



Sexual Medicine

Penile Suspensory Ligament Division for Penile Augmentation: Indications and Results

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Article info

Article history:

Accepted January 13, 2006
 Published online ahead of
 print on January 31, 2006

Keywords:

Penile suspensory ligament
 Penile lengthening
 Penile dysmorphic disorder

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Abstract

Objective: This study assessed the management of patients requesting penile length enhancement by division of the penile suspensory ligament.

Methods: From September 1998 to January 2005, 42 patients with a variety of etiologies were included; all underwent division of the penile suspensory ligament. The outcome was assessed objectively based on increase in flaccid stretched penile length (SPL) and subjectively using the rates of patient satisfaction.

Results: The mean increase in SPL was 1.3 ± 0.9 cm (range, -1 to $+3$ cm), with the addition of a silicone spacer placed between the pubis and penis giving a better outcome ($p < 0.05$). The overall patient satisfaction rate was 35% but lower in the group with penile dysmorphic disorder at 27%.

Conclusion: Division of the penile suspensory ligament or other augmentation techniques may increase penile length but usually not to a degree that satisfies the patient. Men with penile dysmorphic disorder often have unrealistic expectations regarding the outcome of surgical intervention and should be encouraged to seek psychological help primarily, with surgery reserved as the last resort.

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1. Introduction

The suspensory ligament of the penis is comprised of two components, the suspensory ligament proper and the arcuate subpubic ligament that attaches the tunica albuginea to the midline of the pubic symphysis [1]. Its function is to support the erect

penis in an upright position and to aid vaginal penetration. Surgical division of this ligament may allow the penis to lie in a more dependent position and therefore give the appearance that the penile length has increased. Various penile lengthening procedures have been described [2–4]; the most widely used technique is division of the penile

suspensory ligament to gain some length at the expense of slight instability.

Although it is widely accepted that patients with a truly small penis would be eligible candidates for penile enhancement surgery, no current consensus guidelines are available for the treatment of patients with a normal-sized penis [5]. The average penile length in white men is 12.5 ± 2.7 cm [6] and the most common request for penile enhancement surgery is in patients with a normal penile size who have a subjective altered body perception, rather than an objective clinical assessment that their penis is small [7]. This is otherwise known as penile dysmorphic disorder.

In body dysmorphic disorder, patients present with persistent preoccupation of an imagined defect in physical appearance that causes clinically significant distress or impairment in social or other important areas of functioning [8]. Patients often interpret normal appearances as abnormal and distressing, resulting in marked anxiety and depression. The diagnosis of penile dysmorphic disorder should therefore be made by a psychiatrist.

This study assessed the operation of penile suspensory ligament division as a penile lengthening technique, in particular, its role in the treatment of penile dysmorphic disorder.

2. Methods

2.1. Patients

This is a retrospective review of 42 patients who had penile lengthening surgery by division of the penile suspensory ligament during the period 1988 to 2005. Their mean age was 39 yr (range, 16–66 yr) and penile dysmorphic disorder was the most common presenting diagnosis as shown in Table 1.

2.2. Preoperative assessments

During the patients' initial consultation, a detailed medical and sexual history was obtained and physical examination performed. The patients' concerns and expectations were

discussed and normograms of penile length shown [6]. The most common scenario in patients with penile dysmorphic disorder consisted of anxiety and embarrassment arising from changing in front of others, that is, the "locker room" syndrome.

Features suggesting hypogonadism were recorded particularly in the group with congenital micropenis.

A physical examination included an assessment of the flaccid stretched penile length (SPL), measured from the pubic penile skin junction to the meatus under maximal extension of the penis. Ideally, erect penile length is a more accurate assessment of penile size, repeated intracavernosal injections to measure this preoperatively and postoperatively in this group of patients is impractical and SPL is therefore used, which has been demonstrated to be an accurate reflection of erect penis size [6].

The urethra was inspected to exclude the congenital anomalies of hypospadias or epispadias and testicular size; position and secondary sexual characteristics were examined to exclude an endocrine abnormality. Any abnormalities to the penile skin, including webbed penis, concealed penis, or penile scrotalization were noted.

After the initial consultation, patients with a possible diagnosis of penile dysmorphic disorder were encouraged to seek psychiatric or psychosexual counseling and discouraged from surgery. Of the 27 men with dysmorphic disorder, 11 were referred by a psychiatrist and another 12 had a psychiatric evaluation preoperatively. Overall, this series consists of approximately 20% of all patients who were referred to the unit but still insisted on having surgery.

2.3. Surgical technique

All patients had division of the penile suspensory ligament with some also having other augmentation techniques as shown in Table 2.

