JOMH
Journal of Men's Health

Review

DOI: 10.31083/jomh.v16i4.214

RECENT UPDATES IN THE RIGHT DECISION AND MANAGEMENT OF "SMALL PENIS SYNDROME"

Hyun Cheol Jeong[1], Kyung Tae Ko[1], Dae Yul Yang[1], Seong Ho Lee[2], Won Ki Lee[3,*]

[1]Department of Urology, College of Medicine, Hallym University, Kangdong Sacred Heart Hospital, Seoul, Korea

[2]Department of Urology, College of Medicine, Hallym University, Dongtan Sacred Heart Hospital, Hwaseong, Korea

[3]Department of Urology, College of Medicine, Hallym University, Chuncheon Sacred Heart Hospital, Chuncheon, Korea

***Corresponding Author:** Won Ki Lee: rheewk@hanmail.net

Submitted: 24 December 2019. Accepted: 09 October 2020. Published: 05 November 2020.

ABSTRACT

Background and objective

Many men tend to desire a larger penis than women want because it symbolizes masculinity and sexual prowess. Micropenis is a normally developed penis with at least 2.5 standard deviations below the mean size in stretched length for age. Unlike micropenis, small penis syndrome (SPS) refers to uncomfortable feelings about one's penis size, even though penis size does not fall within the micropenis category. Some men seriously worry or feel ashamed of their penis size, and they may meet the diagnosis criteria of body dysmorphic disorder (BDD). Unlike micropenis, the differential diagnosis of BDD is very important, because it is associated with high rates of committing suicide. In particular, when combined with BDD, it is known that poor outcomes after cosmetic interventions are expected. Several validated assessment tools are available to differentiate SPS and the degree of BDD, but they are still controversial. Furthermore, many physicians are performing cosmetic interventions on patients who have not been fully assessed and counseled by a psychologist, thereby leading to unsatisfactory results. Therefore, we aimed to clarify the definition of disease for penis size and review its diagnosis and treatment. This will be helpful both for physicians to enable them to provide adequate counseling and treatment and for patients to help them avoid unsatisfactory treatment.

Keywords: *body dysmorphic disorder; penile augmentation; psychotherapy; small penis syndrome*

J Mens Health Vol 16(4):e121–e132; 05 November 2020

INTRODUCTION

Many men worldwide like the idea that "bigger is better." From childhood itself, the penis is treated as a symbol of masculinity and sexual prowess, and even as adults, men are bombarded with messages emphasizing penis size through various media. This perception is common globally. Interestingly, one survey found that more than 85% of women are satisfied with their partner's penis size; however, more than 50% of men want a longer and larger penis.[1–4] This phenomenon is widespread in people with medically normal penis size and is termed small penis syndrome (SPS; also known as small penis anxiety).[5,6]

Micropenis is a normally developed penis with at least 2.5 standard deviations (SD) below the mean size in stretched length for age.[7] Micropenis in adults defined as a penis with <7.5 cm in erect length or <4 cm in the flaccid state.[8] Unlike micropenis, SPS refers to feeling uncomfortable by thinking that one's penis is not in the normal size category although the penis size is not in the micropenis category.[5,6] Some men seriously worry or feel ashamed about this, and they may meet the diagnosis criteria of body dysmorphic disorder (BDD).[9] Patients with BDD tend to be highly obsessed with appearances that are barely visible or only slightly visible to others.[10,11]

In recent years, several diagnostic tools have been developed to differentiate between SPS and BDD.[12,13] However, a drawback of the current SPS treatment is that only a few people use professional urology, sexual therapy, or psychiatry services. Many other men are too ashamed to visit clinicians and tend to seek out black market dealers and illegal medical treatment. Surprisingly, many internet sites make it easy to access these unethical treatments and make unbelievable promises that promote the idea that "bigger is better." Furthermore, in the retrospective case series, BDD diagnosis was associated with a poor outcome in most cosmetic procedures.[14–17]

Many disorders associated with penis size are vague in diagnosis and ultimately difficult to treat, leading patients to seek other unethical medical therapy. Therefore, we aimed to clarify the definition of disease for penis size and review its diagnosis and treatment. This will be helpful both for physicians to enable them to provide adequate counseling and treatment and for patients to help them avoid unsatisfactory treatment.

