Penile size and the 'small penis syndrome'

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The male is often troubled by concerns that his penis is not large enough to satisfy his partner or himself. He is ashamed to have others view his penis, especially in the flaccid state. Such concerns might be unfounded in reality and might be a presentation of social anxiety or some other clinical problem, such as erectile dysfunction. Concern over the size of the penis, when such concern becomes excessive, might present as the 'small penis syndrome', an obsessive rumination with compulsive checking rituals, body dysmorphic disorder, or as part of a psychosis. However, it is often a worry that can be described as within the normal experience of many men. Various potential causal factors are considered. A thorough assessment, normalizing the worry and then exploring the treatment options in detail with the man, is essential to allow the matter to be consolidated satisfactorily within the male ego.

KEYWORDS

penis size, anxiety, micropenis, small penis, body dysmorphophobia, erectile dysfunction

INTRODUCTION

The penis, particularly in its erect state, is a symbol of masculinity. In many cultures it has come to symbolise attributes such as 'largeness, strength, endurance, ability, courage, intelligence, knowledge, dominance over men, possession of women; a symbol of loving and being loved'. A review [1] is recommended which describes Indian Sadhus using weights, Dayak men in Borneo piercing the glans and then inserting items in the resultant holes to stimulate the partner, and the Topinama of Brazil, who encourage poisonous snakes to bite their penis to make it enlarge (for 6 months!). Some of these concepts date back over many thousands of years, and there is evidence that prehistoric cave dwellers attributed the symbolic values of strength and power to penile size, as well as those of virility and fertility, a process also recommended in the Kama Sutra [2]. Given the historical context it is perhaps no surprise that even today many men place great importance on the size of their penis. Hegemonic masculinity is defined by attributes such as physical strength, heterosexuality with authority over women and other men, showing no emotions (such as remorse and uncertainty, which might suggest vulnerability), economic independence, and an ability to demonstrate sexual 'conquest'. While most men do not embody all of these qualities, society supports hegemonic masculinity within most of its institutions [3].

Given this historical and cultural background, it is perhaps unsurprising that for many men the size of their penis is an important issue. It is perhaps more surprising that when men are concerned about their penile size, this concern relates not only to the erect but also to the flaccid penis. These concerns, when severe, can lead a man to go to extreme lengths to try to change the size of his penis. This review deals with issues surrounding the aetiology, psychology and management of these men, who might be considered to have the 'small penis syndrome' (SPS). Classically, the SPS is found in men with a normal-sized penis but who are anxious about the size of the penis, in contrast to men who have a truly small penis (micropenis).

It is perhaps relevant that while men with a larger penis, in length and circumference, have a better body image, genital image and have a feeling of greater sexual competence [4], women do not necessarily believe that a larger penis is 'better'. For instance, it was shown that 90% of women prefer a wide penis to a long one [5,6]. The issue of attractiveness to women is complex, but most data suggest that penile size is much lower down the list of priorities for women than such issues as a man's personality and external grooming.

DEFINITIONS

The SPS is defined as an anxiety about the genitals being observed, directly or indirectly (when clothed) because of concern that the flaccid penis length and/or girth is less than the normal for an adult male, despite evidence from a clinical examination to counter this concern. It might be an obsessive rumination, part of a body dysmorphic disorder (BDD), or as part of a psychosis (see below). The degree of emotional distress and behavioural impairment is often much greater than the size and nature of the defect sensed within the self. Often the specific matter of penile size is not an overtly acknowledged issue, and is often situational or context-driven [7]. As such, the clinician might need to consider this matter as part of the overall assessment of different presenting problems within urology and psychiatry.

