Penile elongation and thickening—a myth? Is there a cosmetic or medical indication?

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Summary. Penile lengthening and thickening techniques can be performed in different ways for treatment of congenital penile hypoplasia and dysmorphophobia in terms of aesthetics or function. Particularly for penile lengthening, a combination of surgery and stretcher device is suggested. Surgery for lengthening comprises three different stages: suture with plane alternating edges of the pubo-penile skin, infrapubic lipectomy, and section of the suspensory ligament. Our approach to penile thickening differs depending on whether dysmorphophobia is related to aesthetics or function. While pericavernosal apposition of autografts is suggested in the first case, a technique developed by the authors is performed in the latter, which comprises bilateral longitudinal incision of the corpora cavernosa and enlargement of the tunica albuginea by means of saphenous grafts. The endothelial lining, which constitutes the internal surface of the veins, is highly compatible with the endothelium of the corpora cavernosa; therefore, the incidence of postoperative subareolar fibrosis and occlusive vein pathology is lower than after surgery performed with techniques using grafts of other material. The described procedure did not cause postoperative complications in terms of infection, wound healing and cosmetic appearance. All subjects resumed regular sexual activity after 4 months without any disturbance or functional limitation. Diametrical measurements at the 9-month follow-up revealed an increase of 1.1–2.1 cm. The reliability and efficiency of these procedures are strongly influenced by factors other than technical problems; however, expert diagnosis and psychological consultation in the case of dysmorphophobia will confirm and specify the indications.

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Penile elongation and thickening surgery is a subject of lively discussion because the indications and operative strategies are not standardized. The debate is rapidly evolving due to the delicate and complex ethical-physiological and medical-legal implications of the choice and execution of the different treatment methods. Lengthening and thickening phalloplasty is indicated in cases of penile hypoplasia and dysmorphophobia for aesthetic or functional reasons. Consequently, the definition of this type of surgery has changed from ‘reconstructive urological surgery’ to ‘aesthetic plastic surgery’.

Ethical considerations in penile surgery should not differ from those in surgery on other organs (nose, breast, etc.); we have to follow the same principles as in aesthetic surgery. Compared to reconstructive surgery, aesthetic surgery has to guarantee a higher degree of safety concerning both functional and aesthetic results. Under these conditions it is evident that the problem of whether or not such surgery is ethical, and whether or not it should be performed, is actually no problem. In the absence of universally acceptable parameters, penile hypoplasia is defined as a condition in which the erect penis is shorter than 13 cm in length (measured from the suprapubic skin to the apex of the glans) and less than 2.5 cm in diameter, such values obviously being correlated with the dimensions of the patient’s corpora cavernosa (Schonfeld & Bebebe, 1942; Wessells et al., 1996).

In those cases where the patient cannot accept the size of his penis although this is above the aforementioned norm, surgical treatment is no longer an objectively necessary operation but becomes a more subjective therapy to satisfy the patient. In these cases the penis must be viewed in its anatomical and physiological entirety. Concerning the choice of surgical procedure, it has proved useful to follow well-established methods.
Prior to surgery in patients with penile dysmorphophobia it is imperative to exclude an acute dysphoric personality as concomitant disease. In such cases, dissatisfaction is only seemingly related to the appearance of the penis; this excludes gratification of the patient’s expectations, irrespective of the result achieved by corrective surgery. Furthermore, the type of penile dysmorphophobia has to be determined beforehand according to the patient’s description. It should be resolved whether the cause of the penile dysmorphophobia is aesthetic or functional. In the first case, the size of the penis in its flaccid state is the element of dissatisfaction, while in the second case it is penile size during erection. Failure to distinguish between these two aspects during the preoperative instrumental and psychological diagnosis may be the reason for postoperative patient dissatisfaction and subsequent medical-legal consequences.

