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ORIGINAL ARTICLE

GENITAL SURGERY

Labia Minora Repair

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Abstract

Background Labia minora reduction has become part of the treatment spectrum offered by most plastic surgeons. The author has performed many corrective procedures involving the outer female genital region, most of which involved reducing the labia minora of approximately 4300 women. Over the years, the number of corrective procedures to rectify poorly performed initial operations increased significantly at the author's practice. The most common iatrogenic deformity is the overresection of the labia minora below the clitoris, leaving behind excess tissue in the area around and above the clitoral hood (small penis deformity).

Methods Two basic procedures may be used to reconstruct the labia minora below the clitoris: reconstructing the labia minora by redundant labial tissue above the clitoris to form bilateral preputial flaps being rotated downward into the defect and reconstructing the labia minora by vaginal skin advancement. Other reconstructions depend on the deformity itself. The postoperative outcome was assessed in an anonymous questionnaire answered by 544 patients.

Results The outcome showed a significant improvement in functional and psychological impairment as a result of the deformities caused by the initial operation. Even if the reconstruction of the labia minora did not produce the desired initial result, overall satisfaction with the corrective surgery was very satisfactory.

Conclusion The increase of iatrogenic deformities after the initial labia reductions is alarming. The causes of this growth are manifold: underestimation of the procedure, misjudgment and a lack of detailed knowledge. This has a heavy psychological and physical impact on patients. Reconstruction of excessively shortened labia minora is often not easy and not always satisfactory. Training and the establishment of surgical standards should be used to avoid errors and achieve the best result.

Level of Evidence IV This journal requires that authors assign a level of evidence to each article. For a full description of these Evidence-Based Medicine ratings, please refer to the Table of Contents or the online Instructions to Authors www.springer.com/00266.

Keywords Labial reconstruction · Iatrogenic labia minora deformity · Botched labia minora reduction · Small penis deformity · Clitoral protrusion

Introduction

An increasing number of procedures to address labial hypertrophy have been performed worldwide in recent years [1–4]. Hypertrophic labia minora can be a substantial burden to women suffering from this condition, both physically and psychologically. The decision to undergo labia reduction is not always a quick one, and patients often think long and hard before making this choice. They tend to have high expectations when it comes to the appearance of their labia after the procedure. Such patients are all the more disappointed if the result differs greatly from their expectations and even more so if mistakes are made during the procedure, causing irreparable damage or problems that are difficult to rectify.

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Table 1 Patient questionnaire

Patient questionnaire following labia minora reconstruction

Date: _____

1. When was the initial procedure to reduce the labia minora conducted? _____ (month and year)
2. How old were you at the time? _____ years
3. Was a corrective procedure performed following the initial procedure to reduce the labia minor?

   No ○
   Yes ○ Number:____ Over what period of time? _____

4. What type of medical specialist performed the procedure?
   a. Plastic surgeon ○
   b. Gynecologist ○
   c. Dermatologist ○
   d. Other ○
   e. Not known ○
5. The procedure was performed
   a. under local anesthesia ○
   b. under general anesthesia or twilight sleep ○
6. Why did you want to undergo labia minora reduction?
   a. Functional reasons (e.g., painful sexual intercourse, athletic activities, etc.) ○
   b. Psychological reasons (e.g., inhibitions about appearing naked in front of others, etc.) ○
   c. Psychological reasons *and* functional reasons ○
   d. Solely aesthetic reasons (no functional or psychological issues were involved) ○
7. Functional impairment
   a. I had the following functional problems before the initial procedure to reduce the labia minora:

	No	Yes
Pain (e.g., during sexual intercourse, athletic activities, bicycle riding, etc.)	○	○
Recurring skin irritations on the labia minora	○	○
Recurring vaginal or bladder infections	○	○
Recurring vaginal yeast infections	○	○
Deviation of the urine stream	○	○
Diminished response to sexual stimulation	○	○
Other problems or symptoms_____		
I was experiencing no functional impairment	○	○

Table 1 continued

b. Following the initial procedure to reduce the labia minora, the functional problems

worsened ○
(type of problem)_____

remained unchanged ○
(type of problem)_____

Improved ○
(type of problem)_____

ceased ○
(type of problem)_____

Did you experience any other problems following the initial procedure to reduce the labia minora?

No ○
Yes ○
(Type of problem)_____

c. Following the procedure to reconstruct the labia minora, the functional problems

worsened ○
(type of problem)_____

remained unchanged ○
(type of problem)_____

improved ○
(type of problem)_____

Ceased ○
(type of problem)_____

Did you experience any other problems following the procedure to reconstruct the labia minora?

No ○
Yes ○
(Type of problem)_____

Table 1 continued

8. Psychological problems

   a. Before you underwent the initial procedure to reduce the labia minora, were you experiencing any type of psychological problems, e.g., were you hesitant to appear naked in front of the others?

No	O
On occasion	O
To an average degree	O
To a great degree	O

   Did these issues affect your sex life?

No	O
On occasion	O
To an average degree	O
To a great degree	O

   b. Did you seek professional help as a result, e.g., did you see a psychologist?

Yes	O
No	O

   c. How did the psychological problems change following the initial procedure to reduce the labia minora?

Worsened	O
Remained unchanged	O
Improved	O
Ceased	O

   d. Did you seek professional help following the initial procedure, e.g., did you see a psychologist?

Yes	O
No	O

   e. How did your psychological problems change following the labia minora reconstruction?

Worsened	O
Remained unchanged	O
Improved	O
Ceased	O

Table 1 continued

f. Did you seek professional help following the labia minora reconstruction, e.g., did you see a psychologist?

Yes ○
No ○

9. Assessment of the result

Please mark the result of the labia minora reconstruction on a scale of 1.0 (very poor) to 10.0 (very good).

a. How do you rate the end result in comparison with the expectations you had before the initial procedure?

1,0_____10,0

b. How do you rate the latest result in terms of the severity of the deformation caused by the initial procedure?

1,0_____10,0

10. When was the labia minora reconstruction performed? _____

11. How old were you at the time? _____ years

12. Was a corrective procedure performed following the labia minora reconstruction?

No ○
Yes ○ Number: ___ Over what period of time? _____

13. How much time had passed between the initial procedure to reduce the labia minora and the labia minora reconstruction?

