

The Safe Practice of Female Genital Plastic Surgery

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Summary: The purpose of this article is to guide surgeons in the safe practice of female genital plastic surgery when the number of such cases is steadily increasing. A careful review of salient things to look for in the patient's motivation, medical history, and physical examination can help the surgeon wisely choose best candidates. The anatomy is described, with particular attention given to the variations not generally described in textbooks or articles. Descriptions are included for labiaplasty, including clitoral hood reduction, majoraplasty, monsplasty, and perineoplasty with vaginoplasty. Reduction of anesthetic risks, deep venous thromboses, and pulmonary emboli are discussed, with special consideration for avoidance of nerve injury and compartment syndrome. Postoperative care of a variety of vulvovaginal procedures is discussed. Videos showing anatomic variations and surgical techniques of common female genital procedures with recommendations to reduce the complication rate are included in the article. (*Plast Reconstr Surg Glob Open* 2021;9:e3660; doi: 10.1097/GOX.0000000000003660; Published online 6 July 2021.)

THE SAFE PRACTICE OF FEMALE GENITAL PLASTIC SURGERY

Female genital plastic surgery is growing in popularity. Labiaplasty in particular has increased 600% in less than a decade in the United States, from 2142 procedures in 2011 to 12,903 in 2019.^{1,2} These numbers are likely an underestimate because they do not account for the procedures that gynecologists perform.³ This rise, which is global, has been attributed to several reasons, including functional, sexual, and appearance-related concerns; online access to information; the proliferation of photographs on the internet; depilation; negative comments; and cultural influences.⁴⁻⁴⁰

Female genital plastic surgery includes labiaplasty, clitoral hood reduction, labia majoraplasty, perineoplasty, vaginoplasty, and monsplasty. Less common procedures, which are beyond the scope of this article, include hymenoplasty, anterior and posterior commissuroplasty, and labia minora reconstruction after iatrogenic amputation and

female genital mutilation.^{3,41} Nonsurgical procedure modalities, such as energy-based devices, PRP injection, the O-shot, and G-spot augmentation, are also beyond the scope of this article.

EVALUATION

Establish Goals, Motivation, and Expectations

Patients interested in labiaplasty, the most commonly requested procedure, may complain of chaffing, itching, personal hygiene issues, dyspareunia, pain with exercise, tugging, exposure in a bathing suit, recurrent urinary tract infections, and deviation of urine stream.⁷⁻⁴⁰ Patients interested in vaginoplasty and perineoplasty after vaginal delivery may note loss of friction during intercourse and reduced sexual satisfaction.⁴²⁻⁴⁴ Mons and labia majora concerns are generally cosmetic. Professional cyclists with labia majora hypertrophy may request a labia majora reduction to relieve pain and pressure.^{45,46} Validated questionnaires can provide an objective measure of symptoms and motivations.^{7,9,10,15,17,29,30,33,47,48}

As with any aesthetic procedure, the surgeon should vet patients for unrealistic expectations and body dysmorphic disorder. Body dysmorphic disorder is defined

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as a disproportionate dissatisfaction with the appearance of normal-appearing female genitalia, yet an *assumption* that a woman with normal-appearing anatomy desiring a female genital cosmetic procedure must be experiencing body dysmorphic disorder may indicate an evaluating physician's failure to understand the symptomatology and cosmetic concerns that can be associated with normal anatomy.^{7,15,47} The marked drop in body dissatisfaction symptoms following female genital plastic surgery suggests that many of these patients likely have body dissatisfaction rather than true dysmorphia. Nonetheless, these patients should be carefully counseled and screened during consultation.¹⁷ The patient may have already seen online images that may or may not convey an accurate impression of what surgery can accomplish, so a discussion with a review of before-and-after photographs can help establish realistic expectations.

If a vaginoplasty or perineoplasty is considered, a thorough obstetrical and gynecological history, including method of delivery, urinary incontinence, and pelvic maladies, is particularly important to elicit in vaginoplasty and perineoplasty patients.^{49,50}

Body Mass Index

A high body mass index (BMI > 30) raises surgical risks in any patient, but it is a particular concern in patients interested in vaginoplasty and perineoplasty. Chronic pressure on the pelvic floor predisposes these patients to POP, urinary incontinence, rectocele, and cystocele.^{51,52} Ninety percent of morbidly obese women experience pelvic floor disorders, compared with 23.7% of women in general.^{53–55}

Parity

The trauma of vaginal childbirth, especially with the use of forceps or vacuum; multiparity; and high newborn birthweight can widen the vagina and injure both the pudendal nerve and the levator ani muscle complex, predisposing to POP.^{56–61}

Menopause

The loss of estrogen production with menopause can result in atrophy of the genital tissues, leading to vaginal pain, vulvar pain, itching, discharge, and dyspareunia from loss of lubrication and narrowing of the vagina. Additionally, an increase in vaginal pH predisposes postmenopausal women to urinary tract infections.⁶¹ Within a decade of menopause, half of women experience these symptoms, defined as the genitourinary syndrome of menopause.⁶² Locally active estradiol cream, capsules, tablets, and rings can help increase vaginal mucosa thickness, reduce vaginal pH, improve moisture, and relieve dyspareunia.^{63–65}

PHYSICAL EXAMINATION

The patient should be examined both standing and in the lithotomy position. An examination chair with retractable stirrups facilitates visualization and promotes patient comfort. In the standing position, the labia minora are noted for the degree of projection beyond the labia

majora, and the labia majora are noted for ptosis, volume, and fullness.

Superficial Anatomy of the Vulva

The vulval complex can be divided into structured anatomical regions: the mon pubis, clitoral area, the labial-clitoral complex,⁶⁶ labia minora, labia majora, and perineal area (Fig. 1). As with facial aesthetics, surgery of the vulva should achieve "genital harmony."⁶⁶ Most textbooks and scientific articles illustrate the vulva with little variation, disadvantaging surgeons who may be unprepared for the anatomic variations they encounter^{66–69} (Fig. 2).

Labia minora classification systems often focus on length, measured from introitus to edge; degree of protrusion beyond the labia majora; or the relationship of minora, majora, clitoral hood, and fourchette.^{66,68–71} Dimensions help in operative planning but are poor determinants of a patient's candidacy for labiaplasty. Far more important is patient symptomatology.^{7,15,47}

Instead of using absolute measurements, one of the authors (PEB) has described 3 main anatomical variants, based on the maximal projecting point of the labium: Type I projects maximally in the upper third, Type II in the middle third, and Type III in the lower third (Fig. 3). Contralateral sides can differ. These variants may influence choice of labiaplasty technique, trim or wedge, and the type of wedge⁷² (Fig. 4).

Evaluation for Vaginal Laxity, Rectocele, and Cystocele

Candidates for vaginoplasty and perineoplasty should be evaluated for pelvic organ prolapse (POP), including rectocele and cystocele.^{73–75} A cystocele is associated with urinary frequency, urgency, and incontinence; a rectocele is associated with constipation, including a history of digital manipulation to facilitate defecation.⁷³ Patients with POP, obstructed defecation, or urinary or anal incontinence should be referred to a gynecologist, urologist, or urogynecologist.^{2,18,73–75} The short form Pelvic Organ Prolapse/Urinary Incontinence/Sexual Questionnaire (PISQ-12) aids in screening patients.⁷⁶

In the standing position, the female perineum is typically located at a level within 2 cm of the ischial tuberosities. If the perineum lies below this level, at rest or with a Valsalva maneuver, the patient should be referred for an evaluation of POP.^{42,44} In the lithotomy position, observation of attenuated mucosa with scant muscle bulk within the perineal body and proximity of the posterior fourchette to the anus should be noted. As the patient bears down and tightens, the surgeon can digitally assess the vaginal width and the levator ani muscles, each finger breadth of separation approximated 1 centimeter.⁴² A rectovaginal examination is conducted to assess the integrity of posterior vaginal wall.^{2,42,50} Lax, widely separated levator ani muscles are best addressed with a vaginoplasty.^{42,44}

NERVE SUPPLY, VASCULATURE, AND MUSCLES

The pudendal nerve innervates the external female genitalia, splitting into the deep and superficial perineal