The penile suspensory ligament was approached via either a transverse or inverted V suprapubic incision and divided (Fig. 1). With the penis on stretch, the ligament is divided close to the pubic bone until all midline attachments have been freed. In the later part of the series, a silicone buffer (a small testicular prosthesis) was placed in the space created by the ligament division and anchored to the base of the pubis with a 1-0 Ethibond suture, in an attempt to prevent reattachment of the penile suspensory ligament to the pubis and to push the penis forward (Fig. 2A and B). In patients with excessive

Table 1 – Summary of the diagnosis with preoperative SPL

Diagnosis	No. of patients (%)	Preoperative SPL \pm SD, cm
Penile dysmorphic disorder	27 (64)	11.5 ± 1.7
Peyronie's disease	7 (17)	11.6 ± 2.9
Congenital micropenis	5 (12)	6.0 ± 1.41
Penile carcinoma	2 (5)	9
Trauma	1 (2)	6

SPL = stretched penile length; SD = standard deviation.

Table 2 – Summary of the surgical techniques used

Operation	No. of operations (%)
Division of suspensory ligament alone	7 (17)
With insertion of silicone buffer	14 (33)
With silicone buffer and inverted VY plasty	10 (24)
With silicone buffer and fat pad excision	3 (7)
With inverted VY plasty	4 (10)
With excision of suprapubic fat pad	1 (2)
With fat pad excision and inverted VY plasty	3 (7)
Total no.	42 (100)

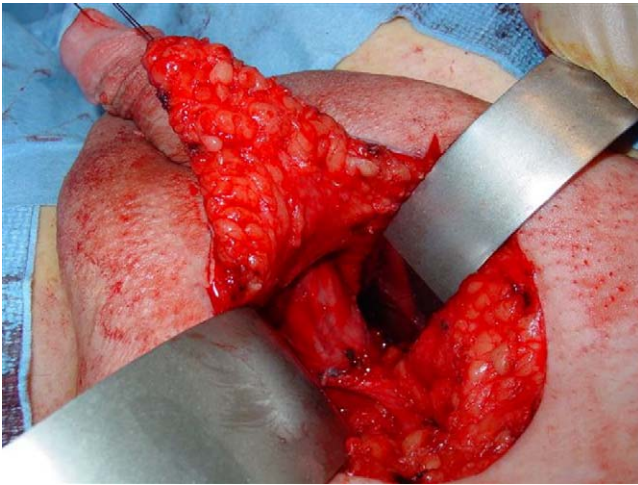


Fig. 1 – Identification of the penile suspensory ligament.

obesity, an excision of the suprapubic fat pad was performed. The original incision was then closed and usually as an inverted VY plasty.

Once the wound had healed, patients were then encouraged to perform postoperative penile stretching with either

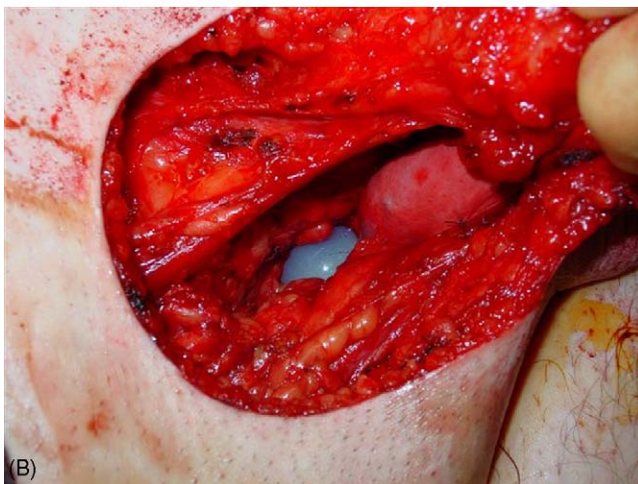


Fig. 2 – (A and B) Insertion of a silicone buffer.

penile weights, a vacuum constriction device, or the use of a penile stretcher device.

2.4. Postoperative follow-up

The surgical outcomes were assessed objectively by measurement of the flaccid SPL, with the increase in length calculated by subtracting the preoperative SPL from the postoperative SPL. Patients were questioned directly as to whether they were satisfied with the surgical outcome; that is, “Are you satisfied with the outcome of your surgery?” The mean follow up period was 16 mo.

2.5. Statistical analysis

Results are expressed in mean \pm standard deviation (SD). The changes in SPLs before and after surgery were compared using the paired Student t test. The changes in SPLs between different operations were compared using the unpaired Student t test.

3. Results

The results according to the surgical technique used and the original etiology are shown in Tables 3 and 4.

The SPL was significantly increased by 1.3 ± 0.9 cm ($p < 0.0005$) when the suspensory ligament of the penis was divided. The only specific technique that significantly lengthened the penis (0.7 ± 1.0 cm, $p < 0.05$) was the placement of a silicone buffer to prevent ligamentous reattachment following division.

All of the etiology categories had an increased penile length, but this was only significant in the group of men with penile dysmorphic disorder (1.0 ± 1.1 cm, $p < 0.005$).

In some motivated patients who performed postoperative stretching, a gain of 3 cm was achieved. However, others noticed penile shortening of 1 cm. The mean increase in SPLs of patients who performed postoperative physical therapy was 1.6 ± 1.0 cm and 1.2 ± 0.9 cm in those without, with no statistical significance between the two groups.