Dysmorphophobia has been described for more than a century; it is a psychiatric condition, also termed BDD, and is observed as a fixation on an imaginary flaw in the physical appearance. In cases in which a minor defect truly exists, the individual with BDD has an inordinate degree of anguish. People with BDD frequently develop major depressive episodes and are at risk of suicide. They might also show violent behaviour toward their treatment providers that can cause concern to clinical caregivers. In many cases, individuals with BDD have drastic social and occupational dysfunctions that might progress to the point of social isolation. There is embarrassment and fear of being scrutinized or mocked, which often causes these individuals to avoid social situations and intimate relationships. As victims of poor self-image, these individuals typically do not show sufficient social skills and frequently are single or divorced. People with BDD can believe firmly that a marked change in their perceived body defect is a prerequisite to their

TABLE 1 A summary of reports of measurements of penile size

Study	N	Mean or range age, years	Population	Flaccid*				Erect*	
				length	stretched length	circumference	suprapubic fat depth	length	circumference
[13]	54	20–25	Caucasian	–	13.02	8.55	–	–	–
[54]	2770	20–59	–	9.7	–	–	–	15.5	–
[19]	156	–	Mostly Caucasian	–	–	–	–	16	13.5 (base)
[14]	80	54	White 67.5%, Black 20%, Asian 12.5%	8.85	12.5	9.7 (mid shaft)	2.85	12.89	12.3 (mid shaft)
[20]	184	–	Heterosexual 60%	–	–	–	–	15.71	13.2 (base)
[16]	813	30.8	All homosexual	10.4	–	9.8 (max)	–	16.4	12.6 (max)
	3417	30.5	All heterosexual	9.8	–	9.4 (max)	–	15.6	12.2 (max)
[15]	111	18–19	Potent German men	8.6	–	–	–	14.48	–
	32	40–68	German men with ED	9.22	–	–	–	14.18	–
[18]	3300	17–19	Italian men	9	12.5	10 (mid shaft)	–	–	–
[21]	200	20–22	Turkish men	6.8	8.98	–	–	12.7	–
[22]	104	54	British men	–	13 (median)	–	–	–	–
[17]	124	59	Before RP	9	13	9.5 (mid shaft)	2.5	–	–
	63	59	After RP	8	12.5	10 (mid shaft)	2	–	–
[11]	123	21.7	Korean men	6.9	9.6	8.5 (mid shaft)	1.1	–	–

**mean values, in cm, unless stated otherwise. RP, radical prostatectomy.*

happiness and well-being. As such, it can be a manifestation of abnormal body image.

This contrasts with most men, who are likely to be satisfied with their erect (8%) and overall penile size (71%) than with their flaccid size (51%). Further overall satisfaction with the genitals was linked to increased body satisfaction [8].

PREVALENCE

Most men rated their penis as average (66%) and only 22% as large and 12% as small, in a large Internet-based survey of 52 031 heterosexual men and women [9]. Self-reported penile size was correlated positively with height and negatively with body fat level. About 85% of women were satisfied with their partners' penile size, although only 55% of men were satisfied, with 45% wanting to be larger (and 0.2% to be smaller). Most women who reported their partners' penis as small were not satisfied. Men reporting a larger than average penis also rated their appearance most favourably. The authors noted that it might be the reverse; the men's more general body image influenced their estimates of penis size [8]. Furthermore, self-esteem might influence their estimate of penile size. These findings are similar to those reported by Lee [10] and Son *et al.* [11], although both studies had more men reporting small rather than large penises. Finally, the effect of the media might influence men, who give greater emphasis to this trait, that women might want something different from reality, and that women might have a different marketing target to that of men [12].

NORMAL PENILE SIZE

Flaccid penile length is just under 4 cm at birth and changes very little until puberty, when there is marked growth. Schonfeld and Beebe [13] noted that the length of the stretched penis approximated the length of the erect penis, while the flaccid circumference was a poor indicator of erect circumference. There is marked variation within individuals, with heat and exercise, as well as anxiety, all contributing to the variation.

There have been several reports of measurements of penile size, which are summarized in Table 1 [11,13–22]. These studies measured various aspects of penile size, including flaccid length, stretched length, erect length, flaccid girth and erect girth. The variability of some of the values recorded inevitably reflects the different populations studied and differing techniques of measurement. Stretched penile length in these studies was typically 12–13 cm, with an erect length of 14–16 cm. For girth, there was again remarkable consistency of results, with a mean girth of 9–10 cm for the flaccid penis and 12–13 cm for the erect penis.