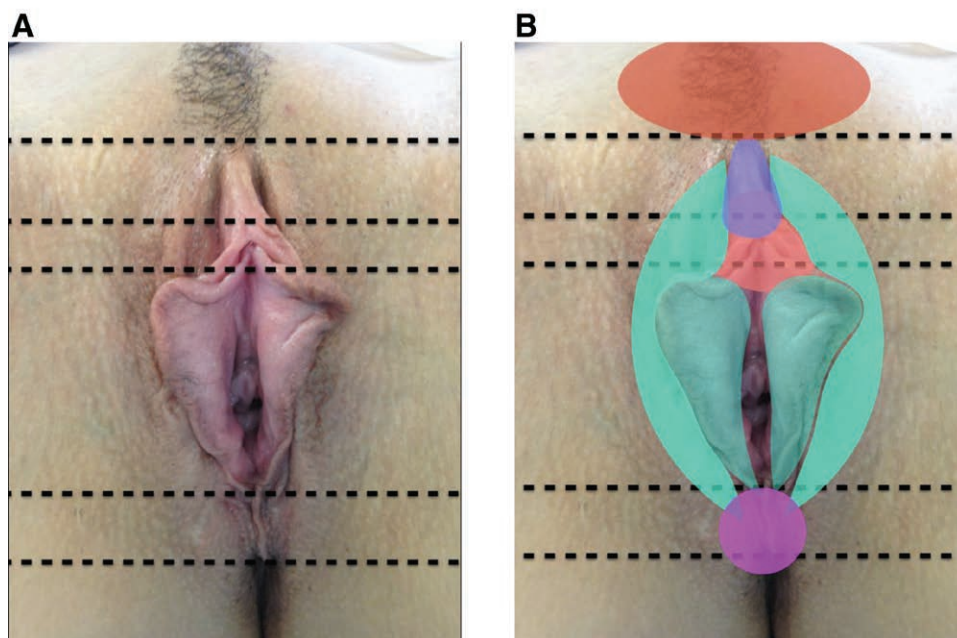


Fig. 1. A, Systematic assessment of the vulval complex. Dividing the vulval complex into 6 areas allows careful evaluation. B, Careful attention should be paid to each of these areas: labia minora, clitoral complex, labial-clitoral interface (complex), labia majora, pubic area, and perineal area. The quality of the tissues, rugosity, pigmentation and asymmetries should be noted. Reproduced with permission from Hamori CA, Banwell PE, Alinsod R. eds. *Female Cosmetic Genital Surgery. Concepts, Classification, and Techniques*. New York: Thieme; 2017.

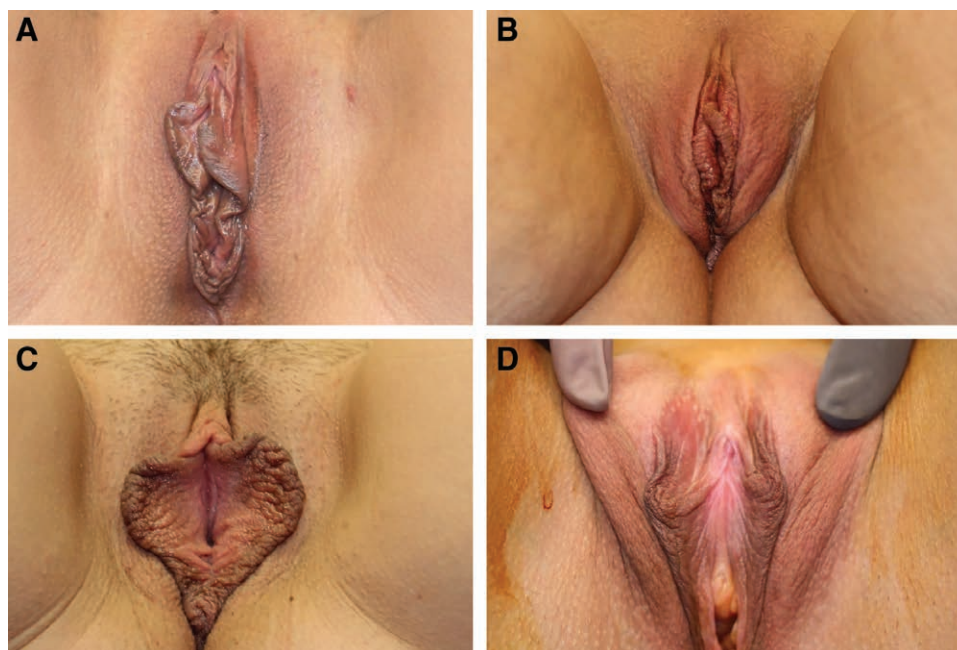


Fig. 2. Anatomic variations seen in clinical practice. Labia minora vary in pigmentation, texture (rugose or smooth), thickness, symmetry, shape, projection, and symmetry. Above left, This patient has a double clitoral hood, with an upper fold and lower fold. In this case, the lateral fold merges onto the superior aspect of the labia minora. Above right, In this patient, the lateral clitoral hood merges with the medial labia minora. The clitoris is recessed, and clitoral hood projects more laterally than centrally. Below left, In this patient, the thick mucosa of the fourchette merges with the raphe over an expansive area. Below right, In this patient, the clitoral hood merges onto the medial labia minora, and the labia minora merge superiorly onto the medial labia majora. Reproduced with permission from *Plast Reconstr Surg.* 2020;146:451e–463e. 10.1097/PRS.0000000000007349.²

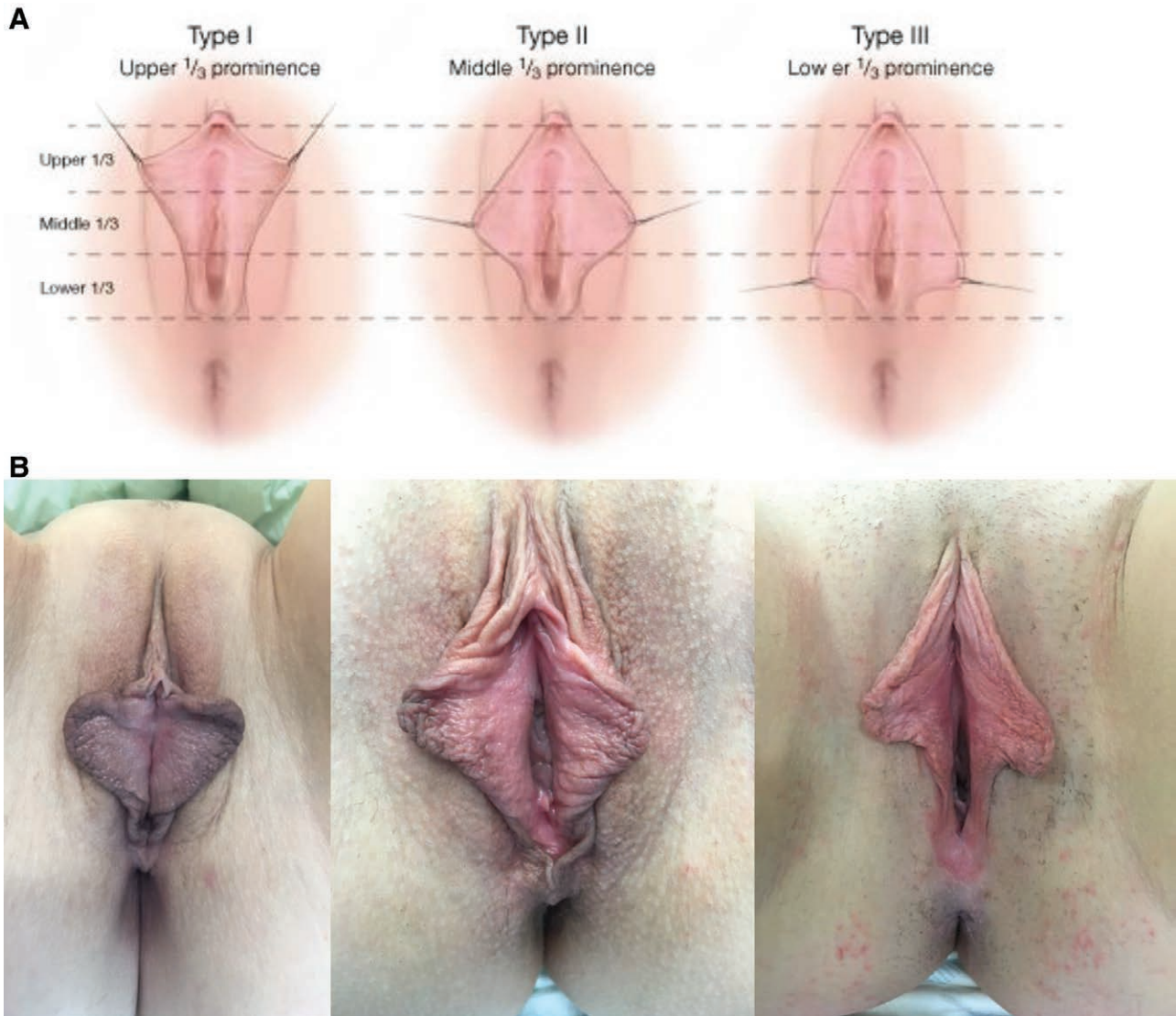


Fig. 3. The Banwell Classification. The labia minora are divided into three morphological types. Top left, center, and right, The most prominent point (width) of the labia may be seen in the upper third (Type I), middle third (Type II), or lower third (Type III). Example of Type I (lower left), Type II (lower center), and Example of Type III (lower, right). Reproduced with permission from Hamori CA, Banwell PE, Alinsod R. eds. *Female Cosmetic Genital Surgery. Concepts, Classification, and Techniques*. New York: Thieme; 2017.

