



Open Access

LETTER TO THE EDITOR

Operational Andrology

Surgical management of hypogonadic patients with hypotrophic testicles and small penis: a novel, combined technique with an infrapubic approach

Massimiliano Timpano¹, Marco Falcone¹, Franklin Kuehhas², Carlo Ceruti¹, Omid Sedigh¹, Marco Oderda¹, Paolo Gontero¹, Bruno Frea¹, Luigi Rolle¹

Asian Journal of Andrology (2016) 18, 143–144; doi: 10.4103/1008-682X.145431; published online: 10 March 2015

Dear Editor,

We have recently developed a novel surgical approach for the management of bilateral testicular hypotrophy, allowing both the preservation of gonadic function and some penile lengthening: aim of this letter is to describe our surgical technique, reporting the first two cases treated with this approach.

Both patients were affected by nonmosaic Klinefelter syndrome, presenting with infertility, severe testicular hypotrophy and small penile size: the main patient characteristics are shown in **Table 1**. They severely complained about their scrotal appearance and small penile size: their discomfort was such that body dysmorphic disorder (BDD) was diagnosed after psychiatric evaluation. Both patients required a procedure able to restore a satisfying scrotal appearance and to achieve an acceptable penile length, while allowing a bilateral microdissection testicular sperm extraction (micro-TeSE), all through a single surgical incision.

A V-shaped inverted suprapubic incision was performed, followed by an incision of the Scarpa's fascia proximal to the penopubic junction. The suspensor ligament of the penis was then isolated transversally incised and detached from the periosteum of the pubis bone. The spermatic chords were isolated bilaterally. The gonads were bilaterally externalized from the scrotum after incision of the gubernaculum testis on both sides. A micro-TeSE was bilaterally performed, together with testicular biopsy for histological evaluation. The right gonad was then mobilized and transferred to the contralateral hemiscrotum through the infrapubic incision, leaving in place the scrotal septum. In the right hemiscrotum, left empty, we placed medium-sized testicular prosthesis (20 cc). Finally, a V-Y skin plasty with an aesthetic running intradermal suture was performed (**Figure 1**).

Mean operative time was 95 min. No intraoperative or postoperative complications were recorded. At follow-up visits scheduled at 1 week, 6 months and 1 year after surgery, both patients were satisfied with the cosmetic appearance of the scrotum: the placement of both testicles in the left hemiscrotum did not impair their blood supply, as demonstrated

by the Color Doppler ultrasound. The endocrinological testicular function was preserved. Unfortunately, both patients were diagnosed with complete azoospermia with histological tubular sclerothyalinosis. The postoperative stretched penile measurement demonstrated a real penile lengthening of 1.5 cm in both cases, which was found acceptable by both patients. As for subjective aesthetic outcomes, both patients said to be completely satisfied with surgery outcomes, reporting a gain in self-confidence. A psychiatric evaluation, conducted 4 months postoperatively, described an improvement in body self-perception thanks to the encouraging cosmetic results of the procedure. Testicular hypotrophy is a rare condition that typically affects young patients, with strong psychological repercussions. Main causes are genetic disorders, such as Klinefelter or Kallmann syndrome.¹ BDD is a disorder which further impairs the quality of life of these already frail patients, and must not be underestimated.² Therefore, surgeries aiming to restore an acceptable body image at the cost of minimal morbidity are very important in this category of patients.

Ugarte y Romano and González Serrano³ recently reported a new surgical approach using chin implants for testicular augmentation. In their case report, a single inguinal approach was used to manage a monolateral testicular hypotrophy. According to this technique, our patients would have required a bilateral inguinal incision. Moreover, the concomitant presence of the testicle and chin prosthesis in the hemiscrotum might lead to an increased risk of infection and testicular damage. In addition, there is a risk of nontolerability of the prosthetic device.⁴ Finally, our patients, affected by bilateral hypotrophy, would have required two prostheses, with higher costs of the procedure.

Ferro *et al.*⁵ suggested an innovative approach in two young patients affected by Kallmann syndrome, which involved testicular transposition through the septum with a single testicular prosthesis implantation in the hemiscrotum left empty. In our opinion, testicular transposition via a scrotal approach presents the risk of torsion or compression of the cord of the mobilized testis during the passage through the scrotal septum. Moreover, leaving a communication between the two hemiscrotums can increase the risk of infection and testicular damage. All these problems are overcome in our novel approach, performed through a V-inverted suprapubic incision, which leaves intact the scrotal septum and creates no communication between the two hemiscrotums. Moreover, our technique allows the

¹Department of Urology, University of Turin, Città della Salute e della Scienza, Turin 10100, Italy; ²Department of Urology, Medical University of Vienna, Vienna 1010, Austria.

Correspondence: Dr. M Falcone (marcofalcone1986@gmail.com)

Received: 12 August 2014; Revised: 29 September 2014;

Accepted: 04 November 2014

Table 1: Patient characteristics

	Patient 1	Patient 2	Reference range
Age (year)	21	29	-
Testicular volume (ml)	5	4	12–24
Penile stretched length (cm)	8	7.5	>7.5
LH (mUI l ⁻¹)	8.2	5.4	1.8–8.6
FSH (mUI l ⁻¹)	18	22	5–20
Testosterone (ng ml ⁻¹)	2.9	3.4	2.5–9.5

LH: luteinizing hormone; FSH: follicle-stimulating hormone

contemporary incision of the suspensor ligaments of the penis and the creation of a V-Y skin flap, with a satisfactory penile lengthening.