_____ years

_____ month

Patients and Methods

Between 2014 and 2020, all patients who had undergone labia minora reduction elsewhere and asked us to correct a postoperative iatrogenic deformity were reviewed and included in this study.

The results were assessed solely by the patients themselves after their treatment by means of an anonymous nonvalidated questionnaire (Table 1). It recorded the patients' satisfaction with the outcome of the procedure as well as their assessment of aesthetic and functional improvement (Fig. 1).

The aim of the labia reconstruction was twofold—first, to alleviate or even eliminate the functional symptoms and, second, to achieve the most aesthetically pleasing result possible, a result that would meet the expectations that the patient had before the initial operation if possible. There was no one standard technique as every iatrogenic

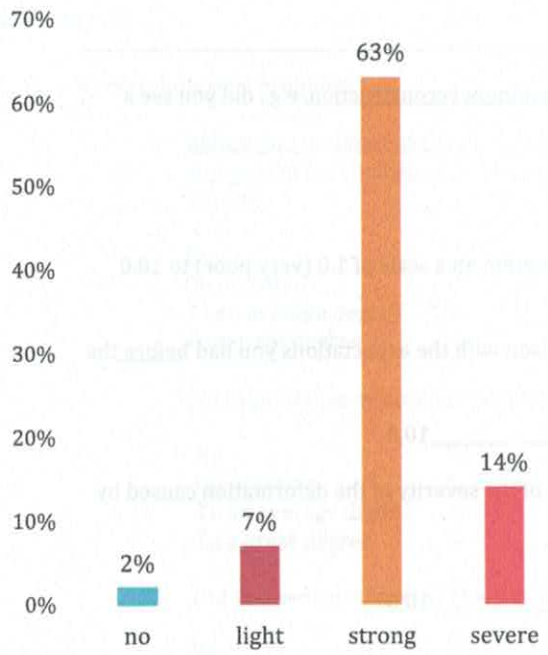

Fig. 1 Psychological impairment due to botched initial labia reduction

deformity varied greatly from patient to patient (Figs. 2, 3, 4, 5, 6, 7, 8, 9). But a number of recurring deformities were observed as a result of the many errors:

Overresection of the Labia Minora Below the Clitoris

This was the most common iatrogenic deformity (63% of cases). The excessive removal of the labia minora below the clitoris (segment 3, Fig. 10) [5] with excessive shortening or even amputation of the labia leaves the vaginal opening and vestibule exposed (Fig. 8). The most common reason for this deformity is the fear of damaging sensitive nerves. This is why excess tissue is left in the area around and above the clitoris. This results in the appearance of a "small penis" that is amplified by simultaneous clitoral protrusion (Fig. 2).

One of two options may be used to reconstruct the labia minora in the segment below the clitoris: the lateral preputial flap [6] or reconstruction using the vaginal skin advancement technique [5]. A combination of both approaches may also be used. The ultimate choice depends on the situation.

The lateral preputial flap technique is used if the patient has labial hypertrophy, i.e., excess tissue above the clitoris and the clitoral hood. In this technique, an incision is made to the skin approximately 3–4 mm lateral to the midline above the clitoral shaft and extending to the base of the labia minora on the mons veneris, where it rotates downward again and runs along the fold of the labia majora up to the level of the clitoris (Fig. 11). Depending on the patient's individual anatomy, a flap of varying length and width may be incised, which is then approximately 30–35 mm long and 6–8 mm wide. The flap is configured in a proximal direction, elevated, rotated 180° downward and trimmed as necessary to correct the defect (Fig. 12a–d). Sufficient subcutaneous tissue should be left behind to ensure that the flap, which does not have an axially defined vascular style, i.e., follows a random pattern, has good blood supply (Fig. 13). At the same time, it must not be cut back too far to avoid impairing the sensitive nerve supply to the clitoris via its dorsal nerve. The thickness of the flap is extremely important. In our experience, it should be at least 10 mm wide to prevent circulation from being compromised. The possibility arises after the flap has been elevated. It then needs to be rotated by 180°, a change that can significantly restrict its blood supply. On the other hand, if the base of the flap is too thick, it will not be mobile enough and cannot be rotated to correct the defect. The wound is closed subcutaneously using 5–0 Vicryl sutures and cutaneously using 6–0 Monocryl sutures following a transverse technique and a continuous U-suture along the labial ridge in the segment below the clitoris to achieve the smoothest contour possible.

The reconstruction of the labia minora using vaginal skin advancement is the only remaining option if the patient has insufficient skin above the labial segment, i.e., in the area of the prepuce (whether this is due to previous surgery or this is simply the patient's anatomy) to form a flap. This procedure begins by smoothing the usually frayed or irregular contour of the edges of the existing labia (if present) and then making a skin incision along the scar created by the previous operation lateral to the vaginal opening on both sides (Fig. 14a, b). Using dissecting scissors, the vaginal skin is then detached in a medial direction, approximately 3–4 cm into the vaginal vestibule, and in a lateral direction to slightly beyond the base of the labia majora (Fig. 15a, b). Both sections of skin mobilized in this way are then pulled tight to form a wall (Fig. 16). Unlike the preceding description [5] of this procedure, we usually also lift a thin layer of tissue, pediculated at its base, consisting of the fascia of the bulbospongiosus muscle and surrounding connective tissue, that is placed between the mobilized sheets of skin to reinforce the labial wall (Fig. 17a, b). Reinforcement with additional tissue has been shown to counteract the formed labia's tendency to shrink. To stabilize the labial wall in an upright position, penetrating U-sutures with a thickness of 4–0 Vicryl are stitched close together along its base (Fig. 18a, b). The labial ridge is closed using a continuous U-suture technique

Fig. 2 Unbalanced postoperative result following labia minora reduction posterior to the clitoris only, leaving hypertrophy of the prepuce, clitoral hood and clitoral protrusion untreated ("small penis deformity")

Fig. 3 Labial asymmetry, contour defect

Fig. 4 Gaps

Fig. 5 Frayed wound edges, subtotal–total amputation of the labia minora below the clitoris