DEFINITION

Small penis syndrome

Small penis syndrome refers to feeling anxious that one's penis is not in the normal size category.[18] Although it is conceptually different from BDD, Wylieand Eardley[18] described SPS as a part of BDD. However, in some recent studies, SPS was also defined as being anxious or dissatisfied with penis size but not meeting the diagnostic criteria for BDD.[6]

Micropenis

Micropenis is a normally developed penis with at least 2.5 SD below the mean size in stretched length for age.[7] The stretched penile size is closer to the erectile length than the flaccid penile size and should be compared with the standard (Figure 1).[19,20] In some literature on penile size, researchers defined micropenis as <7.5 cm in erect length or <4 cm in the flaccid state.[8]

Stretched penile size should be measured as the length from the penis's attachment to the pubic symphysis to the tip of the glans. For accurate measurement, suprapubic fat should be pressed before measuring. One must differentiate the buried penis or webbed penis from the micropenis.[21]

Body dysmorphic syndrome (penile dysmorphic syndrome)

Body dysmorphic disorder has long known in the field of psychiatry as a disorder of imagined ugliness.[22] BDD was first listed in the 1980s as

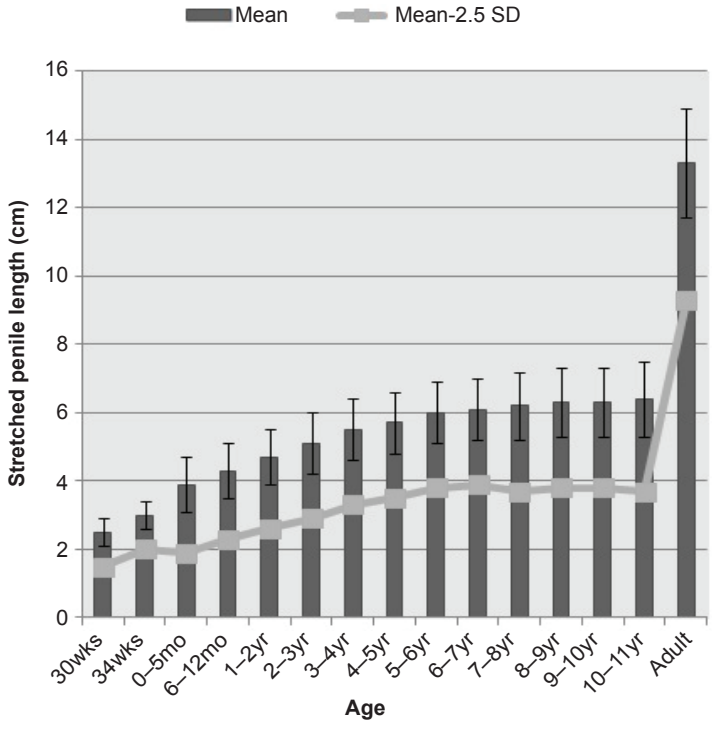

FIGURE 1 Normal growth and variation of penis from birth to maturity (Racial origin: Caucasian 82%, other 18%).

dysmorphophobia, one of the atypical somatoform disorders in the Diagnostic and Statistical Manual of Mental Disorders (DSM)-III. Recently, in DSM-V, BDD is defined as excessive preoccupation with physical appearance.[9] Unlike SPS, patients with BDD should be distinguished because severe stress can significantly affect their interpersonal, social, and occupational relationships. These patients show behaviors of hiding, correcting, or fixing the perceived defects.[11,23,24] They also try to avoid places, people, or situations that they think will evaluate their appearance. They also often develop major depressive disorders or have ideas about suicide.