nerves. The deep perineal nerve gives rise to the dorsal nerve of the clitoris, and the superficial perineal nerve gives rise to the posterior labial nerve, its sensory branches innervating the labia minora, with sparse branches to the labia majora.^{2,66,77} Deep to the clitoral fascia, the tunica albuginea encapsulates the dorsal clitoral nerve and artery and erectile cavernosa.⁷⁸ The dorsal clitoral nerve travels deep, along the medial ischiopubic rami, emerging in its trajectory toward the glans. If the surgeon remains far from the glans and superficial to dartos fascia, injury to the clitoris is unlikely.^{2,66,77}

The pudendal artery provides the blood supply to the labia majora and minora via the posterior labial and perineal arteries. The labia minora are supplied by a small anterior artery, a dominant central artery, and two moderate posterior arteries (Fig. 4). The external and internal

pudendal arteries communicate through branches along the anterior labia minora and also through the frenulum arteries. When planning a wedge labiaplasty, the surgeon should remember that the anterior labium minus is the least perfused. A posteriorly based flap has a more reliable blood supply than one based anteriorly.⁷⁹ Of note, the nerves and vasculature of the labia minora travel within interstitial connective tissue, which is nonerectile.⁷⁹⁻⁸¹

The bulbocavernosus muscles are positioned like parentheses deep to the labia majora, uniting posteriorly to form part of the bulk of the perineal body. The medial transverse superficial perineal muscles, arising from the ischial tuberosities, contribute the remaining bulk. The pubococcygeus, the iliococcygeus, and the puborectalis constitute the levator ani muscles. These broad, thin muscles that form a major part of the pelvic floor separate

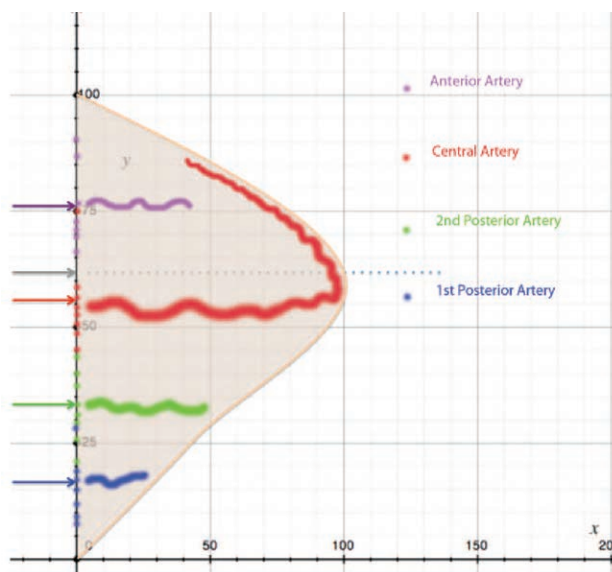


Fig. 4. Mapping of the labial arteries. On the y axis, emergence of the arteries found in every subject is noted. An arrow indicates the mean value of emergence for every artery as a distance from the posterior fourchette. The anterior artery is small, the central artery is dominant, and there are two posterior arteries. Reproduced with permission from *Plast Reconstr Surg.* 2015;136:167–178. doi: 10.1097/PRS.0000000000001394.⁷²

with pregnancy and childbirth, predisposing to vaginal laxity^{42,44} (Fig. 5).

ANESTHESIA

Types of Anesthesia

Local anesthesia with oral sedation is ideal for labiaplasty. Majoraplasty, perineoplasty, and mons liposuction can be done under local with oral or intravenous sedation, but general anesthesia may be preferred if the operative site is scarred, multiple procedures are being performed, or the surgeon anticipates difficulty. A vaginoplasty can be performed under general anesthesia or pudendal block.² Local anesthesia avoids potential complications associated with general anesthesia (like nausea, vomiting, and the rarer aspiration pneumonia, malignant hyperthermia, and thromboembolic events), but some patients are more comfortable under general anesthesia.²

Prevention of Deep Venous Thrombosis and Pulmonary Embolism

Risk factors for deep venous thrombosis and pulmonary embolism include age older than 35, BMI more than 25, hypercoagulability, family history, smoking, and estrogen therapy.⁸² To lower those risks, patients can lose weight and temporarily cease taking exogenous estrogen 3–4 weeks before and after surgery. Sequential compression devices can be used during surgery and the stirrups positioned so the hips flex at 90 degrees in the lithotomy position, maximizing venous drainage. After surgery, patients should engage in early ambulation and hydrate

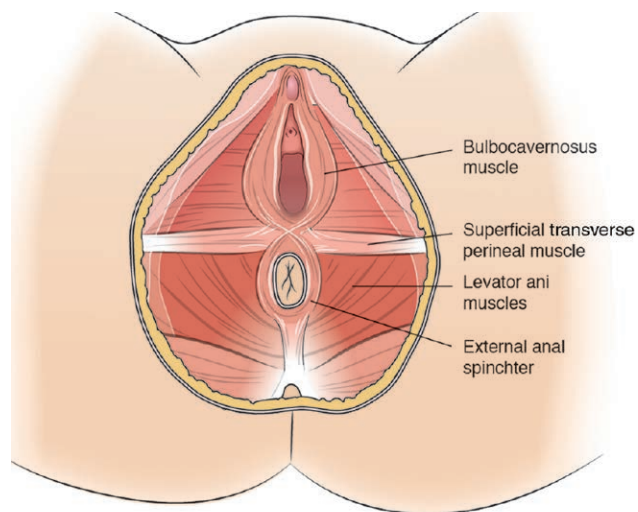


Fig. 5. Vaginal laxity results from the trauma and stretching associated with pregnancy and vaginal delivery. The stretching can attenuate the tissues and separate the levator ani, bulbocavernosus, and superficial transverse perineal muscles, similar to diastasis of the rectus abdominis. Reproduced with permission from *Plast Reconstr Surg.* 2020;146(4):451e–463e. doi: 10.1097/PRS.00000000000007349.²

themselves sufficiently.^{83–86} The American Society of Plastic Surgeons and American Association of Plastic Surgeons advocate the Caprini scoring system for risk assessment, which should be filled out before surgery and guide intraoperative and postoperative prophylaxis.^{87,88}

Prevention of Nerve Injury

The dorsolateral position, with the lower extremities in stirrups, can result in pressure or stretching of the femoral and lateral femoral cutaneous nerves. Hip flexion more than 90 degrees and knee extension can create tension along the sciatic nerve and compress the peroneal nerve against the head of the of the fibula.^{89,90} Patients who are thin, diabetic, and/or alcoholic; and those who smoke; have peripheral vascular disease, or have subclinical neuropathies are at a higher risk for neuropraxia. Compressive and stretch mechanisms should be eliminated, and patients' legs should be removed from stirrups after 90 minutes.^{89,91} "Candy cane" leg holders can place direct pressure on the nerves, whereas Allen YelloFin Elite Lift Assist stirrups have a boot fin design that limits points of contact and uncontrolled abduction. Fortunately, preventative measures lower injury rates to under 0.5%, and sensory nerve injuries typically resolve within 6 months.^{89,92} Motor nerve injuries are possible, but rare.⁹³