Fig. 6 Bilateral total amputation of the labia minora below the clitoris

Fig. 7 Clitoral hood resection with total exposure of the glans, asymmetry

Fig. 8 Exposed vaginal opening, overresection and asymmetry

Fig. 9 Complete distortion and partial labial amputation

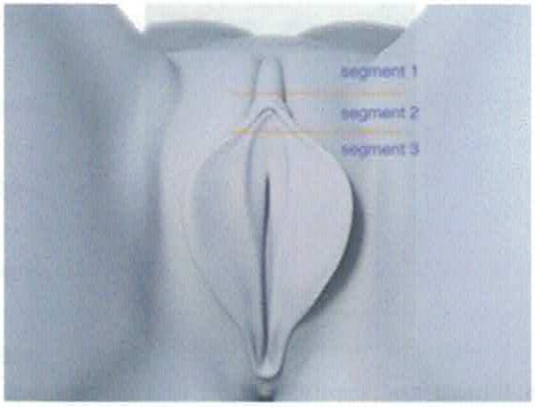

Fig. 10 Anatomical separation of the labia minora along their entire length

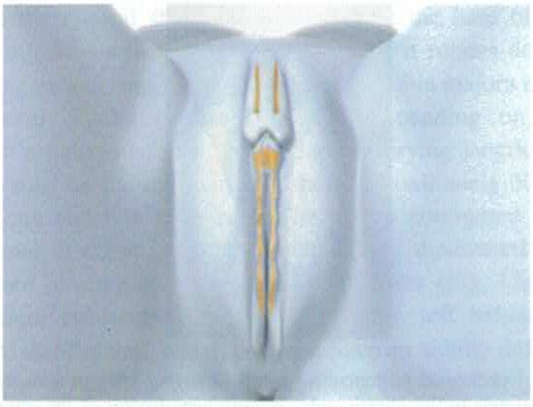

Fig. 11 Incisions parallel to the clitoral shaft and along the interlabial fold determine the shape and length of the flaps. Smoothing the contours below the clitoris for flap insertion.

with 6–0 Monocryl sutures. For this treatment to succeed, a compress must be placed in between the labia minora postoperatively for at least four weeks (Fig. 19). This compress will provide stability to the labial wall and keep it in an upright position. This will prevent it from collapsing again and compromising the upright position of the new labium.

The two procedures can also be combined. Clitoral protrusion, which often amplifies the appearance of a "small penis," can also be addressed as part of these two reconstructive procedures. This involves removing a diamond-shaped segment of skin from below the clitoris. By joining the edges of the wound, the clitoris is then lowered in both the lateral and frontal plane (Fig. 20a–c) in the

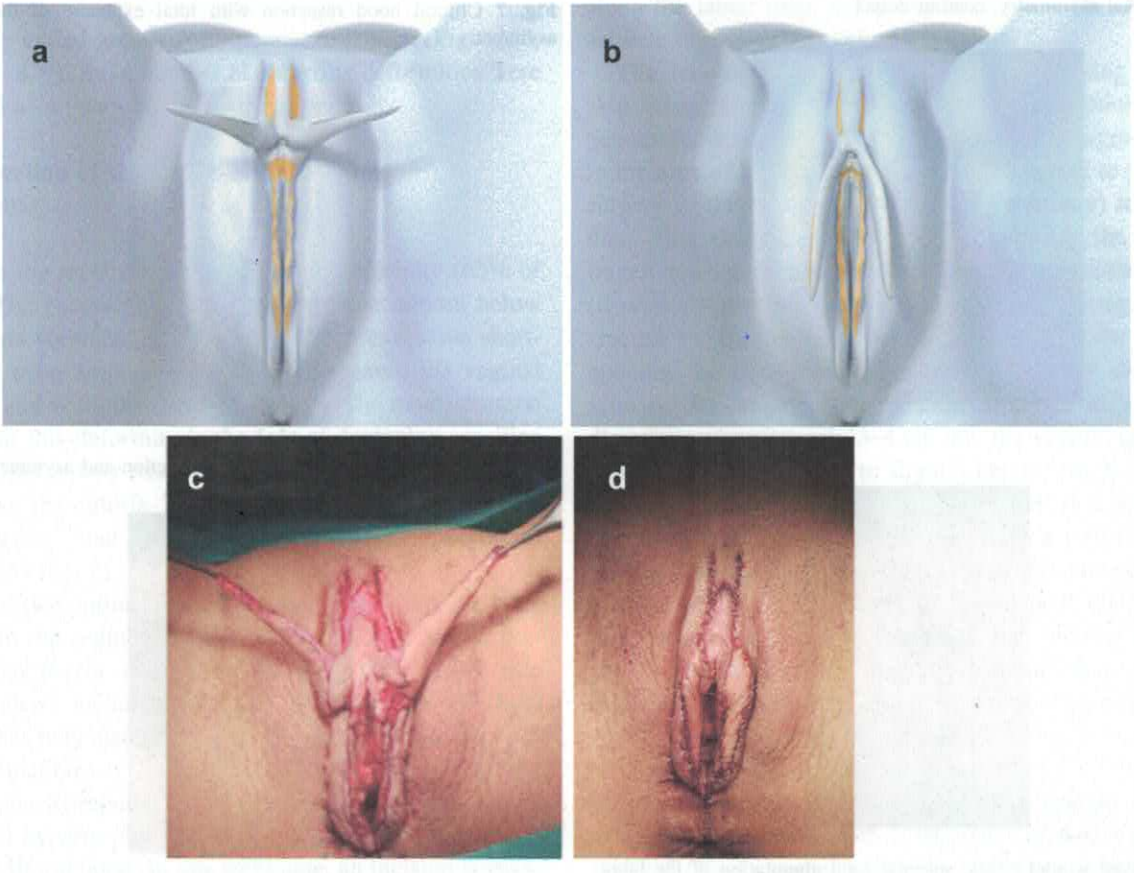

Fig. 12 **a–d** After the flaps have been resected, they are rotated 180° downward and attached at the base of the previous labia minora

Fig. 13 Sufficient subcutaneous tissue ensures that the flaps have a good blood supply

same manner as this sub-step of the *composite reduction labiaplasty* [7].