Penile dysmorphic syndrome (PDD) describes men diagnosed with BDD in whom the size or shape of the penis is their main.[25]

PREVALENCE

Small penis syndrome

There are no studies that have directly investigated the prevalence of SPS. However, we could confirm the results indirectly through a survey. A large survey study of 25,594 men found that most men rated their penis as average (66%) and only 22% as large and 12% as small.[2] Of the men, 55% were satisfied with their penile length, 45% wanted a larger size, and only 0.2% wanted to be smaller. Interestingly, this trend is almost the same for all age groups, regardless of age.[2]

Body dysmorphic syndrome (penile dysmorphic syndrome)

According to a recent systematic review, the prevalence of BDD was estimated to be 1.9% in

the adult community sample,[26,27] and 5.8 to 7.4% in psychiatric settings.[28] This is quite smaller than the prevalence of SPS. The prevalence of BDD in psychiatric outpatients ranged from 1.8 to 6.7%,[24,29] and among inpatients, it ranged from 13.1 to 16.0%.[30,31] According to a survey related to BDD conducted in 2010 for the general population, the proportion of respondents who had concerns regarding their genitals was 1.1%.[32] Therefore, the prevalence of PDD in the general population is estimated to be approximately 0.02%.

ETIOLOGY

Small penis syndrome

The etiology of SPS is not currently well known. Some hypotheses have been known to arise from the early recognition of penis size from fathers and other men. It can also occur after a loss of a relationship with a sexual partner or after a malicious reaction by the partner during sexual activity. Impaired neurological development can also lead to misreading the sensation of the genital area and altering the perception of one's penis. Relevant psychiatric effects, including the effects of cognition and disgust through the amygdala and self-appearance through the prefrontal cortex, can be contributory factors, as may arise from envy.[18] In addition, sexual dysfunction and being overweight are also thought to contribute to SPS.[2]

Body dysmorphic syndrome (penile dysmorphic syndrome)

The diathesis-stress model of BDD suggests that BDD might be caused by interaction between environmental stressors and biological factors. In some twin studies, genetic factors accounted for about 40%, and the remaining 60% were due to other environmental status.[33,34] To date, BDD-specific genes have not been detected in genome studies. Furthermore, the environment that specifically affects the development of BDD is not yet fully known.

However, hypotheses about the environment affecting BDD development so far include childhood abuse, peer teasing, and peer victimization. Didie et al.[35] reported that 79% of patients with BDD experienced high levels of childhood abuse. In addition, some retrospective studies reported increased rates of abuse in patients with BDD compared with those in healthy men and patients with obsessive-compulsive disorder.[36–38]

Environmental impact as a risk factor for BDD is not yet fully understood, but understanding its role will greatly help in the prevention and psychological counseling of BDD.

ASSESSMENT

Normal penile size

To differentiate from micropenis, the penile size must be accurately measured.

Wesselss et al.[8] reported techniques for measuring penile length. First, the flaccid length is measured from the pubic bone to the tip of the glans, to the nearest 0.5 cm, in the dorsal decubitus, before any control. The glans are then stretched as much as possible and measured in the same way. Based on age, we can rule out micropenis by referring to the length as shown in Figure 1.

Differential diagnosis of BDD

Many studies on men complaining about their penis size found that these men had a normal size penis. Some men are simply misinformed, but others experience PDD.[39–41] PDD is part of BDD according to the *DSM-V*, as it is a condition marked by excessive preoccupation with an imaginary or minor defect in a facial feature or localized part of the body.[9] When SPS is accompanied by PDD, treatment response may be different from standard SPS; hence, sufficient assessment is required before any management begins.

