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# Adolescent male genitalia dissatisfaction: a surgical perspective

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Genital dissatisfaction is well known in female and adults. Less is known about male adolescents and their genital satisfaction. The aim of this study was to investigate and report the role of surgery in male adolescents to improve the evaluation of their genitalia. We considered all patients treated for external genital pathology in the period of adolescence. Inclusion and exclusion criteria were created. Patients underwent an evaluation test before and after surgery. During the study period, 137 patients were treated, and at the end of the study, 98 cases were considered for analysis. The most frequent pathologies were webbed penis and penile curvature. A postoperative score improvement was noted and patients with concealed penis and webbed penis showed a better postoperative outcome. Overweight was considered an important factor associated with a worse preoperative score. Evaluation of the external genitalia is important in adolescents, and it is an understudied problem. Overweight may be associated with a worse evaluation of one's genital and should be clinically considered to avoid related social problems in adulthood. Therefore, cosmetic genital surgery should be considered even in male adolescents.

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## INTRODUCTION

Adolescence is a critical and unique phase in an individual's life and it is characterized by significant physical and psychosocial changes; in fact, puberty and physical development can characterize a change in body image as perceived by each individual. Body image formation is critical during adolescence, and it is an important aspect of adulthood. With respect to body image and thus body satisfaction, the genital aspects in male adolescents are less studied compared with those in female adolescents. Body image can be modulated by different aspects of social media; adolescents have access to information on the Internet that can give a distorted view of normality and they are often bombarded with increasingly extreme images.<sup>6–12</sup>

It is reported by some studies that older age, male gender, and lower body mass index (BMI) are associated with better body esteem in adolescents. Nowadays, body image is considered to be a construct composed of different dimensions. For example, the perception that each adolescent has of his own body depends on many factors, both cognitive and relational. What is well known is that body image and thus body dissatisfaction is associated with depression, eating disorders, anxiety, and different sexual behavior. The presence of body dissatisfaction can lead to social isolation, and on the other hand, body satisfaction can have several effects such as a better approach to food. People with a focus on body satisfaction are less likely to be obese or overweight and tend to have a better mental state as adults. Strangely, in the medical literature, there are many studies on the perception of external genitalia in females and very few studies on the perception of male external genitalia.<sup>9,10</sup> What is known is that males who have a

higher body dissatisfaction report more depression and social isolation than females. Adolescents' perceptions of their body image rest on some psychosocial concepts: the social idea of the ideal body and everyday comparison among people.<sup>13–19</sup>

What is relatively better known is the perception of body image and sexual satisfaction in women undergoing female genital plastic/cosmetic surgery; however, men are also fans of esthetic interventions. More than 8000 penis enlargement procedures take place annually worldwide as stated by the International Society of Aesthetic Plastic Surgery (available at <http://www.isaps.org>, 8434 procedures reported in 2019). Regardless of why patients choose to undergo one of these procedures, their degree of success is, to a large extent, also determined by how satisfied they are with the final result. In this respect, there seems to be a sizeable gap between the response of men and that of women. Research has shown that ladies who opt for one of the more common types of genital cosmetic surgeries such as labiaplasty are generally pleased with the results. On the other hand, it is well known that men are much less satisfied than women. Thus, baseline expectations are key to how satisfied someone will be after undergoing their genital cosmetic surgery, and this may have something to do with why men are, on average, not nearly as satisfied with their penis enhancement procedures as women with their genital cosmetic surgeries.

Surprisingly, according to some authors, more men than women choose genital cosmetic surgery, specifically penile enhancement, but it is also likelier that they will be unhappy with the results. Researchers show that men have very low satisfaction rates after surgery, and this may all come down to particularly unrealistic expectations. As reported

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in literature, only 35% of the patients were satisfied with the outcome of surgery.<sup>20</sup>

For the reasons listed above, the aim of the study was to report our experience regarding genital dissatisfaction in adolescents undergoing surgery for external genital malformation. Subjects were evaluated before and after surgery using a subjective scoring system.

## PATIENTS AND METHODS

A longitudinal study was done at Woman and Child Hospital, Pediatric Surgical Unit (Verona, Italy) between September 2018 and September 2020. All patients who were being treated for andrological diseases and who demonstrated dissatisfaction about their genitals joined the study. Oral and written consent was obtained from patients and parents. The internal review board of the Paediatric Fertility Lab (University of Verona, Verona, Italy) approved the study (07/2020PFL). Inclusion criteria were created: patients with Tanner stage V, age range between 15 years and 17 years, genital appearance dissatisfaction, no previous surgery, and no endocrinological disorder.