For penile length some general observations are possible. First, the values for penile length show some consistency, with the marked exception of the Korean study [11]. Second, with a value of 9–10 cm, the flaccid length is usually 3–4 cm shorter than the stretched penile length and 5–6 cm shorter than the erect length. Third, as suggested by the work of Schonfeld and Beebe [13], there is a good correlation between stretched penile length and erect length [14]. It is generally accepted that a true micropenis is >2.5 SDs below the mean length, and given the values shown in Table 1, it was suggested that any penis with a stretched length of <7 cm is a true micropenis [14].

There are several areas where further work is needed. For instance, except for the Korean study, there is little evidence of racial differences. This runs counter to many widely held suppositions and needs further investigation. For the issue of age (in adult

men), while there appeared to be a trend suggesting that men with a greater mean age had smaller penises than those in studies where the mean age was lower, when this question was formally assessed there were no differences [15]. One study compared the values for penile length in homosexual and heterosexual men [16]. That study was based on measurements made by Kinsey some decades earlier, and showed statistically significant differences, with homosexuals having the greater length and girth. The authors suggested that this might reflect greater *in utero* exposure to androgens, but again it is area that needs further research.

Pelvic surgery, in the form of radical prostatectomy, has also been shown to result in penile shortening [17]. The explanation for this might be a direct consequence of the prostatectomy, but an alternative hypothesis is that, with the onset of erectile dysfunction (ED) caused by the prostatectomy, there is a gradual loss of smooth muscle within the penis, with associated fibrosis and shrinking. This further raises the issue of whether men who have severe ED have smaller penises than age-matched potent men. Again, there are few data on this issue.

AETIOLOGY

EARLY OBSERVATIONS

The SPS or 'locker room syndrome' might have its origin in childhood, when the young boy observes the larger phallus of an elder sibling or a friend, or even of his father. In one study, patients visiting an andrology clinic complaining of a small penis were asked when they believed the problem had started. Of these men, 62.7% said that their concerns started in childhood, when they compared their penis to that of their friends, while 37.3% said that their concerns began during their teenage years, after seeing erotic images [23]. None of these people had a penis of >2.5 SDs less than the mean.

Often the first penis that a child sees is his father's, which will inevitably not only be larger, but which will also look relatively larger from a child's more lowly perspective, especially if the father is seen standing naked after a warm bath or during any state of arousal. When compared to the child's penis, this observational perspective is compounded by the child looking down at his own penis. This issue of perspective is of course relevant at all ages.

RELATIONSHIPS WITH OTHERS

Fears and anxieties about penile size might also arise after the breakdown of a relationship, or after derogatory or malicious remarks made by a partner during sexual activities. The receptive partner might report that she or he cannot feel the man 'inside' during sexual intercourse. This might lead to poor sexual self-confidence, with a tendency to feel inadequate in vulnerable public situations, and this in turn might prevent the man from establishing further (or any) intimate relationships. Under these circumstances, the anxiety is primarily related to the erect penis. There is a suggestion that for those men who consider that they have a small penis, there is an insecurity effect [9], although the direction of causality remains unclear. General body image and self-esteem might influence this further. The denigrating effects of other men might have a strong effect on further concern [24].

DEVELOPMENTAL ISSUES

There is some evidence that for those men with poorly developed and small testicles, the problem might be accentuated, as there is no upward and forward lift to the penis, and so the genital bulge is minimal. This has a secondary effect of less evidence of a penile form in men wearing tight jeans or swimming attire. Genital confidence can be impaired if there are small testicles, with the perception that the penis is small, when indeed it is normal in size. Occasionally there might be a history of congenital abnormality (e.g. hypospadias). Other impairments of neurological development have been proposed to explain a variation in normal sensation in the genital area, with subsequent 'misreading' of any sensations perceived. These include neurological impairment of tactile stimulation and sensation in the perineal area. An alternative theory suggests that there might be dysfunction in one of the 'association areas' within the parietal lobe that accumulates a sensory store for 'perception'. Associated psychological contributions from the effect of cognition and of disgust (possibly via the amygdala) and of the cognition of parts belonging to self (prefrontal cortex) are all possible contributory factors [25], as may that arising from envy.