The criteria for BDD in the *DSM-V* consist of the four features classified as obsessive-compulsive and related disorders (Table 1).[9]

TABLE 1 The Criteria for Body Dysmorphic Disorder in the Diagnostic and Statistical Manual of Mental Disorders – (DSM)-V

Number	Comments
A	Preoccupation with one or more perceived defects or flaws in physical appearance that are not observable or appear slightly to others.
B	At some point during the course of the disorder, the individual has performed repetitive behaviors (e.g., mirror checking, excessive grooming, skin picking, reassurance seeking) or mental acts (e.g., comparing his or her appearance with that of others) in response to the appearance concerns.
C	The preoccupation causes clinically significant distress or impairment in social, occupational, or other areas of functioning.
D	The preoccupation with appearance is not better explained by concerns with body fat or weight in an individual whose symptoms meet diagnostic criteria for an eating disorder.
	The individual must be preoccupied with one or more nonexistent or slight defects or flaws in their physical appearance. Preoccupation refers to thinking about their perceived defects at least 1 h in total per day. Defects that are easily visible or detectable by anyone are not defined in BDD.

The diagnosis of BDD requires repetitive and compulsive behavior during the disease. These can be behavioral (mirror checking, skin picking, reassurance seeking, excessive grooming, or clothes changing) and can be other mental acts.

Body dysmorphic disorder must cause clinically significant social or occupational distress or impairment. This is an important criterion for distinguishing BDD that requires treatment from simply worrying about one's appearance without the need for medical treatment.[9]

The patient must meet all these criteria to be diagnosed to have BDD.

Beliefs about Penis Size (BAPS)

Veale et al.[42] first published and validated Beliefs about Penis Size (BAPS), a scale questionnaire to evaluate SPS. BAPS is an 10-item questionnaire that measures the respondent's beliefs about masculinity and shame about penile length (Table 2). Two of its items measure internal self-evaluative beliefs. Three items are questions on a social cognitive component with predictions, and four items in the literature on the shame of small

TABLE 2 Beliefs about Penis Size **(**BAPS) Questionnaire.

Number	Question	Score
1	I will be alone and without a partner.	0–4
2	I will be laughed at by a partner in a sexual situation.	0–4
3	I will not be able to have children.	0–4
4	I will never feel just "right."	0–4
5	I will not be able to be naked in front of other men (e.g., in changing rooms or the bedroom).	0–4
6	I will not be able to be naked in front of women.	0–4
7	Others will talk or laugh about my penis.	0-–4
8	Others will be able to see the size or shape of my penis even when I have my trousers on.	0–4
9	I will feel self-conscious in sexual situations.	0–4
10	I will feel abnormal.	0–4

penis size. Lastly, there are two items on extreme self-consciousness.

The patient evaluates how much he agrees or disagrees with each statement using a 5-point Likert-type scale that ranges from 0 to 4. A higher score represents a greater level of insecurity and shame about penis size.

Cosmetic Procedure Screening Scale for PDD (COPS-P)

The Cosmetic Procedure Screening Scale for PDD (COPS-P) is a questionnaire designed to screen for BDD. COPS-P is a 9-item questionnaire created by modifying the original COPS questionnaire for general appearance.[43] Veale et al. modified the statements in the questionnaire to focus on the penis (Table 3). The patient evaluates how much he agrees or disagrees with each statement using a Likert-type scale that ranges from 0 to 8. The higher the score, the closer the patient is to a PDD diagnosis, as the questionnaire reflects the respondent's preconceptions and pain of penile length and appearance.

These questionnaires are helpful to screen or diagnose SPS. They may also be helpful in the treatment decision, but validation has not yet been established to predict the effectiveness of treatments.

TREATMENTS

The preferred treatment of SPS includes sexual education and psychotherapy. Nonpsychotherapy should be considered as secondary treatment and only in the event of a lack of effectiveness or the case of primary care failure, and it should be used with caution.

Psychological treatment

Sexual education

Because patients are usually misinformed or lack information, before commencing full psychotherapy, they should be educated on the normal

TABLE 3 Cosmetic Procedure Screening Scale for PDD (COPS-P) Questionnaire.