We consider the following as exclusion criteria: patients with phimosis, patients with hypospadias or hypospadias-related complications (residual chordee, penile curvature, and urethral fistula), patients with genital trauma, and patients with tight penile frenulum.

Patients underwent an andrological examination including testicular measure, penis examination, and genital skin inspection, preceded by a brief interview on their genital dissatisfaction. Tanner staging was assessed before surgery by an experienced andrologist. BMI was calculated based on the usual formula (person's weight in kilograms divided by the square of height in meters); overweight was defined as BMI of 25 kg m<sup>-2</sup> or more but <30 kg m<sup>-2</sup>.

Participants were asked to indicate their dissatisfaction about their genitals using a 5-point modified Likert-type rating scale (1: very dissatisfied, 2: slightly satisfied, 3: neutral satisfied, 4: very satisfied, and 5: extremely satisfied). Pre- and post-surgical evaluations were recorded. All patients were treated by the same surgeon who has long years of experience in genital esthetic reconstruction (both male and female genital reconstruction).

Patients underwent a control visit after surgery (3 months) and had to complete the second scoring test (postoperation value).

### Statistical analyses

The objective clinical status and the subjective genital appearance score were correlated. One of the endpoints was to highlight the improvement of genital appearance score after surgery and eventual correlation with the first diagnosis. As for statistical analysis, differences between quantitative variables were assessed by the Mann-Whitney U test, while differences between categorical variable proportions were established by the Fisher's exact test. Logistic regression analysis was used in order to estimate the association among the variables predictive for body satisfaction.

Several tests were used for statistical analysis: Student's *t*-test for paired and unpaired data and Chi-square test using SPSS version 16.0 for Windows (SPSS Inc., Chicago, IL, USA); *P* < 0.05 was considered statistically significant.

## RESULTS

During the study period, 137 patients were observed for andrological genital disorders. After reviewing medical charts, 39 patients were excluded: 25 (18.2%) patients were lost during follow-up (after surgery or during the standard visit), 4 (2.9%) patients underwent a second

surgical procedure within 3 months, and 10 (7.3%) patients were >18 years old and decided to exit the study and follow-up.

As a result, 98 patients were studied. The median age was 16.2 (range: 15–17) years. The median height was 164.9 (range: 143.6–181.3) cm and median weight was 53.2 (range: 43.1–99.3) kg.

Among these subjects, it was interesting to know that 73 (74.5%) patients asked their parents for a surgical visit, while 25 cases were initiated by parents who asked for a genital inspection for their adolescent children (suspected genital abnormalities).

The genital inspection revealed that 39 patients (39.8%) were affected by penile curvature, 41 (41.8%) were affected by webbed penis, 7 (7.1%) patients were affected by foreskin defect (megaprepuce or cryptohypospadias), and 11 (11.2%) patients were affected by concealed penis. All patients had normal testicular volume. It was interesting to add new information about the genital appearance and BMI: higher value of BMI >28.5 kg m<sup>-2</sup> was associated with concealed penis (8 out of 11 patients, 72.7%; *P* < 0.05), and among patients, higher BMI >27.8 kg m<sup>-2</sup> was associated with smaller testicular volume (<15 ml; *P* < 0.05).

Sociodemographic, medical, and psychological characteristics of participating patients are reported in **Table 1**. Among genital dissatisfaction (GD) score before surgery, 56 (57.1%) subjects reported score 1; 31 (31.6%) reported score 2; the other 11 (11.2%) patients reported scores 3 and 4, and no one had score 5. All patients with a webbed penis had a score 1 (*P* < 0.05).

In univariate analysis, older age (>16 years), higher BMI >26.8 kg m<sup>-2</sup>, lateral penile curvature, and concealed penis resulted in significant GD (*P* < 0.05). Interestingly, based on a logistic regression analysis, the only variables independently associated with GD remained BMI (or overweight). Postoperative score evaluation showed a substantial reduction in score 1 with a significant general improvement (*P* < 0.05).