PSYCHIATRIC DISORDER

These include obsessive-compulsive disorder, social phobia, anxiety and depression. BDD is marked by excessive preoccupation with an imaginary or minor defect in a facial feature or localized part of the body. Borderline and narcissism personality types might be over-represented. Narcissism is a pattern of thinking and behaving in adolescence and adulthood, which involves infatuation and obsession with one's self to the exclusion of others.

SEXUAL DYSFUNCTION

This condition is often raised by patients with other clinical conditions, such as ED or ejaculatory dysfunction, and less frequently in conditions such as sexual aversion.

OTHER FACTORS

In men who are overweight, there are dual factors of a perspective issue (the penis cannot be seen with the abdominal overhang) and with the presence of a significant suprapubic fat pad causing the penis to be partly buried [18,26]. Concerns over levels of female sex hormones and industrial pollutants in water have been raised by the media.

ASSESSMENT

The clinician must determine whether the main concern relates to flaccid or erect length, and whether girth is a significant concern. The motivation (internal and external) and expectations of the consultation must be understood. A full medical, psychosexual and psychiatric history should be undertaken. Specific themes that must be explored are around concerns about appearance, and body image (and specifically for BDD). General beliefs, values, assumptions and behaviours around genitals and sexuality should be enquired about. How does this affect the man? What is he unable to do in his life that bothers him? Can he use public toilets? Does he socialize in the public house, where beer drinking would necessitate many visits to the toilet? Actual paruresis (an inability to urinate in the presence, real or perceived, of others) might occur for many men (another presentation of social anxiety) and might need specific treatment. Can he go swimming or participate in athletic sports?

Does he avoid meeting a potential partner because he is afraid of the consequences of emotional intimacy? Most men will have a normal sex drive but might not have a partner. Has he avoided certain occupations? If the man is in a relationship, try to see the man and partner together, and get the perspective from the partner.

Psychological profile scores might be helpful to assess self-confidence, self-esteem, quality of life, social anxiety and symptom distress, but should be limited to those clinicians skilled in undertaking and interpreting such inventories.

A physical examination should involve an assessment of body habitus, detailed genital examination (immediately after genital exposure, to prevent any changes due to external temperature) with careful exclusion of genuine penile anomalies such as hypospadias, epispadias and Peyronie's disease. The presence of a significant suprapubic fat pad should be noted. Careful measurements of flaccid length, stretched length and flaccid girth are essential. If the erect size, particularly of girth, is an issue then measurements after intracavernosal alprostadil are also helpful (or ask the patient for a digital image of the erect penis). As endocrine abnormalities can cause true micropenis, a general assessment of the secondary sexual characteristics is valuable.

MANAGEMENT AND TREATMENT OPTIONS

NORMALIZE AND PROVIDE EDUCATION

It is important to avoid dismissing the concerns raised by the man; to do so might further humiliate him and heighten his anxiety and concerns. It is helpful to normalize the situation, as it is a common concern amongst many men, and to give the man some reassurance about the condition and his symptoms. As misinformation or lack of information is often apparent, it is important to educate the patient about the normal variation in penile size and how his penile dimensions relate to the normal range. It is also important to educate the patient about the relative importance placed on the size of the penis by most other men and women, as well as society and the media, and how he might selectively notice certain aspects of external cues around the genitals in general.

MIRROR WORK

The patient is asked to look at himself undressed in front of a full-length mirror. By doing so, he will observe the penis in the way that he would see other men. The penis looks longer and larger than when observed from above, looking down while standing upright. This can be done at home when alone, or can be done with a clinician or therapist, with the patient standing behind a curtain partition. This can be very useful for a man who avoids looking at himself naked or has no access to a full-length mirror at home [27].