Number	Question	Score
1	To what extent do you feel the size or appearance of your penis is defective or unattractive?	0–8
2	To what extent does the size or appearance of your penis **currently** cause you distress?	0–8
3	How often does the size or appearance of your penis **currently** lead you to avoid situations or activities?	0–8
4	To what extent does thinking about the size or appearance of your penis **currently** preoccupy you? That is, you think about it a lot and it is hard to stop thinking about it.	0–8
5	If you have a regular partner, to what extent do your concerns about the size or appearance of your penis currently have an effect on an existing sexual relationship? (e.g., enjoyment of sex, frequency of sexual activity). If you do not have a regular partner, to what extent do your concerns about your penis currently stop you from developing a sexual relationship?	0–8
6	How much do your concerns about the size or appearance of your penis currently interfere with your ability to work or study? (Please rate this even if you are not working or studying: we are **interested in your ability to work or study**).	0–8
7	To what extent do your concerns about the size or appearance of your penis currently interfere with your social life? (with other people, e.g., going to parties, pubs, clubs, outings, visits)	0–8
8	To what extent do your concerns about the size or appearance of your penis currently interfere with leisure activities? (e.g., being in a public changing room).	0–8
9	How much do you feel the size or appearance of your penis is the most important aspect of who you are?	0–8

variation in penis size and made to understand that their penis size is in the normal range. This education is usually conducted by andrologists using simple models, illustration drawings, and documentation according to guidelines[40] (Table 4).

Psychogenic treatment

Psychotherapy plays an important role in treating SPS and BDD. Cognitive-behavioral therapy (CBT) can build confidence and help patients respond to negative thoughts so that they can cope with the anxiety of thinking about penile length regardless of penis size.

The CBT process for BDD treatment consists of psychoeducation, motivational enhancement, cognitive restructuring, in vivo exposures and response prevention, perceptual mirror retraining, and relapse prevention.[44,45]

Psychoeducation begins with the therapist describing the individual CBT model and educating the patient about the factors that influence the development of each disease. The main content of education is to evaluate the accuracy of maladaptive thoughts, working toward developing more adaptive beliefs and including behavioral therapies such as exposure and response prevention. During the behavioral therapy, patients face situations that make them anxious without engaging in ritualistic responses. Perceptual and mirror retraining helps patients to view their appearance more objectively. The final sessions of the CBT consist of maintaining long-term outcomes and preventing recurrence for patients.

Ghanem et al.[46] also developed and presented a protocol as a consultation tool for patients complaining of a small penis, and they reported the results of 250 patients. The protocol consists of four phases, including "initial meeting," "explain the facts," "advise about the true option," and "conclusion of the consultation." After consulting SPS patients using their structured protocol, only nine patients (3.6%) reported finding additional cosmetic therapy.[46]

TABLE 4 The Guidelines for Sexual Education for Small Penis Syndrome.

Number	Comments
1	Provide simplified anatomy of male and female genitalia. An illustrated image is shown to the patient, highlighting the size of the penis and vagina.
2	Provide education on the relationship between penile size and sexual power and satisfaction. The most important factor affecting their partner's satisfaction during sexual intercourse is a rigid erect penis for sufficient time with thrusting vaginal movements. For simplification and from a dimensional approach, patients are informed that an extra length of the penis longer than the vaginal length is outside the partner's body during sexual intercourse. All patients should have information on how to measure their penile size.
3	After all training, patients are consulted for their endocrine profile, body imaging, and chromosomal assay.

Nonpsychological treatment

There are several options for patients who are unsatisfied with the aforementioned nonsurgical treatment and who want surgery. Some surgeries can only increase the flaccid penile length, while others can increase the erectile length also. Similarly, some surgeries increase only the erectile girth, and others increase the flaccid also.

Physical treatment (penile extender)

The results of the two studies reported that the extender was used 4 to 9 h a day for 3 to 6 months.[47,48] As a result, there was a statistically significant increase in both flaccid penile length and erectile penile length. Both studies showed less than a 2-cm increase in flaccid and erectile penile lengths during the study period, and there was no difference in girth size. One study did not report a particular adverse event, but the second reported that 11.1% of patients had discontinued the extender during the study because of pain, numbness, or bruising.