Prevention of Compartment Syndrome

The dorsolateral position creates hemodynamic changes that can result in compartment syndrome of the leg. Cases are rare, but the consequences are severe, including compromised limb function and muscle damage, leading to rhabdomyolysis, myoglobinemia, and acute tubular necrosis.⁹⁴ Signs and symptoms include pain on passive stretch, confirmed by compartment pressures more than 30mm Hg or within 20mm Hg of diastolic

blood pressure.^{94,95} For complete recovery, release of the affected fascial compartment must be performed within 6 hours of onset.⁹¹ Normalizing leg position every 90 minutes, avoiding hypotension, and limiting operative times drops the risk of compartment syndrome to under 0.3%.⁹⁶

THE PROCEDURES

Labiaplasty (Labia Minoraplasty)

Several labiaplasty techniques have been described, but this article focuses on the most commonly performed: the trim and wedge labiaplasties. The patient's unique anatomy and personal goals should guide the choice of technique. The wedge is a good option for patient wanting to retain her natural labial edges, but if she dislikes her thick, rough, hyper-pigmented edge, she may prefer a trim technique.⁹⁷ Mastering more than one technique enables the surgeon to optimally address a variety of patients.^{97,98}

Trim

The trim technique is also known as a linear, curvilinear, edge, direct excision, or amputation labiaplasty. The novice labiaplasty surgeon may discover too late how easy it is to over-resect the labia minora.^{7,97,99} A running suture closure can permanently scallop the edge. If the suture is pulled too tight, the tension can strangulate the blood supply, scarring and shortening the surviving labium. Alter has described the use of clitoral hood flaps, wedge excisions, and YV flaps to reconstruct amputated labia minora.¹⁰⁰ In the absence of local tissue, reconstruction is difficult.

Thick labia can heal wide and flat without a tapered edge. If the posterior excisions are separated by less than a centimeter or are in continuity, the scar can contract across the fourchette, interfering with intercourse. An excision that extends too far cephalad can divide the frenulum, untethering the clitoris, allowing it to rotate anteriorly and subjecting the patient to chafing, irritation, and pain. Sensation has been shown to remain intact after a trim.¹⁰¹ (See Video 1 [online], which demonstrates a trim labiaplasty and clitoral hood reduction. Part 1. The surgical technique is shown, and the steps are narrated with subtitles. Reproduced with permission from *Plast Reconstr Surg.* 2020;146(4):451e–463e. 10.1097/PRS.0000000000007349.) (See Video 2 [online], which demonstrates a trim labiaplasty and clitoral hood reduction. Part 2. The surgical technique is shown, and the steps are narrated with subtitles. Reproduced with permission from *Plast Reconstr Surg.* 2020;146(4):451e–463e. 10.1097/PRS.0000000000007349.)

Wedge

Dehiscence after a wedge labiaplasty can result from resecting an over-sized segment and closing under tension. Over-resection can pull the clitoral hood too far inferiorly and advance the fourchette, narrowing the introitus, resulting in discomfort during intercourse. Notching and color mismatch can occur along the incision line. Dehiscence can also occur with poor blood supply or if

only the mucosal surfaces are sutured in the closure. (See Video 3 [online], which demonstrates a wedge labiaplasty. The surgical technique is shown, and the steps are narrated with subtitles. Reproduced with permission from *Plast Reconstr Surg.* 2020;146(4):451e–463e. 10.1097/PRS.0000000000007349.)

Poor labiaplasty results can result in amputation of the labia, dehiscence, scarring, pain, dyspareunia, reduced erotic sensation, deformity, and loss of self-esteem.^{15,33,102} Dryness, painful scars, scar contracture, and deformity can result from over-resection and amputation of the labia.^{99,100} These complications are minimized with appropriate patient selection, choice of procedure, and good operative technique.

Clitoral Hood Reduction

Failure to address a heavy clitoral hood at the time of a labiaplasty can result in patient complaints of a masculine, “penis-like” appearance.¹⁰⁰

Majoraplasty (Labia Majora Reduction), Majora Liposuction, and Majora Augmentation

Labia majoraplasty consists of reduction and reshaping of the labia majora to address redundant, ptotic, full labia majora.^{29,103,106} Professional cyclists may have functional concerns associated with vulvar lymphadenopathy.^{45, 46} Redundant skin is excised medially, and adipose tissue can be excised directly in patients who desire reduced fullness and projection. The majora flap should not be pre-cut, to avoid over-excision, but instead should be elevated from medial to lateral, and the redundancy confirmed before establishing the final incision line. Up to 50% of the majora skin is typically excised. A scar placed within the interlabial sulcus is less noticeable than one placed along the medial hairline.

Over-excision of the labia majora can result in a widened introitus that predisposes the patient to dryness and irritation.¹⁰³ Other potential complications include scarring, pain, impaired erotic sensation, increased vaginal secretions, dyspareunia, and diminished self-esteem.¹⁰³ Vulvar lymphadenopathy may limit the long-term results in intensive cyclists.^{45,46}

Minimal fullness without ptosis may be addressed with liposuction, which should be performed with a cannula under 3mm in diameter to reduce the risk of bleeding and contour irregularities.¹⁰³

Labia Majora Augmentation

Fat grafting is the most common technique to volumize flat or atrophic labia majora.^{69,100,105} A volume of 10–25 ml injected with a 1-ml syringe is recommended, although injections of up to 120 ml have been reported.^{105,106} It is far better to undertreat than to overtreat. The possibility of future weight gain should be considered, particularly in the younger patient.

Hyaluronic acid has been injected both subcutaneously and deep to the dartos fascia as a volume filler, with reports of injected volumes ranging from 2 to 6 ml.¹⁰⁵ Adverse sequelae include swelling, bruising, and palpable

nodules, which can be treated with light massage, intral-
 esional corticosteroid, or hyaluronidase injection.^{46,107,108}

Monsplasty and Mons Liposuction

The fatty mons with no ptosis can be treated by lipo-
 suction, but redundant skin and adipose tissue are
 best addressed with direct excision through a mons-
 plasty.^{103,109,110} Monsplasty candidates are often obese, add-
 ing to perioperative concerns,¹¹¹ but the surgery has been
 shown to improve urinary dysfunction and hygiene in mas-
 sive weight loss patients.^{112,113} After the redundant tissue
 has been excised, Scarpa’s fascia should be anchored to
 the rectus abdominis muscle fascia to avoid descent.^{109,110}
 Potential complications include bleeding, hematoma, and
 scarring.

Perineoplasty and Vaginoplasty

Vaginal tightening procedures, referred to variably
 as vaginoplasty, perineoplasty, colporrhaphy, and peri-
 neorrhaphy, have historically been performed for repairs
 after obstetrical delivery; only recently have they been
 performed to address sexual and aesthetic concerns.^{18,114}
 Up to 76% of women experience decreased sensation,
 decreased friction during intercourse, and altered sensa-
 tion associated with a generalized feeling of vaginal lax-
 ity.^{14,50,115–119} Gaping of the vaginal vestibule with visibility
 of the vaginal mucosa, excessive vaginal secretions due to
 mucosa exposure, altered ability to achieve orgasm, and
 vaginal air entrapment resulting in embarrassing sounds
 during sexual intercourse are other sequelae women may
 experience from vaginal laxity.^{50,120,121}

Because sexual satisfaction is impacted by multi-
 ple factors, patients hoping for improvement may not
 achieve what they wish, and patients should be screened
 and counseled so their expectations are realistic.^{17,50} A

history of vulvodynia, dyspareunia, or chronic pelvic
 pain are relative contraindications to vaginal tightening
 surgery.^{48,50} Postmenopausal patients considering vagino-
 plasty should be on estrogen to thicken their vaginal tis-
 sues before surgery.^{63–65}

Indications for a perineoplasty include aesthetic con-
 cerns, laxity of the introitus, and decreased sexual satis-
 faction after vaginal delivery.^{43,117} Redundant, atrophic
 perineal mucosa is excised up to the hymen ring, and the
 bulbocavernosus and the medial transverse superficial
 perineal muscles are reapproximated to reestablish the
 pre-delivery anatomy of the perineal body and introitus.
 After perineoplasty, nearly 90% of patients experience
 improved rates of sexual intercourse satisfaction.¹²² A peri-
 neoplasty without muscle plication can be performed for
 aesthetic reasons in the nulliparous patient.