Asymmetry

Subtle asymmetries were addressed by shortening the larger opposite side. For more obvious asymmetries (Figs. 3,

Fig. 16 The mobilized sections of skin are erected to form a wall

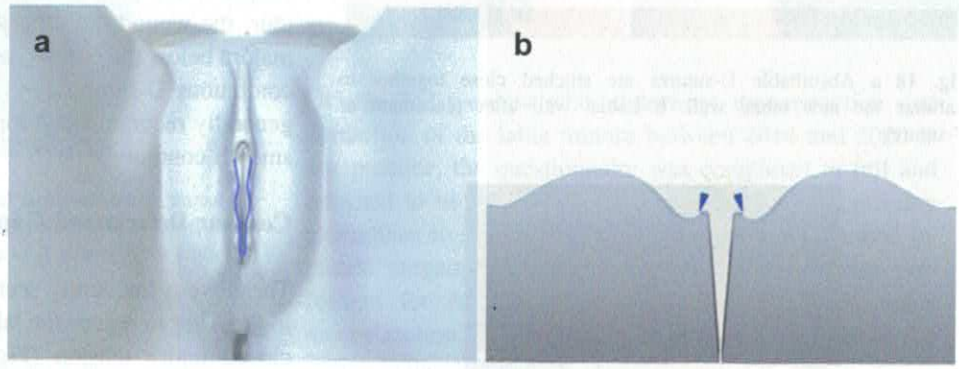

Fig. 14 **a** Incisions lateral to the vaginal opening, frontal view. **b** Incisions lateral to the vaginal opening at the former base of the labia minora

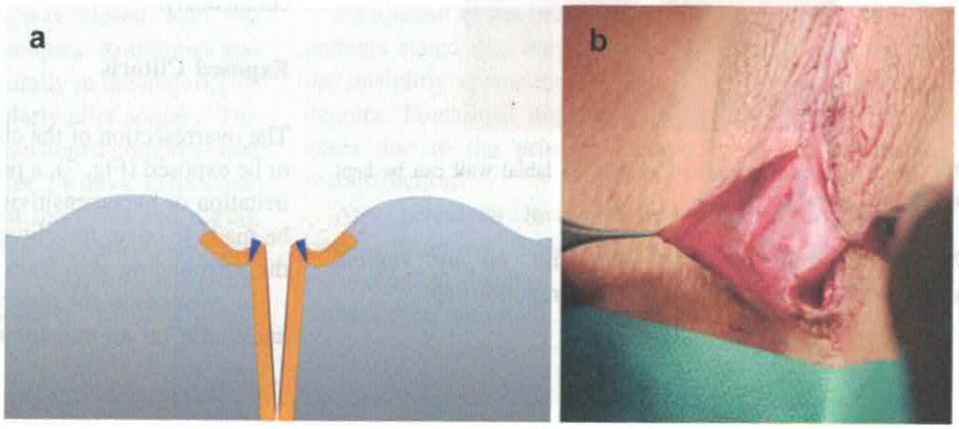

Fig. 15 **a** The vaginal skin is detached in the area marked in orange medial to the skin incision and lateral to the base of the labia majora. **b** Detached skin medial and lateral to the incision

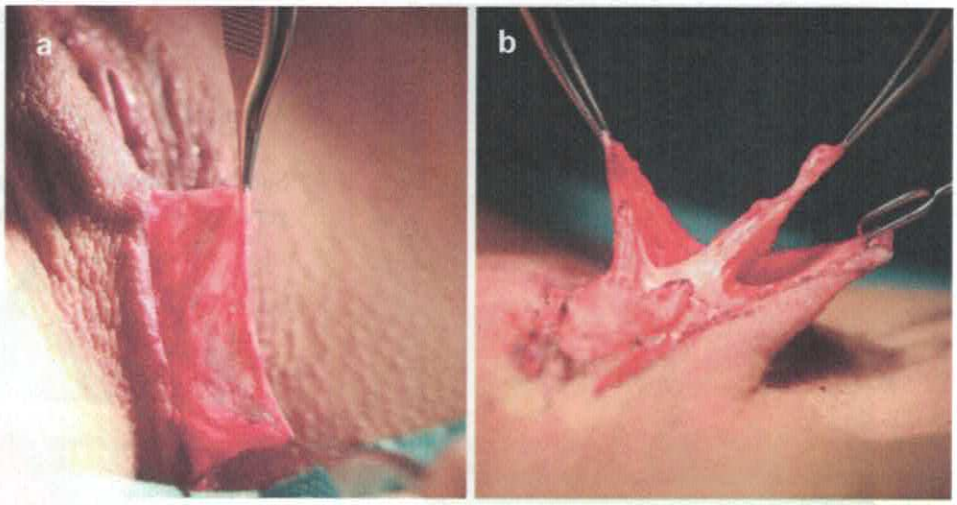

Fig. 17 **a** A thin layer of tissue consisting of the fascia of the bulbospongiosus muscle and surrounding connective tissue is used as a central layer to reinforce the new labial wall. **b** The labia minora are reconstructed using three sheets: medial (left) the mobilized vaginal skin and lateral (right) the mobilized skin up to the base of the labia majora. A sheet of tissue consisting of the fascia of the bulbospongiosus muscle and surrounding tissue

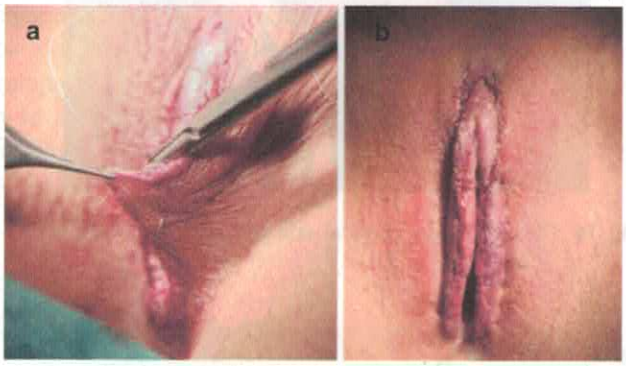

Fig. 18 **a** Absorbable U-sutures are stitched close together to stabilize the new labial wall. **b** Labial wall after placement of U-sutures

Fig. 19 A compress is inserted so that the labial wall can be kept upright postoperatively

7), the overresected side was built up by vaginal advancement or the use of a lateral preputial flap.