Penile lengthening surgery makes use of procedures that are generally accepted, achieving an apparent penile lengthening due to an optic effect. The operation is performed in three stages, the first representing a Z incision at plane-alternating edges or a WY. It should be kept in mind that with a Z incision there is a lower risk of sliding of scrotal skin on the penile surface. The second stage comprises suprapubic lipectomy (Fig. 1), which can be performed preoperatively or intraoperatively by means of liposuction. Removal of the suprapubic fatty tissue is followed by an increase of approximately 2 cm in the distance between the pubic bone and the end of the glans, resulting in an apparent lengthening of the penis (Figs 2 and 3). This is particularly evident in overweight men who have an over-hanging abdomen and ‘hidden’ penis.

The last stage of the procedure consists of infra-pubic section of the penile suspensory ligament (Fig. 4), followed by anterior sliding of the corpora cavernosa that are no longer attached to the pubic bone. The result is an apparent gain of approximately 2 cm in penile length. To avoid postoperative coalescence of the stumps of the suspensory ligament, some authors have suggested filling the space created by section with a stump of fatty vascularized tissue obtained during infra-pubic lipectomy.

Figure 1. Drawing of suprapubic lipectomy.

Figure 2. Erection induced by intracavernous injection prior to operation for penile lengthening.

Figure 3. Erection induced by intracavernous injection after operation for penile lengthening.

Figure 4. Drawing of infra-pubic section of penile suspensory ligament.
Liposuction. An equally valid and simpler alternative to maintain and increase the effects of section of the suspensory ligament is the use of a penis stretcher or J.E.S. extender from the first day after surgery, applying gentle progressive traction (Fig. 5). Use of the J.E.S. penis extender for varying periods of up to 1 year may result in an increase in penile length of up to 3 cm. According to recent case histories, use of the penis stretcher alone, which acts as an external cutaneous expander, could substitute surgical intervention—provided that the patient is prepared to wait for 12–24 months before definite results can be verified.

The impact of this surgery is insignificant, including postoperative complications, which are mainly inflammatory and usually treated by conservative therapy.

Another method orientated towards obtaining a lengthening of the penis is the intracavernous placement of cutaneous expanders which are gradually refilled and thus progressively lengthened (Figs 6 and 7). However, it must be noted that excessive lengthening of the prosthesis inside the corpora cavernosa may result in decubital damage to the tunica albuginea of the apexes of the cavernous bodies, with subsequent expulsion of the expander through the glans.

Surgery for penile thickening is performed using two methods: phalloplasty by pericavernous thickening and phalloplasty by enlargement of the tunica albuginea (our original technique). These methods are indicated in patients with dysmorphophobia for aesthetic or functional reasons.
Thickening phalloplasty as proposed by us for patients with dysmorphophobia related to function (Austoni, 1996; Austoni et al., 1996a,b) allows an increase in the volume of the corpora cavernosa through enlargement of the tunica albuginea (Fig. 9), which is achieved by placement of bilateral saphenous grafts.

Based on our experience with patients suffering from Peyronie's disease who had been treated initially with nonabsorbable dermal grafts, but later successfully with saphenous grafts, the described procedure is a combined coronal-scrotal approach (Fig. 10), exposing the corpora cavernosa from the apex to the crura (Fig. 11) while maintaining the integrity of the cutaneous lining. A bilateral longitudinal incision is made in the Buck's fascia from the crura of the corpora cavernosa to the apex (Fig. 12), without touching the neurovascular bundle, the anatomical and functional integrity of which must be preserved.

At this stage in the operation it is necessary to coagulate some collateral circumflex veins surrounding the corpus cavernosum from the dorsal vein and ventrally entering it or the corpus spongiosum. This coagulation does not produce undesired side-effects, but may reduce the possibility of veno-occlusive dysfunction. After preparation of the Buck's fascia, a bilateral incision is made in the tunica albuginea, the margins carefully being separated from the underlying erectile tissue for about 1 mm; thereafter, the graft is fixed with atraumatic 5/0 polyglycolic acid running suture. The graft is then covered with the Buck's fascia.
Figure 11. Combined coronal-scrotal approach: penile degloving.