Penile injection

One of the most important treatments in the area of girth enhancement rather than penile length is a penile subcutaneous injection. Many types of fillers have been developed by medical researchers for penile injection including autologous fat, silicone, collagen, hyaluronic acid (HA), polylactic acid (PLA), and polymethylmethacrylate.[49–56]

Hyaluronic acid is a long-lasting, self-absorbing dermal filler that has proven relatively safe.[50] According to a report of 41 patients with HA for penile augmentation, an average of 20.56 mL of injection was performed, and the mid-shaft penile circumference was 7.48 ± 0.35 cm, 11.4 ± 0.34 cm after 1 month, and 11.26 ± 0.3 cm after 18 months.[52] All patients had good girth enhancement for up to 18 months, but their satisfaction decreased statistically. There were no severe adverse events and no cases requiring additional procedures.

Polylactic acid is another commonly used soft-tissue filler.[50,51] A study of 23 patients with SPS reported that PLA maintained penile girth enhancement up to 18 months and had no severe adverse events.[54] Penile injection is now a very popular treatment, as there are many recent reports that compare these fillers. Yang et al.[56] reported an Randomized Clinical Trial (RCT) comparing HA and PLA in SPS patients. After 4 weeks, HA showed a statistically greater increased girth enhancement than PLA, but after 48 weeks, no statistically significant difference was observed between the two groups, and there was also no difference in satisfaction. Both fillers did not have severe adverse events during the study.

Suspensory ligament incision (SLI)

Suspensory ligament incision (SLI) is one of the most commonly used operations to increase only flaccid penile length. This increases the flaccid penile length by separating the corpus cavernosum from the pubis.[39,57,58]

Some studies about SLI reported an increase in the flaccid penile length of about 1.5 to 3.45 cm. However, a potential problem after surgery is that the erect penis is relatively downward when standing before surgery. In some cases, atrophy or adhesion of the surgical site may cause complications that do not increase or decrease the length.

Autologous tissue grafting

Many autologous injections have been developed for penile tissue grafts including fat injections, free dermal fat flaps, or autologous ex vivo tissue engineering on the scaffold.

The autologous fat injection has been used for decades in many body areas besides the penis for cosmetic purposes. The procedure consists of liposuction, fat harvest, fat preparation, and subcutaneous injection. Panfilov[59] reported the results of penile augmentation using an autologous fat injection in 88 patients. The average girth enhancement of 2.65 cm was achieved using 40 to 68 mL of fat, which persisted at 60% to 80% after 1 year. The complication rate was reported at 2.3%, and only one patient needed an additional procedure.

Flaps

Shaeer et al.[60,61] reported a technique involving the use of a groin fasciocutaneous and superficial circumflex iliac flaps. In another approach, Austoni et al.[58] applied bilateral longitudinal saphenous vein grafts to longitudinal openings made bilaterally in the albuginea along the whole length of the penis. This can enhance the girth during erection but not the girth during the flaccid state. Penile edema was the most common complication, and flap debulking, scarring, decrease in penile length, skin necrosis, and infection were also reported. Most patients were satisfied with this procedure, except for those who were dissatisfied with insufficient penile length and girth size.

CONCLUSIONS

Small penis syndrome is a more common phenomenon than we think and is sometimes accompanied by BDD. Many men desire a larger penis size

than many women want because it symbolizes masculinity and sexual prowess.

Micropenis, SPS, and BDD are different diseases that require accurate differentiation for proper treatment. In particular, when combined with BDD, it is known that BDD is associated with high rates of suicide ideation and suicide itself. Besides, only relatively small clinical reports have been published to date in the therapeutic literature, each using different methodologies, which require careful interpretation.

Several validated assessment tools have already been developed to differentiate SPS and degree of BDD, such as BAPS, COPS-P, and the DSM. However, an exact diagnostic tool for SPS remains controversial. Psychotherapy should be preferred as a treatment, and non-psychogenic treatment can be carefully considered if the effect of psychotherapy is insufficient or has failed. A good understanding and correct differential diagnosis of SPS, BDD, and accurate psychological counseling are the primary treatment. The accurate diagnosis provides a better outcome and possibly more satisfactory results.

CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest.

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