A vaginoplasty can be done by tightening the ante-
 rior vaginal wall by plicating the vesicovaginal fascia.
 Some surgeons favor tightening the lateral wall to avoid
 a posterior scar where the pressure and sensitivity are the
 greatest.^{115,123–125} More commonly, the posterior vaginal
 wall is tightened by plicating the rectovaginal fascia and
 approximating the levators up to 7–10 mm proximal to
 the hymen ring. Even without muscle plication, a wedge
 excision of the vaginal epithelium and rectovaginal fas-
 cia shows favorable results in narrowing the vagina.^{74,115,126}
 (See Video 4 [online], which demonstrates vaginoplasty.
 The surgical technique is shown, and the steps are nar-
 rated with subtitles. Reproduced with permission from
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Risks include bleeding, hematoma, injury to bowel
 or bladder, and rectovaginal fistula scarring, vaginal ste-
 nosis, dyspareunia, and altered sensation.^{14,43,50,53} Since
 no objective, reproducible method of measuring vaginal

Table 1. Postoperative Instructions after Female Genital Plastic Surgery (Specific Procedures Are the Details Contained within Female Genital Plastic Surgery)

General Instructions after Female Genital Plastic Surgery	
Voiding	Patients should be straight catheterized at the end of multiple procedures, perineoplasties, or vaginoplasties performed under general anesthesia. At home, patients should void in the shower or with the use of a bidet or squirt bottle and avoid wiping for the first week.
Bathing	Patients can shower right away. During the first week, sitting in a hot bath for a long time should be avoided to minimize venous pressure and vasodilation in the operated area and avoid the chance of bleeding.
Dressings	Antibiotic ointment and peri-pad can be used during the first week for oozing and padding. Some surgeons prescribe topical Estrace to place on the incisions, especially within the vaginal canal after perineal and vaginoplasty.
Pain relief	These procedures are associated with mild to moderate pain. The surgeon’s nonopioid pain regimen may be sufficient, but a backup opioid may be prescribed.
Icing	Patients should place a cold pack between their underpants and stretchy outer pants, 20 minutes on, 20 minutes off. The cold pack should not contact the skin directly.
Elevation	Minimize sitting, which puts pressure on the operated area. Unless contradicted by other procedures, patients should get on their elbows and knees and raise their bottom in the air for 10 minutes, 5 times a day for the first week.
Exercise	To reduce the risk of bleeding, patients should take it easy for 2 weeks. Low-impact exercise may be resumed, if comfortable, at 4 weeks, and high-impact exercise begun to 6 weeks. No saddles (bicycle, horseback, motor-cycle) for 8 weeks or longer, depending on comfort and duration.
Instructions after Specific Procedures	
Labiaplasty, clitoral hood reduction	No tampons or intercourse for 4 weeks (trim) and up to 6 weeks (wedge), depending on healing.
Monsplasty, majoraplasty	Patients should delay demanding, high-impact aerobic exercise for 6 weeks, and avoid straddling a saddle for at least 8 weeks.
Perineoplasty, vaginoplasty	Tampons and intercourse are avoided for 6–8 weeks. If the vaginal diameter is smaller than desired, the patient can be instructed to use dilators.

laxity has yet been developed, the measure of surgical outcome is limited to physical examination and patient questionnaire.¹¹⁶

Clinical Case Studies

A series of clinical case studies of female genital plastic surgery appear in Video 5 (See Video 5 [online], which demonstrates clinical cases of female genital plastic surgery. This narrated video shows different surgical cases with anatomical variations. The cases shown through preoperative and postoperative photographs include trim and wedge labiaplasties, clitoral hood reduction, majoraplasty, and perineoplasty. Reproduced with permission from *Plast Reconstr Surg*. 2020;146(4):451e–463e. 10.1097/PRS.00000000000007349). Postoperative instructions for all patients are listed in Table 1.

OUTCOMES

Overall satisfaction rates after labiaplasty are high, mostly more than 90%.^{3–35,40} Labiaplasty is associated with a significant improvement in self-esteem and a significant drop in the labia's negative impact on intimacy, twisting, physical discomfort, clothing restriction, pain, exposure in a bathing suit, and visible outline in tight pants.^{3,7} In a prospective study of 62 patients, all patients had symptomatology before labiaplasty; after surgery, 93.5% were symptom-free.⁷ Patient outcomes studies after vaginal tightening show an associated improvement in sexual function, sexual satisfaction, desire, and orgasm. Complication rates include 2% inadvertent rectal entry and a low rate of minor complications without long-term sequelae.^{18,114,118,127,128}

THE CONTROVERSY

In 2019, the American College of Obstetricians and Gynecologists reaffirmed their 2007 Committee Opinion 378, calling these procedures “untenable” due to the absence of established safety and efficacy.¹²⁹ In January 2020, Committee Opinion 795 replaced 378 with softer language that still maintains that vulvovaginal surgery for appearance and sexual function reasons is not medically indicated and poses substantial risk, and women interested in surgery should instead be reassured of the normalcy of their anatomy. The opinion further states that studies demonstrating patient satisfaction with these procedures “should not serve as evidence that these procedures are clinically effective.”^{130,131} This recommendation ignores the negative impact of *not* performing a cosmetic procedure that can improve quality of life.

Unlike gynecologists, plastic surgeons perform cosmetic procedures on normal anatomic structures and regard a patient's satisfaction to be an important measure of success.¹³² Committee position statements published by the American College of Obstetricians and Gynecologists have indicated that physicians who perform cosmetic gynecological procedures are pathologizing the normal vulva and vagina, contributing to women's sexual dysfunction and distress.¹³³ The stance that women seeking these procedures are victims of a patriarchal ideal is unique among

cosmetic procedures.¹³⁴ The surgeon performing *any* cosmetic procedure must ensure that the patient is internally motivated to have surgery. Physicians listening to patient requests for female genital cosmetic surgery may themselves be unaware of their own cultural biases.^{19,47,135–141}

Teaching these procedures in training programs will help reduce the complications that the American College of Obstetricians and Gynecologists' opinion warns of, and developing more validated questionnaires specifically for female genital cosmetic surgery will expand our understanding of the impact these procedures have on women's lives. When practiced safely, female genital plastic surgery can improve the quality of life for women seeking relief.

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REFERENCES

1. The Aesthetic Society. The Aesthetic Plastic Surgery National Databank Statistics 2019. Available at <https://www.surgery.org/media/statistics>. Accessed December 26, 2020.
2. Furnas HJ, Graw GJ, Cho MJ, et al. Safety in female genital plastic surgery. *Plast Reconstr Surg*. 2020;146:451e–463e.
3. Sharp G, Maynard P, Hudaib AR, et al. Do genital cosmetic procedures improve women's self-esteem? A systematic review and meta-analysis. *Aesthet Surg J*. 2020;40:1143–1151.
4. A new kind of nip and tuck: Designer vaginas are all the rage in Lebanon. 2018. *The Economist*. November 17, 2018. Available at <https://www.economist.com/middle-east-and-africa/2018/11/17/designer-vaginas-are-all-the-rage-in-lebanon>. Accessed December 26, 2020.
5. Crouch NS, Deans R, Michala L, et al. Clinical characteristics of well women seeking labial reduction surgery: a prospective study. *BJOG*. 2011;118:1507–1510.
6. Australian Government Department of Human Services. Medicare benefits schedule item statistics report: Item 35533 [Data file]. Available at [http://www.msac.gov.au/internet/mbsonline/publishing.nsf/Content/45885881B317243DCA257F1B001C1AF3/\\$File/201601-MBS.pdf](http://www.msac.gov.au/internet/mbsonline/publishing.nsf/Content/45885881B317243DCA257F1B001C1AF3/$File/201601-MBS.pdf). Accessed September 26, 2020.
7. Sorice-Virk S, Li AY, Canales FL, et al. Comparison of patient symptomatology before and after labiaplasty. *Plast Reconstr Surg*. 2020;146:526–536.
8. Goodman MP. Commentary on: The role of pornography, physical symptoms, and appearance in labiaplasty interest. *Aesthet Surg J*. 2020;40:884–886.
9. Turini T, Weck Roxo AC, Serra-Guimarães F, et al. The impact of labiaplasty on sexuality. *Plast Reconstr Surg*. 2018;141:87–92.
10. Sharp G, Tiggemann M, Mattiske J. Psychological outcomes of labiaplasty: a prospective study. *Plast Reconstr Surg*. 2016;138:1202–1209.
11. Goodman MP, Faschler S, Miklos JR, et al. The sexual, psychological, and body image health of women undergoing elective vulvovaginal plastic/cosmetic procedures: a pilot study. *Am J Cosmetic Surg*. 2011;28:219–226.
12. Veale D, Naismith I, Eshkevari E, et al. Psychosexual outcome after labiaplasty: a prospective case-comparison study. *Int Urogynecol J*. 2014;25:831–839.
13. Miklos JR, Moore RD, Chinthakandan O. Overall patient satisfaction scores, including sexual function, following labiaplasty surgery: a prospective study comparing women with a history of prior cosmetic surgery to those with none. *Plast Reconstr Surg*. 2014;134:124–125.