Frayed Wound Edges

This is a very common complaint (Fig. 5) that is primarily caused by incorrect suture technique, particularly if excessively thick stitches were used in a continuous technique to close the labial ridge. If the fraying was not too severe, it was smoothed out by making a linear incision along the labial ridge. Deep furrows, on the other hand, had to be cut open individually and closed using 6–0 Monocryl simple interrupted sutures. To avoid a rippled labia contour, the wound, i.e., the joining of the labia minora and majora below the clitoris, was closed using a 6–0 Monocryl continuous U-suture (Fig. 21). This suturing technique is generally recommended for this area as it gives the labia a smooth contour.

Contour Defects and Gaps

These were frequently seen after wedge resection according to *Alter* to reduce the labia minora when the wound was closed under tension (Figs. 3, 4). Correction involved excision of the defect with a three-layer closure using 5–0 Vicryl sutures subcutaneously and 6–0 Monocryl cutaneously.

Exposed Clitoris

The overresection of the clitoral hood can cause the clitoris to be exposed (Fig. 7), a problem that can sometimes cause irritation or hypersensitivity. If possible, an attempt should be made to cover the clitoris, at least to some extent, using the surrounding skin from the labia.

In most cases, the procedure was performed under local anesthesia on an outpatient basis. General anesthesia was

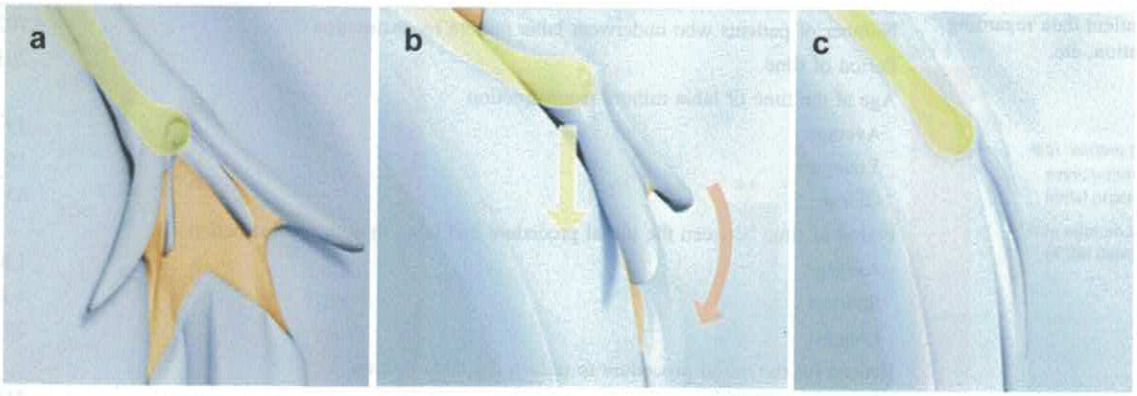

Fig. 20 **a–c** The clitoris is lowered to correct clitoral protrusion. **a** A trapezoidal area of skin below the clitoral glans is resected. **b** By closing the segment below the clitoris, the glans shifts in a posterior direction and corrects clitoral protrusion. **c** More inferior position of the glans of the clitoris

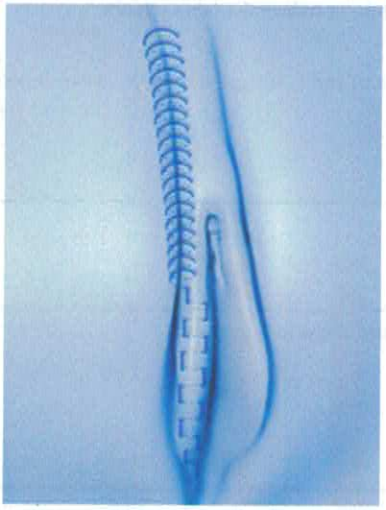

Fig. 21 The upper section of the wound is closed using transverse sutures to ensure that the wound edges are stable. It is better to use a continuous U-suture in the lower section as it allows for a smoother labial contour

used in a handful of cases. We always used an electrosurgical instrument to incise and resect the skin, not a scalpel. The wound was closed subcutaneously with 4.0 or 5.0 Vicryl sutures, and the skin was closed with 6.0 Monocryl sutures using various techniques. Antibiotics and pain medication were administered orally in the majority of cases. Patients were monitored regularly after surgery. The dressing consisted of an unfolded, moistened compress that had to be worn between the labia for 14 days. (The compress could be replaced after use of the toilet and during menstruation.) In the case of labia reconstruction, this compress was worn for four weeks in order to stabilize the new labial wall for as long as possible. In most cases, patients were also asked to apply pressure to the labia after two weeks over a period of one month. This pressure was applied to the corrected or reconstructed labia twice a day with the tip of the index finger and the thumb to prevent tissue swelling from draining and to achieve the best possible scar healing.

Skin grafts were not used for labia reconstruction as they do not regain sensation and have a different skin color, an aesthetically undesired development.

Results

Of the 702 patients who underwent reconstruction and correction of the labia minora between 2014 and 2020 at our practice, the questionnaire was completed in full and returned to us in 544 cases. The majority of the primary procedures to reduce the labia minora were performed by plastic surgeons. These procedures were generally performed for functional reasons. On average, the labia reconstruction surgery was performed 1.8 years after the initial labia reduction procedure, with the overall range extending from 25 years to just four months. The mean age of the patients was 33 years (Table 2).

As a result of the primary labiaplasty, a total of 98% of patients stated that they felt psychologically impaired by the unsightly appearance of their labia, albeit to varying degrees. Functional impairments were evident in 77% of cases due to the primary labiaplasty and before labia reconstruction.

Any perceived level of psychological impairment, ranging from very mild to very severe, was assessed as psychological distress. In 14% of cases, the women concerned even consulted with a psychologist or psychiatrist

Table 2 Patient data regarding age, motivation, etc.