PSYCHOLOGICAL THERAPIES

Psychotherapy is important for many men with concerns about having a small penis. Whether the penis is actually small or just perceived to be small, cognitive behavioural therapy (CBT) can be useful in building confidence and counteracting negative thoughts. CBT involves exploring the typical thinking patterns experienced by the patient and ascertaining if some of these can be ascribed as automatic, protective but also unhelpful and self-defeating. Substitution of alternative generated thoughts (alone or with the input of the therapist) and/or changes in ways of responding (behaving) to such thoughts can bring about dramatic changes. Where the penis is on the lower side of normal dimensions, the man can be provided with suggestions on how to cope and accept these facts. CBT is also effective in BDD [28]. Wherever possible, explorative work with a partner should be encouraged. Themes around self-confidence, self-esteem, anger, fear of rejection and narcissism might emerge. Therapy in a facilitated group might help men to challenge each other and their stated anxieties more effectively than in individual therapy, although equally there might be ongoing competitiveness to have the 'smallest penis' or greatest social impairment.

PHYSICAL TREATMENTS

These include use of vacuum devices, penile extenders and traction devices, and penoscrotal and penile rings. Evidence on their efficacy is very limited and it is important that the patient is aware of this. Vacuum devices are ordinarily used as a treatment for ED but can also be used to 'exercise' the penis. This can have both a psychological uplifting effect for the patient but evidence suggests that there is minimal physical change. A recent study reported on 37 men with a stretched penis length of <10 cm who used the device for 20 min, three times a week. The mean penile stretched length increased from 7.6 cm to 7.9 cm after 6 months of treatment, although this change was not statistically significant. Interestingly, three men had an increase in their penile length of >1 cm, and nine were satisfied with the treatment [29].

Penile extenders have also been used as a means of stretching the penis, and devices are available for use throughout the day. There are several commercial devices available (including the Jes extender and Andropenis) although there are few data showing efficacy for any of them. A recent study of 31 men, with a mean baseline stretched penile length of 12 cm, showed that with daily use of the Phallosan® extender system for ≥3 h, by 3 months there was a mean stretched length of 13 cm with a further increase to 13.8 cm by 6 months ($P < 0.001$) [30]. Changes were also seen in penile diameter. There was a good correlation between the duration of use of the device and increase in length, and 80% of patients were happy with the outcome.

An older study reported the use of a stretching device (Penistretcher®) in nine men with a baseline stretched length of 12 cm. They reported that after using this device for ≥6 h per day over a 4-month period, the mean increase in stretched length was 1.8 cm [31]. Both these reports included few men and were only reported as abstracts. There are currently no peer-reviewed publications related to the use of these devices in men with SPS.

Other devices that have been used in this group of patients include 'Cock rings' and penoscrotal rings. In one small report, there was a suggestion that they might help to augment penile size and maintain erections in men with anxiety [32].

MEDICATIONS

These might be indicated for use in men with SPS; the main group of drugs used are the selective serotonin reuptake inhibitors (SSRIs). Fluoxetine has been shown to be effective in treating BDDs [28] and is better than placebo in both delusional and non-delusional patients. Buspirone is an anxiolytic that can be tried in extreme cases of anxiety. Anti-

TABLE 2 The reported results of penile lengthening procedures

Study	N, type of patients	Technique	Follow-up, years	Initial length, cm (range or SD)	Length after surgery, cm (range)	Mean gain, cm (range or SD)	Comments
[43]	19, MP + BDD	Penile disassembly + cartilage insertion	3.3 (mean)	3.6 (F) (2.6–4.7) 8.3 (E) (6.2–10)	6.6 (F) (5.5–8.2) 11.4 (E) (9–14)	–	–
[41]	18, MP + BDD	DSL	0.75 (≤3)	8.9 (E)	10.5 (E)	1.5–2.5	–
[42]	42, MP + BDD	DSL	–	–	–	1.3 (1.2)	35% satisfied
[42]	27, BDD	DSL	–	11.5 (1.7)		1 (1.1)	27% satisfied
[39]	11, BDD	DSL	2	9.12 (7–11.3)	10.75 (9.2–12.9)	1.65 (1–2.3)	–
[44]	31, BDD	DSL	–	8.72 (6.5–10)	–	2.42 (1.5–4.8)	–
[43]	15, BDD	DSL	2.25	–	–	3.45 (2.1–4.5)	

DSL, division of the suspensory ligament; MP, micropenis; (E), erect; (F), flaccid.

psychotic medication can be used to treat delusional BDD but there is little evidence of efficacy beyond the treatment of the psychosis per se. A typical course of treatment might be 8 weeks on an SSRI and/or adjunctive treatments such as buspirone or pimozide (a rarely used antipsychotic agent) [33]. Testosterone therapy is only of value in men with micropenis [34] and is not considered further here.

