and men. A poorly performed labioplasty can actually further diminish self-esteem and create a hostile, depressed patient. Because women have aesthetic concerns, they deserve an ideal aesthetic result. The vast majority of women seeking labia reduction for aesthetic concerns also have some discomfort. Therefore, the central wedge or V procedure fulfills the patient's dual goals. Because the women are more secure with their genital appearance, they usually report improved self-esteem and frequently claim an improved sex life. This technique is shown to be reproducible, if performed meticulously, with infrequent complications and very high patient satisfaction.

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## REFERENCES

- Hodgkinson, D. J., and Hait, G. Aesthetic vaginal labioplasty. *Plast. Reconstr. Surg.* 74: 414, 1984.
- Gowen, R. M., and Martin, V. L. Labia minora reduction in an iron-lung disabled woman. *Obstet. Gynecol.* 71: 488, 1988.
- Radman, H. M. Hypertrophy of the labia minora. *Obstet. Gynecol.* 48(Suppl.): 78S, 1976.
- Caparo, V. J. Congenital anomalies. *Clin. Obstet. Gynecol.* 14: 988, 1971.
- Chavis, W. M., LaFerla, J. J., and Niccolini, R. Plastic repair of elongated, hypertrophic labia minora: A case report. *J. Reprod. Med.* 34: 373, 1989.
- Kato, K., Kondo, A., Gotoh, M., Tanaka, J., Saitoh, M., and Namiki, Y. Hypertrophy of labia minora in myelodysplastic women: Labioplasty to ease clean intermittent catheterization. *Urology* 31: 294, 1988.
- Alter, G. J. A new technique for aesthetic labia minora reduction. *Ann. Plast. Surg.* 40: 287, 1998.
- Choi, H. Y., and Kim, K. T. A new method for aesthetic reduction to the labia minora (the deepithelialized reduction labioplasty). *Plast. Reconstr. Surg.* 105: 419, 2000.

9. Maas, S. M., and Hage, J. J. Aesthetic labia minora reduction (Letter). *Ann. Plast. Surg.* 41: 685, 1998.
10. Maas, S. M., and Hage, J. J. Functional and aesthetic labia minora reduction. *Plast. Reconstr. Surg.* 105: 1453, 2000.
11. Giraldo, F., Gonzalez, C., and de Haro, F. Central wedge nymphectomy with a 90-degree Z-plasty for aesthetic reduction of the labia minora. *Plast. Reconstr. Surg.* 113: 1820, 2004.
12. Laub, D. A new method for aesthetic reduction to the labia minora (the deepithelialized reduction labioplasty) (Discussion). *Plast. Reconstr. Surg.* 105: 423, 2000.
13. Alter, G. J. Central wedge nymphectomy with a 90-degree Z-plasty for aesthetic reduction of the labia minora (Letter). *Plast. Reconstr. Surg.* 115: 2144, 2005.
14. Alter, G. J. Aesthetic labia minora reduction with inferior wedge resection and superior pedicle flap reconstruction (Letter). *Plast. Reconstr. Surg.* 120: 358, 2007.
15. Girling, V. R., Salisbury, M., and Ersek, R. A. Vaginal labioplasty. *Plast. Reconstr. Surg.* 115: 1792, 2005.
16. Felicio, Y. Labial surgery. *Aesthetic Surg. J.* 27: 322, 2007.
17. Rouzier, R., Louis-Sylvestre, C., Paniel, B. J., and Haddad, B. Hypertrophy of labia minora: Experience with 163 reductions. *Am. J. Obstet. Gynecol.* 182: 35, 2000.
18. Munhoz, A. M., Filassi, J. R., Ricci, M. D., Aldrighi, C., and Ferreira, M. C. Aesthetic labia minora reduction with inferior wedge resection and superior pedicle flap reconstruction. *Plast. Reconstr. Surg.* 118: 1237, 2006.

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