14. Goodman MP, Placik OJ, Benson RH III, et al. A large multicenter outcome study of female genital plastic surgery. *J Sex Med.* 2010;7(4 Pt 1):1565–1577.
15. Sorice SC, Li AY, Canales FL, et al. Why women request labiaplasty. *Plast Reconstr Surg.* 2017;139:856–863.
16. Alter GJ. Aesthetic labia minora and clitoral hood reduction using extended central wedge resection. *Plast Reconstr Surg.* 2008;122:1780–1789.
17. Goodman MP, Placik OJ, Matlock DL, et al. Evaluation of body image and sexual satisfaction in women undergoing female genital plastic/cosmetic surgery. *Aesthet Surg J.* 2016;36:1048–1057.
18. Goodman MP. Female genital cosmetic and plastic surgery: a review. *J Sex Med.* 2011;8:1813–1825.
19. Lista F, Mistry BD, Singh Y, et al. The safety of aesthetic labiaplasty: a plastic surgery experience. *Aesthet Surg J.* 2015;35:689–695.
20. Sharp G, Tiggemann M, Mattiske J. Factors that influence the decision to undergo labiaplasty: media, relationships, and psychological well-being. *Aesthet Surg J.* 2016;36:469–478.
21. Veale D, Eshkevari E, Ellison N, et al. A comparison of risk factors for women seeking labiaplasty compared to those not seeking labiaplasty. *Body Image.* 2014;11:57–62.
22. Sharp G, Tiggemann M, Mattiske J. A retrospective study of the psychological outcomes of labiaplasty. *Aesthet Surg J.* 2017;37:324–331.
23. Sharp G, Mattiske J, Vale KI. Motivations, expectations, and experiences of labiaplasty: a qualitative study. *Aesthet Surg J.* 2016;36:920–928.
24. Koning M, Zeijlmans IA, Bouman TK, et al. Female attitudes regarding labia minora appearance and reduction with consideration of media influence. *Aesthet Surg J.* 2009;29:65–71.
25. Sharp G, Tiggemann M, Mattiske J. Predictors of consideration of labiaplasty: An extension of the tripartite influence model of beauty ideals. *Psychol Women Quart.* 2015;39:182–183.
26. Bramwell R, Morland C, Garden AS. Expectations and experience of labial reduction: a qualitative study. *BJOG.* 2007;114:1493–1499.
27. Hamori CA. Aesthetic surgery of the female genitalia: labiaplasty and beyond. *Plast Reconstr Surg.* 2014;134:661–673.
28. Solanki NS, Tejero-Trujequé R, Stevens-King A, et al. Aesthetic and functional reduction of the labia minora using the Maas and Hage technique. *J Plast Reconstr Aesthet Surg.* 2010;63:1181–1185.
29. Placik OJ, Devgan LL. Female genital and vaginal plastic surgery: an overview. *Plast Reconstr Surg.* 2019;144:284e–297e.
30. Dogan O, Yassa M. Major motivators and sociodemographic features of women undergoing labiaplasty. *Aesthet Surg J.* 2019;39:NP517–NP527.
31. Earp BD, Steinfeld R. Genital autonomy and sexual wellbeing. *Curr Sex Health Rep.* 2018;10:7–17.
32. Wu JA, Braschi EJ, Gulminelli PL, et al. Labiaplasty for hypertrophic labia minora contributing to recurrent urinary tract infections. *Female Pelvic Med Reconstr Surg.* 2013;19:121–123.
33. Bucknor A, Chen AD, Egeler S, et al. Labiaplasty: indications and predictors of postoperative sequelae in 451 consecutive cases. *Aesthet Surg J.* 2018;38:644–653.
34. Rouzier R, Louis-Sylvestre C, Paniel BJ, et al. Hypertrophy of labia minora: experience with 163 reductions. *Am J Obstet Gynecol.* 2000;182(1 Pt 1):35–40.
35. Gress S. Composite reduction labiaplasty. *Aesthetic Plast Surg.* 2013;37:674–683.
36. Oranges CM, Sisti A, Sisti G. Labia minora reduction techniques: a comprehensive literature review. *Aesthet Surg J.* 2015;35:419–431.
37. Bramwell R, Morland C. Genital appearance satisfaction in women: The development of a questionnaire and exploration of correlates. *J Reprod Infant Psychol.* 2009;27:15–27.
38. Veale D, Eshkevari E, Ellison N, et al. Psychological characteristics and motivation of women seeking labiaplasty. *Psychol Med.* 2014;44:555–566.
39. Hodgkinson DJ, Hait G. Aesthetic vaginal labiaplasty. *Plast Reconstr Surg.* 1984;74:414–416.
40. Giraldo F, González C, de Haro F. Central wedge nymphectomy with a 90-degree Z-plasty for aesthetic reduction of the labia minora. *Plast Reconstr Surg.* 2004;113:1820–5; discussion 1826.
41. Turin SY, Kearney A, Placik OJ. Anterior and posterior commissuroplasty: taking labiaplasty to the next level. *Aesthet Surg J.* 2020;40:1111–1121.
42. Pelosi MA III, Pelosi MA II. Perineoplasty and vaginoplasty. In: Hamori CA, Banwell PE, Alinsod R. eds. *Female Cosmetic Genital Surgery. Concepts, Classification, and Techniques.* New York: Thieme; 2017:162–180.
43. Furnas HJ, Canales FL. Vaginoplasty and perineoplasty. *Plast Reconstr Surg Glob Open.* 2017;5:e1558.
44. Canales FL, Furnas HJ. Nonsurgical vaginal treatments. In: Branham GH, Dover SJ, Furnas HJ, et al, eds. *Advances in Cosmetic Surgery.* Vol. 2. Philadelphia: Elsevier; 2019:195–201.
45. Humphries D. Unilateral vulval hypertrophy in competitive female cyclists. *Br J Sports Med.* 2002;36:463–464.
46. Baeyens L, Vermeersch E, Bourgeois P. Bicyclist's vulva: observational study. *BMJ.* 2002;325:138–139.
47. Sorice-Virk S, Li AY, Canales FL, et al. The role of pornography, physical symptoms, and appearance in labiaplasty interest. *Aesthet Surg J.* 2020;40:876–883.
48. Veale D, Eshkevari E, Ellison N, et al. Validation of genital appearance satisfaction scale and the cosmetic procedure screening scale for women seeking labiaplasty. *J Psychosom Obstet Gynaecol.* 2013;34:46–52.
49. Vojvodic M, Lista F, Vastis PG, et al. Luminal reduction hymenoplasty: a Canadian experience with hymen restoration. *Aesthet Surg J.* 2018;38:802–806.
50. Austin RE, Lista F, Vastis PG, et al. Posterior vaginoplasty with perineoplasty: a Canadian experience with vaginal tightening surgery. *Aesthet Surg J Open Forum.* 2019;1:ojz030.
51. Iglesia CB, Yurteri-Kaplan L, Alinsod R. Female genital cosmetic surgery: a review of techniques and outcomes. *Int Urogynecol J.* 2013;24:1997–2009.
52. Wilkie G, Bartz D. Vaginal rejuvenation: a review of female genital cosmetic surgery. *Obstet Gynecol Surv.* 2018;73:287–292.
53. Wasserberg N, Haney M, Petrone P, et al. Morbid obesity adversely impacts pelvic floor function in females seeking attention for weight loss surgery. *Dis Colon Rectum.* 2007;50:2096–2103.
54. Brown JS, Grady D, Ouslander JG, et al. Prevalence of urinary incontinence and associated risk factors in postmenopausal women. Heart & Estrogen/Progestin Replacement Study (HERS) Research Group. *Obstet Gynecol.* 1999;94:66–70.
55. Rortveit G, Brown JS, Thom DH, et al. Symptomatic pelvic organ prolapse: prevalence and risk factors in a population-based, racially diverse cohort. *Obstet Gynecol.* 2007;109:1396–1403.
56. DeLancey JO, Morgan DM, Fenner DE, et al. Comparison of levator ani muscle defects and function in women with and without pelvic organ prolapse. *Obstet Gynecol.* 2007;109(2 Pt 1):295–302.
57. Dietz HP, Simpson JM. Levator trauma is associated with pelvic organ prolapse. *BJOG.* 2008;115:979–984.
58. Quiroz LH, Muñoz A, Shippey SH, et al. Vaginal parity and pelvic organ prolapse. *J Reprod Med.* 2010;55:93–98.
59. Handa VL, Blomquist JL, Knoepp LR, et al. Pelvic floor disorders 5–10 years after vaginal or cesarean childbirth. *Obstet Gynecol.* 2011;118:777–784.
60. Fitzpatrick M, O'Brien C, O'Connell PR, et al. Patterns of abnormal pudendal nerve function that are associated with postpartum fecal incontinence. *Am J Obstet Gynecol.* 2003;189:730–735.