SELF-HELP SOURCES

Inevitably, many men, rather than seek formal medical help, prefer to use other sources of information, but might then seek medical advice. The Internet is a rich resource of sources offering to help men 'increase their manhood'. Inevitably, there are no efficacy data relating to most of these treatments (especially the many pills and lotions available). Common sense advice can be found by some retailers, including 'bulge underpants' and swim shorts, body and genital hair trimming or shaving, the use of 'hot towels and wraps' and 'jelqing'. The last is an ancient Arab technique whereby the hand pulls on the penis causing stretching (and effectively self-focus work encouraging psychological acceptance of the penis, which will change in size and shape during the process) and is recommended on many websites. Some websites advocate that 'small is beautiful' and that the smaller penis can be celebrated by both the man and his partner.

SURGICAL TREATMENT

This would appear to be an attractive option for many men with SPS, and indeed, for those who research the Internet there is no shortage of sites encouraging such an approach. However, the results of surgery are poorly documented and significant complications can ensue. Accordingly, it is recommended that any surgical procedure should only be used after a careful preoperative assessment, which should include a thorough psychological assessment as outlined above. Furthermore, careful advice on the potential results of surgery and the potential complications that might ensue is essential. Indeed, the 2nd International Consultation on Sexual Dysfunctions concluded that 'most men will not wish to proceed to surgery when properly informed of the likely outcome and risks of complications' [35]. The ethical issues of offering such surgery to men with a normal sized penis (which is usually the case [36]) are reviewed by Vardi [37], especially as this appears to be increasing in the private sector rather than research or university settings [38].

If, after such an approach, the man wishes to consider surgery, then several surgical options are available. Some surgical approaches will potentially increase the flaccid length of the penis (e.g. division of the suspensory ligament of the penis), while others have been reported to increase both flaccid and erect length. Similarly, some approaches offer an increase in erect girth only, while others offer an increase in both erect and flaccid girth.

Either liposuction or suprapubic lipectomy are potentially valuable in men with a significant suprapubic fat pad, thereby making a partly buried penis appear more prominent. Other than bruising, there are few complications with such an approach, and the cosmetic results are reasonable. However, there are few reported results for this approach [39].

Division of the suspensory ligament is the procedure that has been most commonly described for flaccid penile lengthening [39–44]; it allows the corpora cavernosa to be partly separated from the pubis, thereby increasing the apparent flaccid length of the penis. Some form of adjustment of the suprapubic skin is needed (usually a V-Y advancement flap or a Z-plasty), and it is sometimes helpful to place a 'spacer' between the pubis and the corporal bodies to prevent re-scarring at the site of the divided suspensory ligament. At best, the proponents of this technique suggest a 2-cm increase in flaccid length (Table 2) [39,41–44]. Potential problems include the inevitability that the erect penis will tend to point downwards when the man is upright, rather than standing 'erect' and perpendicular to the body. Specific complications include re-scarring of the infrapubic region, with the consequence that there might be no increase in length and in some cases there might even be penile shortening. A surgical approach to prevent this complication was reported recently [45]. Finally, the advancement skin flaps, when healed, might be unsightly and might result in the disfiguring advancement of suprapubic hairy skin onto the shaft of the penis [14]. It is relevant that in one series, of men with BDD who had this surgery, despite a mean increase in length of 1 cm, only 27% were satisfied and 54% requested further surgery.

