Genital Rejuvenation: The Next Frontier in Medical and Cosmetic Dermatology

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Abstract
Genital rejuvenation encompasses not only the nonsurgical interventions but also the surgical procedures that are utilized to improve the functional aspects and/or enhance the aesthetic presentation of the genitalia of women (vaginal rejuvenation) and men (scrotal rejuvenation). Vaginal rejuvenation was introduced into the medical literature in 2007; yet, within the last decade, physician and patient interest in this field has markedly increased. In contrast, the term scrotal rejuvenation was only coined in 2018. Rejuvenation of the genitalia may be considered for hair-associated (alopecia and hypertrichosis), morphology-associated (vulvovaginal atrophy, excess clitoral or labial tissue, scrotal wrinkling, and vaginal or scrotal laxity), and vascular-associated (angiokeratomas) changes of the vagina and scrotum. As women and men gain insight into the conditions that are amendable to genital rejuvenation, the demand for vaginal rejuvenation and scrotal rejuvenation will likely increase. Genital rejuvenation may become the next frontier in medical and cosmetic dermatology and dermatologists have the opportunity to provide rejuvenation of the vagina and scrotum for their patients.

Keywords: cosmetic, dermatology, feminine, genital, medical, rejuvenation, revitalization, scrotal, scrotum, vagina, vaginal, vulvovaginal

Introduction
Genital rejuvenation incorporates nonsurgical and surgical interventions that can be performed to improve the functional aspects or enhance the aesthetic presentation or both of the genitalia of women (vaginal rejuvenation) and men (scrotal rejuvenation). Dermatologists readily embrace the opportunity to provide facial rejuvenation for their patients; they use — individually or concurrently — several therapeutic modalities including fillers, neurotoxins, intense light and laser devices, peels, dermabrasion, radiofrequency-based devices, sclerotherapy, and surgery. Hence, dermatologists may choose to provide vaginal rejuvenation for their female patients and scrotal rejuvenation for their male patients.

Discussion
Vaginal rejuvenation is also referred to as aesthetic vaginal surgery, cosmetic vaginal surgery, female genital cosmetic surgery, feminine rejuvenation, vaginal revitalization, and vulvovaginal rejuvenation [1-3]. The term, initially associated with surgical procedures, originally appeared in the literature (according to the PubMed search engine of MEDLINE database citations) in 2007 [1]. The American College of Obstetricians and Gynecologists Committee on Gynecologic Practice was providing an opinion regarding elective vaginal surgical procedures (such as “vaginal rejuvenation,” “designer vaginoplasty,” revirgination,” and “G-spot amplification”), which — at that time — were not considered to be medically indicated, lacked data supporting their efficacy, and were potentially associated with postoperative complications [1].

However, physician and patient interest in vaginal rejuvenation has markedly increased in the last
In addition to the cosmetic concerns, vaginal rejuvenation also addresses medical conditions that necessitate intervention. Although gynecologists, urologists, and plastic surgeons treat many of these women, dermatologists also manage some of these patients.

Scrotal rejuvenation is a more recently introduced concept. Indeed, the term was only coined in 2018 [4]. Similar to vaginal rejuvenation, rejuvenation of the scrotum is indicated for not only cosmetic concerns but also for conditions potentially associated with medical adverse sequellae.

Table 1. Genital rejuvenation: potential interventions for vaginal and scrotal changes

<table>
<thead>
<tr>
<th>Vaginal changes</th>
<th>Scrotal changes</th>
<th>Potential interventions</th>
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<tr>
<td>Hair-associated</td>
<td>Hair-associated</td>
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| Mons pubis-labia major alopecia      | Scrotal alopecia                 | Medical therapy: topical minoxidil, oral finasteride<sup>a</sup>
|                                      |                                  | Surgical therapy: hair transplantation<sup>b</sup>          |
| Pubic hypertrichosis                 | Scrotal hypertrichosis           | Temporary modalities: shaving,<sup>c</sup> epilation,<sup>c</sup> depilatories
|                                      |                                  | Permanent interventions: electrolysis, lasers, IPL devices   |
| Morphology-associated                | Morphology-associated            |                                                             |
| Excess clitoral hood                 | Clitoral hoodectomy              |                                                             |
| Excess labia major or excess labia minora | Labiaplasty, MAFL               |                                                             |
| Vaginal laxity                       | Scrotal laxity<sup>d</sup>       | Nonsurgical therapy: Lipo,<sup>e</sup> MAFL,<sup>f</sup> RFBD,<sup>f</sup> SCROTUM procedure<sup>e,f</sup>
|                                      |                                  | Surgical therapy: colporrhaphy,<sup>f</sup> EST,<sup>f</sup> scrotal lift<sup>e,g</sup> |
|                                      | Scrotal wrinkling<sup>h</sup>    | Botulinum toxin                                             |
| Vulvovaginal atrophy<sup>i</sup>    | Lasers, RFBD                     |                                                             |
| Vascular-associated                  | Vascular-associated              |                                                             |
| Vulvar angiookeratomas               | Scrotal angiookeratomas          | Cryo, Cure, EC, Ex, Lasers                                  |