Number of patients who underwent labia minora reconstruction	702
Period of time	2014–2020
Age at the time of labia minora reconstruction	
Average	33 years
Youngest	15 years
Oldest	63 years
Period of time between the initial procedure and labia minora reconstruction	
Average	1,8 years
Shortest	4 month
Longest	25 years
Reason for the initial procedure to reduce the labia minora	
Functional problems	51%
Psychological impairment	9%
Functional and psychological impairment	33%
Solely aesthetic reasons (neither functional nor psychological problems)	7%
Medical specialist who performed the initial procedure to reduce the labia minora	
Plastic surgeon	61%
Gynecologist	22%
Dermatologist	3%
Other	2%
Not known	12%

Table 3 Functional inhibitions and complaints following the initial procedure to reduce the labia minora

Pain (e.g., during sexual intercourse, athletic activities, bicycle riding, etc.)	76%
Recurring vaginal or bladder infections	22%
Deviation of the urine stream	41%
Diminished response to sexual stimulation	7%
Other problem	4%

Table 4 Number and type of procedures

Reconstruction of the labia minora through lateral preputial flaps	192
Reconstruction of the labia minora through vaginal advancement	226
Reconstruction through preputial flaps and vaginal skin advancement	271
Smoothing of frayed wound edges, correction of contour defects, gaps	106
Correction of asymmetries	87
Correction of the clitoral hood	35
Other	56
Total number of reconstruction procedures performed on the labia minora	973

as a result of their poorly performed initial operation (severe cases) (Fig. 1). Even prior to the initial surgery the patients surveyed were suffering psychological impairment (Table 2) and their sexual desires had been affected to some extent by the unsightly appearance of their labia—a feeling that was only intensified by the poorly performed initial operation. Any form of physical impairment was recorded as a functional disorder. After the primary

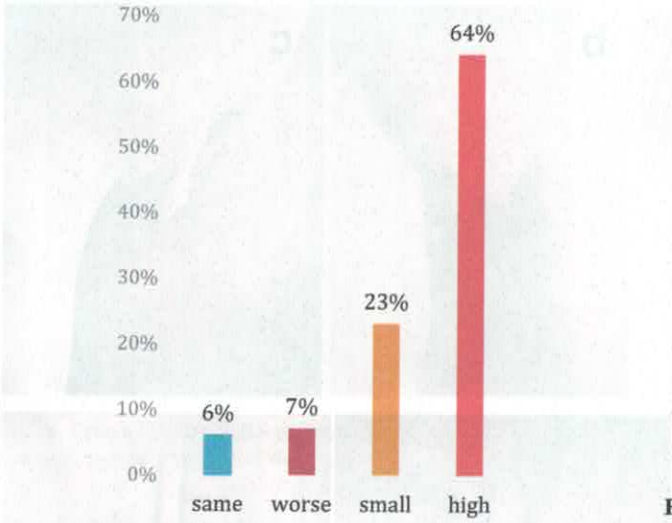

Fig. 22 Improvement of psychological impairment after labia reconstruction

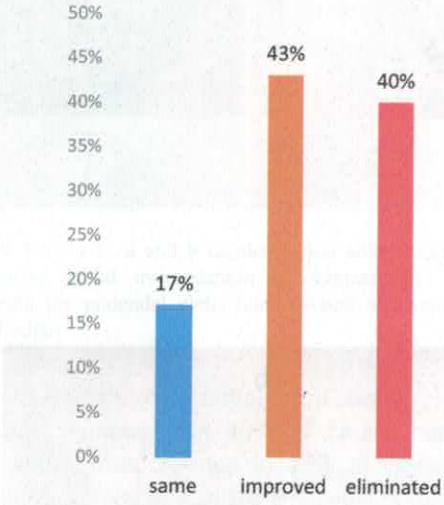

Fig. 23 Improvement of functional impairments after labia reconstruction

surgery, patients suffered from pain or irritation while having sexual intercourse or experiencing other mechanical stresses, e.g., when playing sports, riding a bicycle, etc., in 76%. A total of 22% of respondents had recurring bouts of bacterial vaginosis due to the exposed opening to their vagina, and 7% experienced reduced sensitivity. Three members of this latter category stated that they had been unable to reach orgasm since the labiaplasty due to a loss of clitoral sensation. A total of 41% of patients experienced

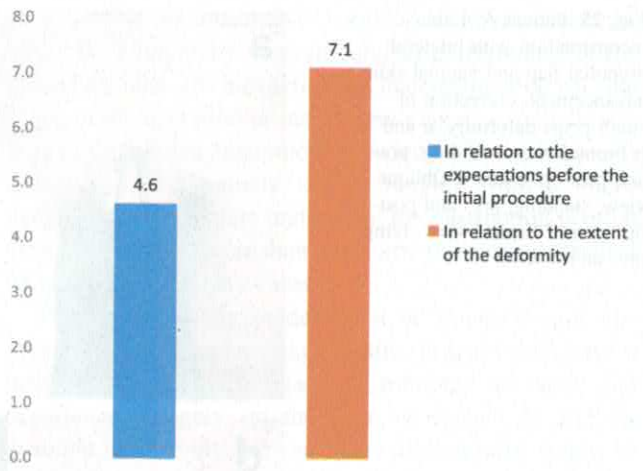

Fig. 24 Overall satisfaction with the final result in relation to the patient's expectations prior to the initial labia reduction and in relation to the extent of the iatrogenic deformity

disturbing and uncontrollable urinary stream deflection as a result of their initial operation (Table 3).

Of the patients we treated, we reconstructed the labia minora using a lateral preputial flap in 192 cases and vaginal skin advancement in 226 patients. We used a combination of the two procedures in 271 cases. Asymmetry was corrected in 87 cases, and contour defects and gaps were corrected and frayed wound edges smoothed in 106 cases. The contour of the clitoral hood was corrected and an exposed clitoris was covered in 35 cases. We also performed a series of smaller corrective procedures that are not detailed any further in this document in an additional 56 cases. Several of the corrective procedures described here were frequently used on a patient (Table 4).

The most common complication associated with reconstructive procedures is a wound healing disorder. This problem occurred in 37% of cases (e.g., wound dehiscence requiring correction, irregularities of the labia contour). Skin necrosis, mainly due to reconstruction of the labia minora by using a lateral preputial flap or by vaginal skin advancement, occurred in 7% of cases. This also included superficial skin necrosis, mainly as a result of venous congestion, whereby the skin did subsequently regenerate. For patients who underwent labia reconstruction using the lateral preputial flap method, complete flap necrosis occurred in 12 cases. No infections or the worsening of a patient's capacity for sexual stimulation were reported. Further corrections requiring two or more surgeries were necessary in 43% of all cases.