Figure 12. Incision of Buck’s fascia from the apex to the crura of the corpora cavernosa.

which is closed and sutured. This is followed by reposition of the whole penile shaft skin under application of a drainage. Circumcision is necessary to prevent phimosis resulting from enlargement of the tunica.

This operative method was initially performed with split-thickness skin grafts (Fig. 13) to enlarge the graft and at the same time to prevent increased retraction which is expected after surgery because of intense macrophage activity affecting the components of the dermal graft. This process is thought to cause microfibrosis under the tunica albuginea, which may be responsible for postoperative veno-occlusive dysfunction (20% in Peyronie’s disease surgery). For these reasons, we use venous grafts, which settle more rapidly without changing (Wessells et al., 1996). The endothelial tissue of the inner wall of the vein seems to be highly compatible with the endothelium of the corpora cavernosa; therefore, the postoperative incidence of subareolar fibrosis and occlusive vein dysfunction is lower.

This operation consists of the isolation and removal of the saphena (Fig. 14) from the femoral cross to the poplitea with at least two incisions: the first of length 4 cm in the inguinal region, the second of length 4 cm in the middle third of the thigh. During this stage, all collateral veins must be tied up and sectioned. The part of the saphena thus prepared, varying from 24 to 34 cm, is divided into two halves, each of which is dissected longitudinally (Fig. 15). The stumps obtained in this manner can then be applied as patches with a continuous suture in polyglycolic acid to the albugineal incision margins (Fig. 16). The result is

Figure 13. Skin grafts for thickening phalloplasty.

Figure 14. Isolation and removal of the saphena.

Figure 15. Preparation of saphenous patches.
tested with intracavernous injection (ICI), both intraoperatively and again postoperatively (Figs 17 and 18). To consolidate the result obtained, it is suggested that a programme of 'gymnastics' for the corpora cavernosa should be followed using 'video sex stimulation' and 'vacuum therapy' during the first few weeks after surgery to improve the microcompliance of the areolar cavernous tissue and to achieve better oxygenation. Concomitant bland corticosteroid therapy should be performed during the first 40 days to reduce cicatricial reactions. Finally, a 40-day period of coital abstinence is recommended.

From 1995 to 1997, a total of 39 men between 24 and 47 years old underwent thickening phalloplasty with venous grafts after careful diagnostic evaluation (dynamic penile echography, cavernosometry, ICI testing with Rigiscan, dynamic penile Doppler velocimetry and NPT testing with Rigiscan). Counselling and history taking by a medical sexologist were included to assess the patients' psychosexual status. We excluded cases where the investigations had revealed pathological disorders, e.g. in the psychosexual sphere, arterial insufficiency or veno-occlusive pathologies of the penis. Corporoplasty with enlargement of the tunica albuginea using a bilateral saphenous patch was carried out following the procedure described above. On average, a period of 2 h was required for the operation. There were no postoperative complications in terms of infection, wound healing and cosmetic appearance. During the postoperative controls at 1, 3 and 9 months, all patients showed stabilization of the instrumental parameters measured preoperatively. Diametral measurements revealed an increase of 1.1–2.1 cm at the 9-month follow-up examination. All men resumed regular sexual activity after 6 months without any evidence of disturbance or functional limitation. None reported decreased libido or loss of sensation.

In conclusion, the penile lengthening and thickening techniques described offer a correct and rational surgical approach in the treatment of congenital penile hypoplasia and dysmorphophobia in terms of aesthetics and/or function. Particularly for penile lengthening, a combination of surgery and stretcher device is recommended. Penile thickening is achieved by pericavernous placement of autografts in patients with dysmorphophobia related to aesthetics, while enlargement of the tunica albuginea with saphenous grafts is performed in those who are dysmorphophobic in terms of function. The reliability and efficiency of these procedures are strongly influenced by factors other than technical problems; however, expert diagnosis and psychological consultation in the

Figure 16. Application of saphenous patches with a continuous suture to the tunica albuginea.

Figure 17. Intracavernous injection intraoperatively before thickening phalloplasty.

Figure 18. Intracavernous injection postoperatively after thickening phalloplasty.
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References