Overall only 35% of the patients were satisfied with the outcome of surgery. Satisfaction rates were lowest in patients with dysmorphophobia (27%) or Peyronie disease (17%).

A second operative procedure was requested by 20 patients and was performed in 17. Only two patients were eventually satisfied with their penile length, raising the overall satisfaction rate to 40%.

Complications included postoperative wound infection in four patients and a wound breakdown in one; all five men were managed conservatively.

Table 3 – Results relating to etiology

Diagnosis	No.	Mean increase SPL \pm SD, cm	Satisfaction rate, %	Requesting further surgery, %
Penile dysmorphic disorder	27	1.0 \pm 1.1*	27	54
Peyronie disease	7	0.6 \pm 1.1	17	17
Congenital micropenis	5	1.5	60	80
Penile carcinoma	2	NK	100	50
Trauma	1	2	100	0
Overall	42	1.3 \pm 0.9**	35	50

SPL = stretched penile length; SD = standard deviation; NK = not known.

* $p < 0.005$

** $p < 0.0005$

Table 4 – Results of various operative techniques

	No.	Mean increase SPL \pm SD, cm	SPL change range, cm	Satisfaction rate, %
Overall, division of suspensory ligament	42	1.3 \pm 0.9*	-1.0-3.0	35
All patients with insertion of silicone buffer	27	0.7 \pm 1.0**	-1.0-3.0	36
Division of suspensory ligament alone	7	1.4 \pm 1.1	0.0-2.5	29
With insertion of silicone buffer alone	14	0.7 \pm 1.3	-1.0-3.0	33
With silicone buffer and inverted VY plasty	10	0.7 \pm 0.8	-0.5-2.0	30
With silicone buffer and fat pad excision	3	1	1	67
With inverted VY plasty alone	4	2.5	2.0-3.0	50
With excision of suprapubic fat pad alone	1	-0.5	-0.5	0
With fat pad excision and inverted VY plasty	3	1.5	0.5-2.5	33

SPL = stretched penile length; SD = standard deviation.

* $p < 0.0005$.

** $p < 0.05$.

4. Discussion

Division of the penile suspensory ligament with or without the additional procedures of suprapubic fat pad excision and inverted VY plasty is a simple and a commonly used penile lengthening technique. Although this has been related to serious morbidity [9,10], in this series, the complication rate was low as shown by others [5]. The procedure is simple to perform and gives similar results to more complex types of penile lengthening surgery [2,3].

The operation does lengthen the flaccid penis but usually only by 1 cm. In some patients who persevere with postoperative stretching exercises, as much as 3 cm gain can be achieved, but patients must also be warned that a small degree of penile shortening may also occur.

The placement of a spacer between the penis and the pubis to prevent reattachment, and possible shortening, seems to give the best results. All other additional procedures did not help to gain length.

Despite the increase in SPLs and low complication rate, a large proportion of patients were dissatisfied with the outcome of the surgery, being highest in the group of patients with penile dysmorphic disorder.

Clearly, surgery is not a cure for penile dysmorphic disorder because the patients often have unrealistic expectations and any length gain would not be enough in the patient's view—"a normal penis will remain normal." In patients with an organic cause for their shortening the satisfaction rate is higher, although it is appreciated that these patients may also have psychological distress from their condition. The difference is that these patients can distinguish normality from abnormality, unlike patients with dysmorphic disorder.

Patients with this condition should be discouraged from having surgery but this is not always possible and a classification as shown in Table 5 is a useful guide. All patients should have a psychiatric assessment to uncover predisposing factors that

Table 5 – Presenting symptoms related to severity of penile dysmorphic disorder

Mental state	Presenting concern
Normal	Doubts about size
Mild anxiety	Voiding in public
Moderate anxiety	Avoids locker room
Severe anxiety	Insists on surgery
Suicidal	Suicidal intent

could be treated psychologically. The patients must be given the correct advice about the expected gains from surgery and if they still wish to go ahead with the operation knowing that a 1–2-cm length gain should be expected, then the satisfaction rate will increase as their expectations are met. It is wise to encourage the patient to start the stretching exercises before surgery so that he knows what is needed to get the best result.

The surgeon's responsibility is to ensure that unnecessary surgery is not performed and that informed consent has been provided by the patient. However, it is also appreciated that in this group of patients, if surgery is refused outright by the urologist, some patients in their desperation may resort to seeking help from inappropriate and less qualified practitioners, which would ultimately be to the detriment of the patient [9,10].

Patients with penile dysmorphic disorder should be discouraged from surgery and be referred for psychiatric counselling. Surgical intervention should be reserved as a last resort and only when the patient understands the limitations of the expected outcome.

Acknowledgment

We would like to acknowledge Mr J. P. Pryor for his clinical expertise in producing the information provided in Table 5.

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