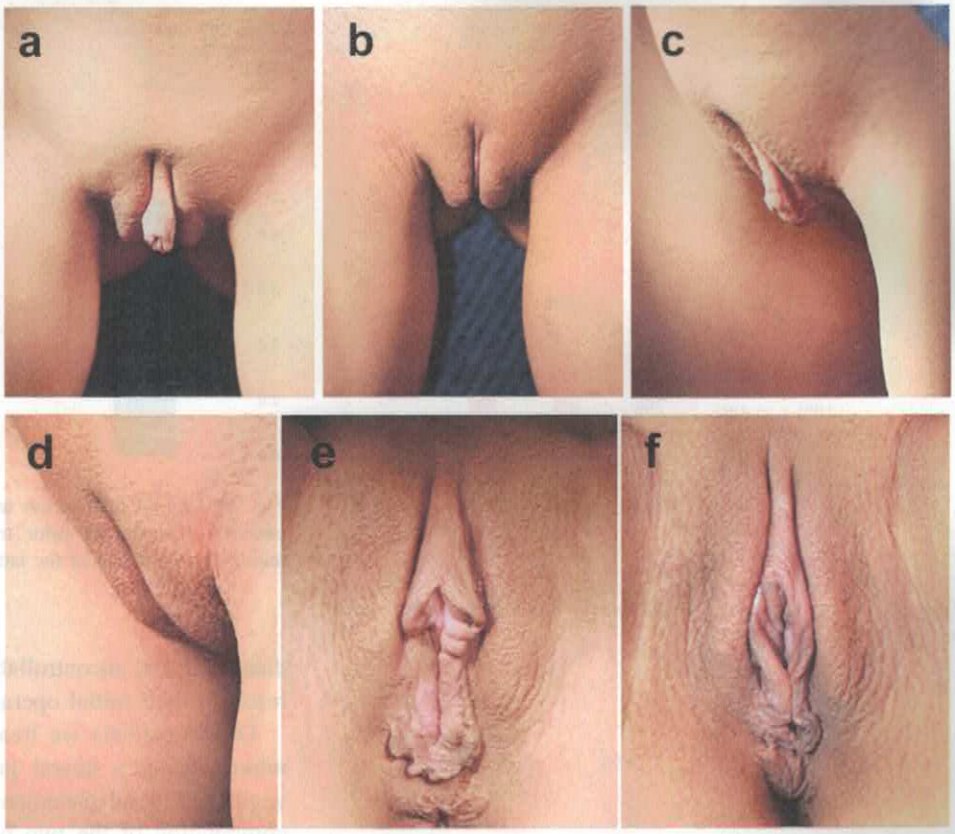

Fig. 25 Patient A: Labia reconstruction with bilateral preputial flap and vaginal skin advancement, correction of small penis deformity. **a** and **b** Frontal view, standing, pre- and post-op. **c** and **d** Oblique view, standing, pre- and post-op. **e** and **f** Frontal view, lying, pre- and post-op

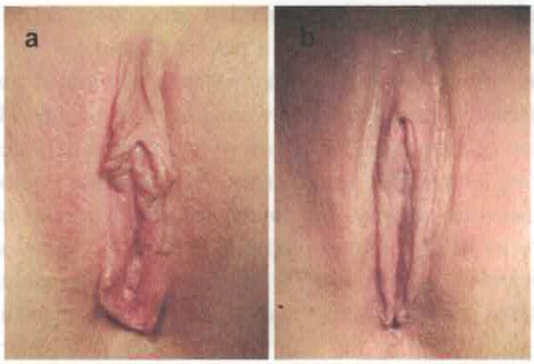

Fig. 26 Patient B: Labia reconstruction with bilateral preputial flap. **a** and **b** Frontal view lying, pre- and post-op

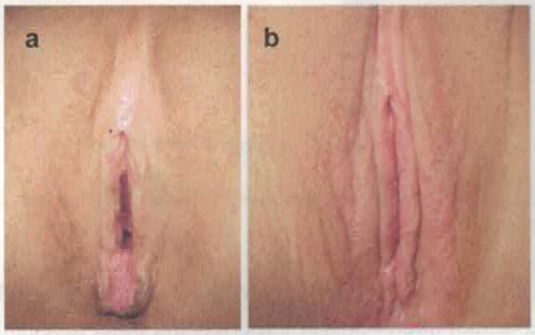

Fig. 27 Patient C: Labia reconstruction with vaginal skin advancement. **a** and **b** Frontal view lying, pre- and post-op

When labia reconstruction was completed, the development of existing psychological and functional disorders was related to the patient's situation after the initial surgery and not to the period preceding it, even though these impairments existed before the initial procedure in most cases. The vast majority of patients (64%) stated that their psychological distress improved substantially after labia reconstruction, with 23% experiencing only minor improvement. The psychological situation remained the same compared with the initial situation in 6% of cases and even worsened for 7% of patients (Fig. 22).

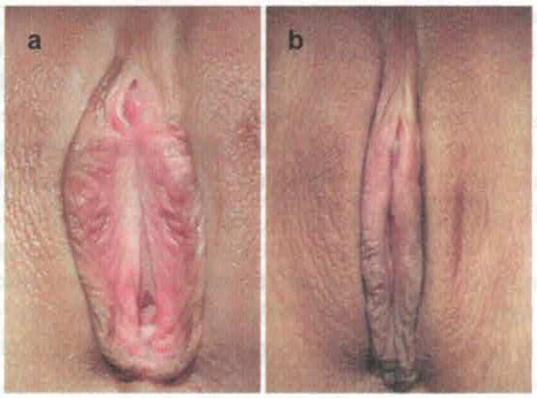

Fig. 28 Patient D: **a** and **b** Reconstruction after subtotal clitoral hood resection. Lateral covering of the exposed glans

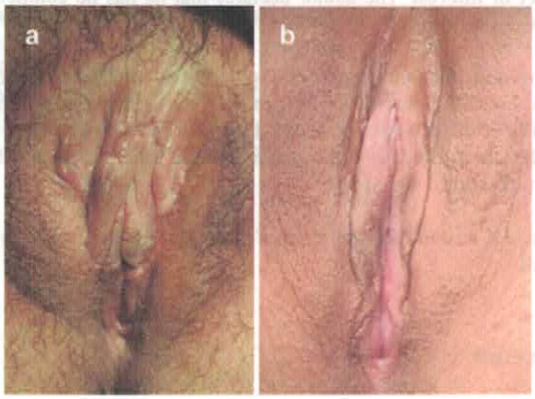

Fig. 29 Patient E: **a** and **b** reconstruction after complete distortion and partial labial overresection by vaginal skin advancement, narrowing the pudendal cleft, scar revision and smoothing frayed wound edges

The correction of the initial result completely eliminated functional symptoms in 40% of cases, and substantial improvement was reported in 43% of cases. Functional symptoms did not worsen for any patients (0%), and 17% did not experience any change in their situation (Fig. 23).