The so-called 'Perovic procedure' involves penile disassembly, with dissection of the glans penis off the corpora cavernosa in continuity with the dorsal neurovascular bundle and the urethra [46]. A piece of costal cartilage is then sutured onto the distal corpora before the glans is replaced over the cartilage. This procedure should result in an

increase in both flaccid and erect penile length. It is clearly quite extensive surgery, and runs the risk of glans numbness due to damage to the neurovascular bundle. Short-term results were reported [46], with increases in length of 2–3 cm for both the flaccid and erect states. However, long-term results have not been reported, and given what is known about the tendency of devascularized rib cartilage to resorb with time [47], scepticism about the long-term outcome is inevitable.

Several techniques have concentrated on bulking of the subcutaneous fat with fat injections, free dermal fat flaps, or biodegradable materials. There are few reported results of such surgery in peer-reviewed reports, which is in itself a worry. One recent report of the early results of subcutaneous fat injections was promising, with increases in circumference of 1.4–4 cm reported [44], but studies with a longer term follow-up suggest disappointing results, with complications including disfigurement, scarring, lumpiness and infection [48,49]. One recent study reported the use of a biodegradable scaffold seeded with fibroblasts, that was formatted into a tube and wrapped around the degloved penis [43]. Although the authors operated on 204 men a follow-up was available for 84, with a mean follow-up of 24 months. The authors reported a mean increase in flaccid girth of 3.15 cm and a mean increase in erect girth of 2.47 cm; 81% of patients judged their satisfaction with the outcome of surgery as either excellent or very good. Recently a technique involving use of a groin fasciocutaneous flap was reported [50]. Another approach to penile girth enhancement was reported by Austoni [41] and involves the use of bilateral longitudinal saphenous vein grafts that are inlaid into the tunica albuginea along the penis. These grafts would be expected to allow expansion on penile erection, thereby increasing erect but not flaccid girth. Austoni reported that there was a minimal change in flaccid diameter, but that the erect diameter increased from 2.85 cm to 4.21 cm ($P < 0.01$). There is a theoretical risk of ED, as a proportion of men undergoing the 'Lue' procedure for Peyronie's disease develop *de novo* ED, although this was not reported. As yet there are no long-term surgical outcomes reported in peer-reviewed reports.

Several techniques to augment the glans penis were reported, including injection with hyaluronic acid gel [51] and placing fasciocutaneous flaps [46]. Robust data on the outcomes of such approaches are at present limited.

One final situation where surgery might be helpful is the case of a man with a genuinely small penis and ED, e.g. secondary to Peyronie's disease, previous failed penile implant surgery, or priapism. A technique was reported whereby there is simultaneous implantation of an inflatable penile implant while the tunica albuginea is inlaid with a series of circumferential saphenous vein grafts [52]. The results in a small series were promising, although verification is needed from other authors, and a longer follow-up would confirm the place of such operations. The reconstruction of deformities that might arise in men who have had augmentation surgery are reviewed elsewhere [53].

CONCLUSION

It is recommended that the initial approach to a man who has SPS is a thorough urological, psychosexual, psychological and psychiatric assessment that might involve more than one clinician. More research is required on the effects of race and age on penile length. Conservative approaches to therapy, based on education and self-awareness, as well as short-term structured psychotherapy (CBT) are often successful, and should be the initial interventions in all men. Of the physical treatments available, there is poorly documented evidence to support the use of penile extenders. More information is need on the outcomes with these devices. Similarly, there is emerging evidence about the place of surgery and there are now several reports suggesting that dividing the suspensory ligament can increase flaccid penile length. There are only limited data relating to operations designed to enhance penile circumference. While there are emerging data about the effect of surgical treatment on penile dimensions, there is much less information about the patients' satisfaction with the outcome of surgery. Such assessments have only been reported occasionally, and in a situation where surgery is used cosmetically to treat a psychological condition, such outcomes are vital to assess the place of such surgery.

CONFLICT OF INTEREST

None declared.

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Abbreviations: **SPS**, small penis syndrome; **BDD**, body dysmorphic disorder (dysmorphophobia); **ED**, erectile dysfunction; **CBT**, cognitive behavioural therapy; **SSRI**, selective serotonin reuptake inhibitor.