61. Goldberg RP, Abramov Y, Botros S, et al. Delivery mode is a major environmental determinant of stress urinary incontinence: results of the Evanston-Northwestern Twin Sisters Study. *Am J Obstet Gynecol.* 2005;193:2149–2153.
62. Faubion SS, Sood R, Kapoor E. Genitourinary syndrome of menopause: management strategies for the clinician. *Mayo Clin Proc.* 2017;92:1842–1849.
63. Gandhi J, Chen A, Dagur G, et al. Genitourinary syndrome of menopause: an overview of clinical manifestations, pathophysiology, etiology, evaluation, and management. *Am J Obstet Gynecol.* 2016;215:704–711.
64. Rahn DD, Carberry C, Sanses TV, et al; Society of Gynecologic Surgeons Systematic Review Group. Vaginal estrogen for genitourinary syndrome of menopause: a systematic review. *Obstet Gynecol.* 2014;124:1147–1156.
65. Naumova I, Castelo-Branco C. Current treatment options for postmenopausal vaginal atrophy. *Int J Womens Health.* 2018;10:387–395.
66. Banwell PE. Anatomy and classification of the female genitalia: Implications for surgical management. In: Hamori CA, Banwell PE, Alinsod R, eds. *Female Cosmetic Genital Surgery. Concepts, Classification, and Techniques.* New York: Thieme; 2017:4–22.
67. Lloyd J, Crouch NS, Minto CL, et al. Female genital appearance: “normality” unfolds. *BJOG.* 2005;112:643–646.
68. Motakef S, Rodriguez-Feliz J, Chung MT, et al. Vaginal labiaplasty: current practices and a simplified classification system for labial protrusion. *Plast Reconstr Surg.* 2015;135:774–788.
69. Franco T, Franco D. Hipertrofia de ninfas/Nymphas hypertrophy. *J Bras Ginecol.* 1993;103:163e–168e.
70. Felicio YA. Labial surgery. *Aesthet Surg J.* 2007;27:322–328.
71. Chang P, Salisbury MA, Narsete T, et al. Vaginal labiaplasty: defense of the simple “clip and snip” and a new classification system. *Aesthetic Plast Surg.* 2013;37:887–891.
72. Georgiou CA, Benatar M, Dumas P, et al. A cadaveric study of the arterial blood supply of the labia minora. *Plast Reconstr Surg.* 2015;136:167–178.
73. Ellerkmann RM, Cundiff GW, Melick CF, et al. Correlation of symptoms with location and severity of pelvic organ prolapse. *Am J Obstet Gynecol.* 2001;185:1332–1337; discussion 1337.
74. Cundiff GW, Fenner D. Evaluation and treatment of women with rectocele: focus on associated defecatory and sexual dysfunction. *Obstet Gynecol.* 2004;104:1403–1421.
75. Segal JL, Karram MM. Evaluation and management of rectoceles. *Curr Opin Urol.* 2002;12:345–352.
76. Rogers RG, Coates KW, Kammerer-Doak D, et al. A short form of the pelvic organ prolapse/urinary incontinence sexual questionnaire (PISQ-12). *Int Urogynecol J Pelvic Floor Dysfunct.* 2003;14:164–168.
77. Kelishadi SS, Omar R, Herring N, et al. The safe labiaplasty: a study of nerve density in labia minora and its implications. *Aesthet Surg J.* 2016;36:705–709.
78. Kelling JA, Erickson CR, Pin J, et al. Anatomical dissection of the dorsal nerve of the clitoris. *Aesthet Surg J.* 2020;40:541–547.
79. Ginger VA, Cold CJ, Yang CC. Structure and innervation of the labia minora: more than minor skin folds. *Female Pelvic Med Reconstr Surg.* 2011;17:180–183.
80. Sacher BC. The normal vulva, vulvar examination and evaluation tools. *Clin Obstet Gynecol.* 2015;58:442–452.
81. Jackson LA, Hare AM, Carrick KS, et al. Anatomy, histology, and nerve density of clitoris and associated structures: clinical applications to vulvar surgery. *Am J Obstet Gynecol.* 2019;221:519.e1–519.e9.
82. Gelder C, McCallum AL, Macfarlane AJR, et al. A systematic review of mechanical thromboprophylaxis in the lithotomy position. *Surgeon.* 2018;16:365–371.
83. Gould MK, Garcia DA, Wren SM, et al. Prevention of VTE in nonorthopedic surgical patients: Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. *Chest.* 2012;141(2 Suppl):e227S–e277S.
84. Pannucci CJ. Venous thromboembolism in aesthetic surgery: risk optimization in the preoperative, intraoperative, and postoperative settings. *Aesthet Surg J.* 2019;39:209–219.
85. Pannucci CJ, Henke PK, Cederna PS, et al. The effect of increased hip flexion using stirrups on lower-extremity venous flow: a prospective observational study. *Am J Surg.* 2011;202:427–432.
86. Kohro S, Yamakage M, Takahashi T, et al. Intermittent pneumatic compression prevents venous stasis in the lower extremities in the lithotomy position. *Can J Anaesth.* 2002;49:144–147.
87. Pannucci CJ, MacDonald JK, Ariyan S, et al. Benefits and risks of prophylaxis for deep venous thrombosis and pulmonary embolus in plastic surgery: a systematic review and meta-analysis of controlled trials and consensus conference. *Plast Reconstr Surg.* 2016;137:709–730.
88. Yago H, Yamaki T, Sasaki Y, et al. Application of the caprini risk assessment model for evaluating postoperative deep vein thrombosis in patients undergoing plastic and reconstructive surgery. *Ann Vasc Surg.* 2020;65:82–89.
89. Sze EHM. An alternate approach to using candy cane stirrups in vaginal surgery. *Obstet Gynecol.* 2019;133:666–668.
90. Fleisch MC, Bremerich D, Schulte-Mattler W, et al. The prevention of positioning injuries during gynecologic operations. Guideline of DGGG (S1-Level, AWMF Registry No.015/077, February 2015). *Geburtshilfe Frauenheilkd.* 2015;75:792–807.
91. Sajid MS, Shakir AJ, Khatri K, et al. Lithotomy-related neurovascular complications in the lower limbs after colorectal surgery. *Colorectal Dis.* 2011;13:1203–1213.
92. Gupta A, Meriwether K, Tuller M, et al. Candy cane compared with boot stirrups in vaginal surgery: a randomized controlled trial. *Obstet Gynecol.* 2020;136:333–341.
93. Irvin W, Andersen W, Taylor P, et al. Minimizing the risk of neurologic injury in gynecologic surgery. *Obstet Gynecol.* 2004;103:374–382.
94. Bauer EC, Koch N, Janni W, et al. Compartment syndrome after gynecologic operations: evidence from case reports and reviews. *Eur J Obstet Gynecol Reprod Biol.* 2014;173:7–12.
95. Meyer RS, White KK, Smith JM, et al. Intramuscular and blood pressures in legs positioned in the hemilithotomy position. *J Bone Joint Surg.* 2002;84-A:1829–1835.
96. Halliwill JR, Hewitt SA, Joyner MJ, et al. Effect of various lithotomy positions on lower-extremity blood pressure. *Anesthesiology.* 1998;89:1373–1376.
97. Furnas HJ. Trim labiaplasty. *Plast Reconstr Surg Glob Open.* 2017;5:e1349.
98. Hunter JG. Labia minora, labia majora, and clitoral hood alteration: experience-based recommendations. *Aesthet Surg J.* 2016;36:71–79.
99. Hamori CA. Postoperative clitoral hood deformity after labiaplasty. *Aesthet Surg J.* 2013;33:1030–1036.
100. Alter GJ. Labia minora reconstruction using clitoral hood flaps, wedge excisions, and YV advancement flaps. *Plast Reconstr Surg.* 2011;127:2356–2363.
101. Placik OJ, Arkins JP. A prospective evaluation of female external genitalia sensitivity to pressure following labia minora reduction and clitoral hood reduction. *Plast Reconstr Surg.* 2015;136:442e–452e.
102. Alter GJ. Commentary on: the safe labiaplasty: a study of nerve density in labia minora and its implications. *Aesthet Surg J.* 2016;36:710–711.