Abbreviations: Cryo, cryodestruction with liquid nitrogen; Cure, curettage, EC, electrocauterization, EST, Elastic silicon threads; Ex, surgical excision; IPL, intense pulsed light; Lipo, lipofilling; MAFL, minimally ablative fractional laser; nm, nanometer; RFBD, radiofrequency based devices; SCROTUM, Sutures Can Raise by Orienting Threads in an Upward Manner.

<sup>a</sup>Treatment for men only.
<sup>b</sup>Hair transplantation performed using either micrografts or follicular units; platelet-rich plasma may be considered as an adjuvant component.
<sup>c</sup>Treatment for women only.
<sup>d</sup>This condition is also referred to as low-hanging scrotum, sagging scrotum, or scrotomegaly.
<sup>e</sup>Lipofilling can be performed as monotherapy or with hyaluronic acid or platelet-rich plasma or both.
<sup>f</sup>The SCROTUM (Sutures Can Raise by Orienting Threads in an Upward Manner) procedure uses absorbable poly-L-lactic acid (PLLA)/poly-lactic-co-glycolide (PLGA) bidirectional, cone-based, self-anchoring suspension sutures.
<sup>g</sup>The scrotal lift is also referred to as the scrotal tuck, scrotoplasty and scrotum reduction.
<sup>h</sup>This condition is also referred to as scrotum rugosum or cutis scrotum gyratum.
<sup>i</sup>This condition is now considered to be a component of genitourinary syndrome of menopause.
<sup>j</sup>The lasers include 595 nm pulsed dye laser and 1064 nm long pulse Nd:YAG laser.

Genital rejuvenation may be appropriate for hair-associated, morphology-associated, and vascular-associated changes of the vagina and scrotum (Table 1). Similar interventions for vaginal rejuvenation and scrotal rejuvenation may be considered for alopecia, hypertrichosis, and angiookeratomas [2-4]. For example, hair transplantation has been very successful for the management of hypotrichosis of the mons pubis and labia majora [5].

Gender specific morphology-associated changes of the vagina (atrophy and excessive clitoral hood or labia) and the scrotum (wrinkling, that has also been referred to as scrotum rugosum or cutis scrotum gyratum), for which rejuvenation may be effective,
have been observed. Surgical intervention is useful to eliminate the excess vaginal tissue and botulinum toxin injection into the dartos smooth muscle of the scrotum may resolve the exaggerated furrows and folds [2, 4]. Vulvovaginal atrophy, which can be a component of genitourinary syndrome of menopause or an acquired change following chemotherapy in women with breast cancer, can significantly be improved by treatment of the affected area with radiofrequency-based devices [2, 3].

Management of vaginal laxity can be nonsurgical or surgical; the latter include colporrhaphy or using elastic silicone threads [2, 7]. Similarly, treatment of scrotal laxity can be achieved surgically by performing a scrotal lift [6]. However, prompted by the efficacy of thread insertion to resolve vaginal laxity [7], a nonsurgical approach to the rejuvenation of a low-hanging, lax scrotum — the SCROTUM (Sutures Can Raise by Orienting Threads in an Upward Manner) procedure, in which absorbable poly-L-lactic acid (PLLA)/poly-lactide-co-glycolide (PGLA) bidirectional, cone-based, self-anchoring suspension sutures (similar to those approved for nonsurgical face lifts) are used to elevate the scrotum — has been proposed [4].

**Conclusion**

In summary, similar to rejuvenation of the face, intrinsic (such as aging) and extrinsic (such as trauma) alterations may result in genital changes that can be remedied by rejuvenation of the vagina or scrotal. The interest and participation in vaginal rejuvenation and scrotal rejuvenation can be expected to increase as women and men (and their physicians) continue to gain additional insight into not only the conditions of the vagina and scrotum that are amendable to rejuvenation but also the possible treatments for these conditions. Therefore, it is reasonable to speculate that genital rejuvenation will become the next frontier in medical and cosmetic dermatology.

**References**