Patient satisfaction with the overall result achieved when compared with the situation before the initial procedure was scored 4.6 out of a maximum of 10 points. Overall satisfaction with the result achieved in relation to the patient's situation caused by the damage resulting from the initial operation was rated as 7.1 (Figs. 24, 25, 26, 27, 28, 29).

Discussion

Iatrogenic deformities are the root cause of the vast majority of revisions performed in our practice following an initial labia reduction performed elsewhere. There are several reasons for this. They include the surgeon's use of an incorrect or unsuitable surgical technique and the physician's imprecise or even careless performance of the procedure due to inexperience, underestimation of the scope of the operation or insufficient expertise, particularly as regards detailed anatomical knowledge. The spectrum of deformities is extremely varied, ranging from a minor irregularity to complete mutilation. Reconstruction is often very difficult, and more than one corrective procedure must be performed in many cases.

The comparatively sudden burst of female genital surgery into the daily practice of plastic surgeons does have a dangerous drawback—a lack of training, standards and experience. Surgery on the nose or female breast, for example, has evolved over many decades, is taught at major institutions and has been a key topic at conferences and advanced training events from the very beginning. This is not the case with genital surgery. It is taught very rarely, and when it is, it is assigned the very last slot for discussion at conferences. However, as many surgeons are eager to secure their position in this growing market, they operate at their own discretion without the necessary training, guidelines or surgical experience. The results often reflect these shortcomings. At the very least, they should have a selection of published surgical techniques [8–21] to follow.

The Deutsche Gynäkologische Fachgesellschaft (German Society of Gynecology) has warned against performing aesthetic genital surgeries and describes procedures involving the labia as obsolete [22]. In Switzerland, politicians are even talking about banning the procedure [23].

However, a ban is not the right way to go. Operations that are incompetently and incorrectly done must not be used as the basis for the evaluation of a surgical treatment or be allowed to block medical progress. On the contrary, as with any other surgical procedure, we need to take a more respectful and professional approach to intimate surgery, combined with the possibility of enhancing knowledge of this field during plastic surgery training at the very least, including teaching specific anatomical details and surgical techniques with indications, possibilities and risks.

A lack of knowledge of anatomical details combined with the fear of causing sensory disturbances in a patient [24–28] produces the most common iatrogenic deformity associated with labia reduction that we see in our practice—the appearance of a "small penis."

This is caused by the overresection of the labia minora below the clitoris, with excess tissue left behind in the area around the clitoral hood and above the clitoris. This is amplified further if the patient also has clitoral protrusion. This deformity is extremely distressing for the women concerned and could be avoided by applying the correct

surgical technique that addresses the entire labia minora, including the size and position of the clitoris, e.g., by using the *composite reduction labiaplasty* technique [7].

Minor follow-up corrective procedures are frequently required after the initial operation. The genital region is significantly affected by the mechanical friction caused by walking or sitting. Mobilizing the area on which the procedure has been performed is hardly an option. This is why wound healing disorders are fairly common. Having said that, many complications can be avoided preemptively—major asymmetry can be prevented by precisely marking the incision line prior to injecting the local anesthesia. Electrosurgical instruments can make precise incision lines that cannot be achieved using a scalpel or scissors, and the use of the correct sutures and suture technique prevents the formation of a frayed labial contour. Clear guidelines concerning postoperative conduct and care, such as avoiding friction (e.g., sexual intercourse, jogging, cycling), also help the patient heal without any complications.

The evaluation of the result of a reconstruction is unique, as the ultimate result needs to be assessed in relation to the patient's initial situation and expected outcome from her initial operation, as well with regard to the degree of severity of the iatrogenic impairment.

On the one hand, patients are extremely happy with the improvement in their situation. But, on the other hand, they are also disappointed if it ultimately proved to be impossible to achieve the result they hoped for prior to the initial operation. This is particularly pertinent with regard to the external appearance of the labia. This is reflected in the evaluation of the results, which, compared to an initial operation, was substantially worse in the assessment of general patient satisfaction relating to the starting situation before the initial operation, scoring 4.6 points, than in the assessment of the initial procedures associated with a composite reduction labiaplasty (7). In this case, the evaluation of the overall result, also with regard to the aesthetic appearance achieved, scored an average of 9.4 on a scale of 0–10.

The elimination of functional impairments in 40% of cases, however, is very gratifying, and patients' symptoms were at least alleviated or improved in 43% of cases. This factor, along with an ultimately acceptable aesthetic result, may have contributed to the fact that the evaluation of the overall result in relation to the severity of the deformity can conclusively be rated as extremely satisfactory, scoring 7.1 out of 10.

Conclusion

Female genital surgery, especially labia reduction, has become firmly established in the treatment spectrum of many plastic surgery practices and centers due to an increasing demand for it in our Western world. The demand for the best possible medical and surgical treatment should also apply to these procedures, just as it does to any other operation. The harsh reality that the number of patients experiencing poor outcomes and mutilations is on the rise requires us to urgently change our approach—specifically by introducing operative standards and including this subfield as an option in plastic surgery training at the very least. The reconstruction of mutilations, e.g., fully amputated labia minora, is not easy and frequently produces only mediocre results. The prevention of errors during the initial operation must become a top priority as a result.

Declarations

Conflict of interest The author declares that he has no conflicts of interest to disclose.

Human and Animal Rights All procedures were performed in studies involving human participants in accordance with ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or compatible ethical standards.

Informed Consent For this type of study, informed consent is not required.

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