103. Triana L, Robledo AM. Aesthetic surgery of female external genitalia. *Aesthet Surg J*. 2015;35:165–177.
104. Desai SA, Dixit VV. Audit of female genital aesthetic surgery: changing trends in India. *J Obstet Gynaecol India*. 2018;68:214–220.
105. Jabbour S, Kechichian E, Hersant B, et al. Labia majora augmentation: a systematic review of the literature. *Aesthet Surg J*. 2017;37:1157–1164.
106. Kalaaji A, Dreyer S, Maric I, et al. Female cosmetic genital surgery: patient characteristics, motivation, and satisfaction. *Aesthet Surg J*. 2019;39:1455–1466.
107. Fasola E, Gazzola R. Labia majora augmentation with hyaluronic acid filler: technique and results. *Aesthet Surg J*. 2016;36:1155–1163.
108. Hexsel D, Dal’Forno T, Caspary P, et al. Soft-tissue augmentation with hyaluronic acid filler for labia majora and mons pubis. *Dermatol Surg*. 2016;42:911–914.
109. Seitz IA, Wu C, Retzlaff K, et al. Measurements and aesthetics of the mons pubis in normal weight females. *Plast Reconstr Surg*. 2010;126:46e–48e.
110. Michaels J V, Friedman T, Coon D, et al. Mons rejuvenation in the massive weight loss patient using superficial fascial system suspension. *Plast Reconstr Surg*. 2010;126:45e–46e.
111. Doyle SL, Lysaght J, Reynolds JV. Obesity and post-operative complications in patients undergoing non-bariatric surgery. *Obes Rev*. 2010;11:875–886.
112. Marques M, Modolin M, Cintra W, et al. Monsplasty for women after massive weight loss. *Aesthetic Plast Surg*. 2012;36:511–516.
113. Bykowski MR, Rubin JP, Gusenoff JA. The impact of abdominal contouring with monsplasty on sexual function and urogenital distress in women following massive weight loss. *Aesthet Surg J*. 2017;37:63–70.
114. Shahghaibi S, Faizi S, Gharibi F. Effect of colporrhaphy on the sexual dysfunction of women with pelvic organ prolapsed. *Pak J Med Sci*. 2013;29:157–160.
115. Berman JR, Berman LA, Werbin TJ, et al. Female sexual dysfunction: anatomy, physiology, evaluation and treatment options. *Curr Opin Urol*. 1999;9:563–568.
116. Adamo C, Corvi M. Cosmetic mucosal vaginal tightening (lateral colporrhaphy): improving sexual sensitivity in women with a sensation of wide vagina. *Plast Reconstr Surg*. 2009;123:212e–213e.
117. Barbara G, Facchin F, Buggio L, et al. Vaginal rejuvenation: current perspectives. *Int J Womens Health*. 2017;9:513–519.
118. Ulubay M, Keskin U, Fidan U, et al. Safety, efficiency, and outcomes of perineoplasty: treatment of the sensation of a wide vagina. *Biomed Res Int*. 2016;2016:2495105.
119. Dobbelaier JM, Landuyt KV, Monstrey SJ. Aesthetic surgery of the female genitalia. *Semin Plast Surg*. 2011;25:130–141.
120. Kanter G, Jeppson PC, McGuire BL, et al. Perineorrhaphy: commonly performed yet poorly understood. A survey of surgeons. *Int Urogynecol J*. 2015;26:1797–1801.
121. Ostrzenski A. Modified posterior perineoplasty in women. *J Reprod Med*. 2015;60:109–116.
122. Woodward AP, Matthews CA. Outcomes of revision perineoplasty for persistent postpartum dyspareunia. *Female Pelvic Med Reconstr Surg*. 2010;16:135–139.
123. Altman D, Väyrynen T, Engh ME, et al; Nordic Transvaginal Mesh Group. Anterior colporrhaphy versus transvaginal mesh for pelvic-organ prolapse. *N Engl J Med*. 2011;364:1826–1836.
124. Pardo JS, Solà VD, Ricci PA, et al. Colpoperineoplasty in women with a sensation of a wide vagina. *Acta Obstet Gynecol Scand*. 2006;85:1125–1127.
125. Alzate H, Londoño ML. Vaginal erotic sensitivity. *J Sex Marital Ther*. 1984;10:49–56.
126. Jeffcoate TN. Posterior colpoperineorrhaphy. *Am J Obstet Gynecol*. 1959;77:490–502.
127. Dobbelaier JMLCL, Van Landuyt K, Monstrey SJ. Aesthetic surgery of the female genitalia. *Semin Plast Surg*. 2011;25:130–141.
128. Jamali S, Abedi P, Rasekh A, et al. The long term effect of elective colpoperineoplasty on sexual function in the reproductive aged women in Iran. *Int Sch Res Notices*. 2014;2014:912786.
129. American College of Obstetricians and Gynecologists. ACOG committee opinion no. 378: Vaginal “rejuvenation” and cosmetic vaginal procedures. *Obstet Gynecol*. 2007;110:737–738.
130. Liao LM, Michala L, Creighton SM. Labial surgery for well women: a review of the literature. *BJOG*. 2010;117:20–25.
131. Elective Female Genital Cosmetic Surgery Committee Opinion Number 795. 2020. American College of Obstetrics and Gynecologists. Available at <https://www.acog.org/clinical/clinical-guidance/committee-opinion/articles/2020/01/elective-female-genital-cosmetic-surgery>. Accessed December 26, 2020.
132. Pusic AL, Klassen AF, Scott AM, et al. Development of a new patient-reported outcome measure for breast surgery: the BREAST-Q. *Plast Reconstr Surg*. 2009;124:345–353.
133. Shnatz P, Boardman L. ACOG Committee opinion: elective female genital cosmetic surgery. *Obstet Gynecol*. 2020;135:e36–e42.
134. Chaikof M, McDermott CD, Brennand E, et al. Patients Seeking “Vaginoplasty” deserve assessment and treatment by experts in female pelvic medicine and reconstructive surgery. *Aesthet Surg J*. 41:NP148–NP149. . Accessed December 28, 2020.
135. Creighton S. AGAINST: labiaplasty is an unnecessary cosmetic procedure. *BJOG*. 2014;121:768.
136. Rogers RG. Most women who undergo labiaplasty have normal anatomy; we should not perform labiaplasty. *Am J Obstet Gynecol*. 2014;211:218–218.e1.
137. Cain JM, Iglesia CB, Dickens B, et al. Body enhancement through female genital cosmetic surgery creates ethical and rights dilemmas. *Int J Gynaecol Obstet*. 2013;122:169–172.
138. Iglesia CB. AGAINST: the social vulnerability and cultural view of women as sex objects needs to end. *BJOG*. 2014;121:768.
139. Lowenstein L, Salonia A, Shechter A, et al. Physicians’ attitude toward female genital plastic surgery: a multinational survey. *J Sex Med*. 2014;11:33–39.
140. Reitsma W, Mourits MJ, Koning M, et al. No (wo)man is an island—the influence of physicians’ personal predisposition to labia minora appearance on their clinical decision making: a cross-sectional survey. *J Sex Med*. 2011;8:2377–2385.
141. Sharp G, Maynard P, Hamori CA, et al. Measuring quality of life in female genital cosmetic procedure patients: a systematic review of patient-reported outcome measures. *Aesthet Surg J*. 2020;40:311–318.