Through the evaluation of various scores, it was possible to assess that the mean ± standard deviation (s.d.) of score was 1.4 ± 0.5 preoperatively and 2.9 ± 1.1 postoperatively (*P* < 0.05).

**Table 1: Sociodemographic, medical, and surgical score**

Characteristic	Values (total=98)	<i>P</i>
Age at surgery (year), median (range)	16.2 (15–17)	
Educational level		
High school, <i>n</i> (%)	98 (100)	
Partner, <i>n</i> (%)		
Absent	92 (93.8)	
Present	6 (6.1)	
Webbed penis, <i>n</i> (%)	41 (41.8)	
Penile curvature, <i>n</i> (%)	39 (39.7)	
Concealed penis, <i>n</i> (%)	11 (11.2)	
Foreskin defect, <i>n</i> (%)	7 (7.1)	
Megaprepuce	3 (42.8)	
Cryptohypospadias	4 (57.2)	
Height (cm), mean (range)	164.9 (143.6–181.3)	
Weight (kg), mean (range)	53.2 (43.1–99.3)	
BMI (kg m <sup>-2</sup> ), mean±s.d. (range)	21.2±1.9 (19–29)	
Overweight (>25 kg m <sup>-2</sup> ), <i>n</i> (%)	29 (29.5)	
Genital dissatisfaction, preoperation vs postoperation		
Score 1, <i>n</i> (%)	56 (57) vs 13 (13.2)	0.003*
Score 2, <i>n</i> (%)	31 (31.6) vs 9 (9.1)	0.021*
Score 3, <i>n</i> (%)	8 (8.1) vs 7 (7.1)	0.536
Score 4, <i>n</i> (%)	3 (3) vs 32 (32.2)	0.049*
Score 5, <i>n</i> (%)	0 (0) vs 37 (37.2)	0.001*

\**P*<0.05, statistically significant. BMI: body mass index; s.d.: standard deviation



Ninety-eight patients reported post operative evaluations as scores 1–5. None of the patients reported a worse score compared with the preoperative one.

It was possible to establish a significant correlation between postoperative scoring and genital diseases: those having a great scoring improvement were affected by concealed penis (mean  $\pm$  s.d.:  $1.4 \pm 0.3$  [preoperation] vs  $3.6 \pm 0.6$  [postoperation];  $P < 0.05$ ).

Among patients with penile curvature, those patients having lateral curvature had a greater postoperative scoring improvement than those having ventral curvature ( $P < 0.05$ ).

Nevertheless, among those patients still having a postoperative score 1, it was possible to observe a correlation with overweight: overweight was associated with lower pre- and postoperative scores (mean  $\pm$  s.d.:  $1.2 \pm 0.4$  vs  $2.1 \pm 0.4$ ;  $P > 0.05$ ).

## DISCUSSION

Body image and appearance have become a subject of study in recent years. In fact, it is shown that over 80% of the publications on the topic have been published since 2000. The subject has always been associated with very important social aspects such as weight, overweight, eating disorders, sexual relationships, and family relationships. Adolescence is a critical period for body image development because of the various social, cultural, physical, and psychological changes occurring between the ages of 12 years and 18 years.<sup>1–19</sup>

Adolescence is a time of difficult transition and maturation towards adulthood. In recent decades, our society has experienced several developments directly related to sexuality. Changes in the context and the consequent change in values have influenced the lives and experiences of adolescents. Nowadays, adolescents have easier access to and more consumption of sexual products than previous generations.

Body image has been identified as a primary means through which self-objectification produces such undesirable health sequelae. Body image is a multidimensional construct used relationally to affective, cognitive, and behavioral aspects of an individual's reaction to his or her perceived physical being.

Genital appearance has been found to be of concern to both men and women. Compared with males, female patients visit physicians often with concerns about the appearance of their external genitalia. These patients might experience significant distress about their genital appearance and might request surgery to correct a perceived abnormality. In recent years, as described by many reports, the prevalence of labiaplasty is increasing in women of all ages.<sup>20–22</sup>

What is known in adult males is that penis size is a physical feature that has been found to cause concern for both gay and heterosexual men. Both express a desire for a larger penis or different genital appearance.<sup>19,23,24</sup>

There are perhaps two important aspects to consider about genital self-perceptions: the first is the image of one's own genitals and the second is the image of genitals in relation to the expectations of the partner. However, it is not clear how much these two aspects can really affect psychological and sexual maturation.

The body changes linked to puberty are experienced by young people as natural events, characteristic of a normal course of development, an object of interest and reason for enthusiasm, and very rarely a cause of difficulty and discomfort. However, it has been shown that females experience these changes with greater naturalness and curiosity, but also with greater discomfort than their peers. The geographical area of origin and the sociocultural context of reference

do not seem to influence the way body changes are perceived and experienced.<sup>16,20</sup>

When development proceeds normally, the adolescent must confront a disturbing and extraneous body that threatens his sense of familiarity with himself and his continuity of identity. The new genital body, of man or woman, is initially experienced as belonging to the self and at the same time external to the self in a frontier dimension between being and having. As we know, the anatomical body does not necessarily coincide with the representation – conscious and unconscious – of the body. It takes a psychological work of symbolic reorganization, which involves a reworking of both the body image and the body as an internal object (itself built on an amalgam of sensations, perceptions, and fantasies) for the adolescent to become familiar with his sexed body, transforming the organic body into a somatopsychic one, endowed with a subjective sense. It is only gradually that the psyche comes to terms with the body and that, under healthy conditions, the boundaries of the body come to coincide with those of the psyche. However, in the development of the genitals and the process of acceptance, many factors can influence the proper pubertal development.<sup>25</sup>

Overweight and a higher BMI seem to play an important role in body satisfaction. If the reconstruction of the genitals has shown a better score on genital satisfaction, it is necessary to specify and motivate a surgical intervention to an adolescent, above all for esthetic-functional reasons, and this is not always easy to propose. Therefore, explaining the effects of a genital reconstruction when sexual activity has probably not yet begun cannot help the adolescent understand the real necessity of such a reconstruction.

Even if our results reported some interesting data, this study has several limitations: (i) some assessments were performed during the lockdown and, perhaps, the negative and prolonged effect of quarantine in a period without school led to a more negative rating on the preoperative score; (ii) the absence of physical activity may have contributed, as with the absence of school, to a worsening of physical appearance with significant weight gain and depression; (iii) we probably selected the most evident genital alterations; however, even nonsurgical andrological problems (premature ejaculation, erectile dysfunction, and anxiety), which seem to have increased especially during 2020, might have worsened the esthetic evaluation of genitalia not previously reported (reduced penis size, short preputial frenulum, and curvature during erection); (iv) patients were evaluated and enrolled because they presented spontaneously, so we do not know the real rate of genital discomfort in adolescents of the same age; (v) some patients joined the study upon their parents' suggestion and not spontaneously; (vi) the differentiation between a pure genital esthetic problem and a generalized problem of physical appearance is not easy, thus understanding which aspect is more predominant in adolescent evaluation could be another limitation of this study, and, finally, (vii) postoperative evaluation with longer follow-up could modify wound healing, or physical change in general, for example, weight loss could improve esthetic satisfaction.

The strength of this study is that it is the first in literature reporting and assessing male external genitalia satisfaction after surgical reconstruction.

## CONCLUSIONS

The lack of attention to adolescent male sexual health and body image is not surprising and this should be stressed. The esthetic aspect of the genitalia in adolescent males must be considered and investigated more often, especially to avoid psychological problems during adulthood.<sup>26</sup>

The esthetic self-evaluation of the external genitalia hides a true correlation between subjective evaluation (buried penis in overweight) and surgical evaluation (real covered penis).

Consequences associated with having a negative body image for adolescents include physical activity avoidance, eating disorders, and dysfunctional exercise. The promotion of healthy body image should be integrated across all interventions aimed to address obesity, eating disorders, and other health-related concerns among adolescents.

This study, despite being based on a small number of cases and being a single-center survey,<sup>27,28</sup> has shown that even adolescents have an interest in the appearance of their external genitalia. Surgical reconstruction, objectively motivated and correctly performed, allows a significant increase in the score of appreciation of their genitals. This study shows that, even in selected patients, the appearance of external genitalia in adolescents is an important aspect to be investigated in order to avoid problems in adulthood.

#### AUTHOR CONTRIBUTIONS

NZ and ID contributed to conceptualization, data curation, analysis, and writing. FSC reviewed the manuscript. All authors have read and approved the final manuscript and agreed with the order of presentation of the authors.

#### COMPETING INTERESTS

All authors declared no competing interests.

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