The debate about the benefits of penile lengthening procedure in patients with “short penis” is still ongoing: some question that penile length is normal in most of these men who tend to overestimate normal phallic dimensions and do not need any surgical procedure.⁶ Furthermore, surgical procedures of lengthening phalloplasty remain a controversial issue.^{7,8} This feature is complicated by a lack of universally accepted parameters for normal penile size evaluation. According to Wessells *et al.*⁹ normal penile dimensions should be considered to be any length within 2 standard deviations of the mean, that is >4 cm for the flaccid state and >7.5 cm for the stretched state. We can say that BDD diagnosed in our patients was not a purely psychiatric issue, as both patients had penile measurements at the lowest limits of normality. We think that in this case, a surgical correction can be helpful to restore both a normal anatomy and an acceptable body image. Penile lengthening procedures can improve patient self-esteem in dysmorphic patients even if the length gain is not up to patient expectations.¹⁰ As for penile lengthening, our approach follows surgical techniques already well-known and effective:⁷ the real strength resides in the possibility of performing different procedures with the same, small incision, limiting the morbidity of the procedure.

In summary, our novel combined technique has shown to be safe and effective: we believe that it represents a good way to contemporarily treat different problems and it is surely a good option in a complex setting of patients such as the hypogonadic Klinefelter ones. These promising results obviously need to be confirmed in a bigger series of patients, but we believe to have found a good strategy to address at the same time two major problems—testicular hypotrophy and short penis—which affect a considerable number of patients, especially with genetic disorders.

AUTHOR CONTRIBUTIONS

MT and MF carried out the surgery. Notwithstanding they participated to the acquisition of data, the analysis and the interpretation of data. They were involved in drafting and revising the manuscript. FK, CC, OS and MO participated to conception of the study and to the revision of the manuscript. PG, BF and LR conceived of the study, coordinated the study and helped to draft the manuscript. All authors read and approved the final manuscript.

COMPETING INTERESTS

All authors declare no competing interests.

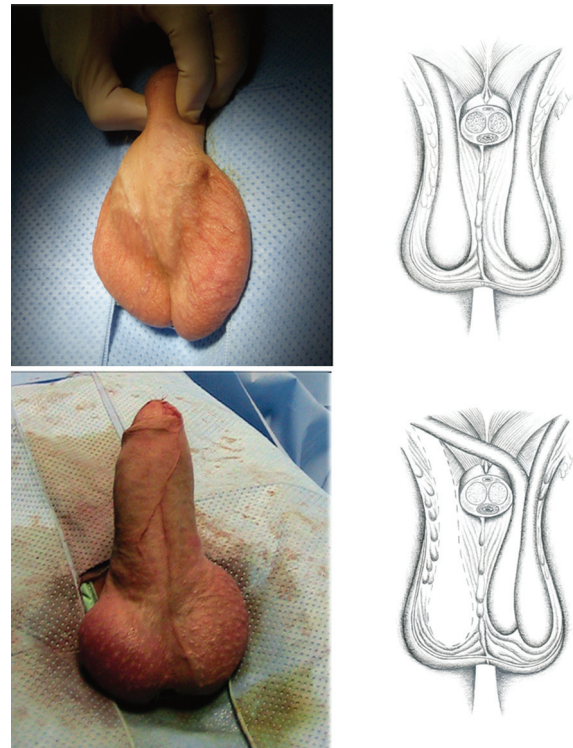


Figure 1: Bilateral testicular hypotrophy. The right gonad was mobilized and transferred to the contralateral hemiscrotum. A medium-size testicular prosthesis was placed in the empty right hemiscrotum.

REFERENCES

- Lanfranco F, Kamischke A, Zitzmann M, Nieschlag E. Klinefelter's syndrome. *Lancet* 2004; 364: 273–83.
- American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. 4th ed. Text Revision (DSM-IV-TR). Arlington: American Psychiatric Association; 2000.
- Ugarte y Romano F, González Serrano A. Testicular augmentation using chin implants. *J Sex Med* 2013; 10: 2582–5.
- Herrinton LJ, Brox T, Greenland S, Finkle WD, Cattolica E, *et al.* Regarding: a cohort study of systemic and local complications following implantation of testicular prostheses. *Ann Epidemiol* 2003; 13: 73–7.
- Ferro F, Borrelli P, Lucchetti MC. A surgical method to preserve testicular function and restore cosmetic appearance in hypogonadal men. *J Urol* 2004; 171: 2368–70.
- Oderda M, Gontero P. Non-invasive methods of penile lengthening: fact or fiction? *BJU Int* 2011; 107: 1278–82.
- Vardi Y, Har-Shai Y, Gil T, Gruenwald I. A critical analysis of penile enhancement procedures for patients with normal penile size: surgical techniques, success, and complications. *Eur Urol* 2008; 54: 1042–50.
- Callens N, De Cuypere G, Van Hoecke E, T'sjoen G, Monstrey S, *et al.* Sexual quality of life after hormonal and surgical treatment, including phalloplasty, in men with micropenis: a review. *J Sex Med* 2013; 10: 2890–903.
- Wessells H, Lue TF, McAninch JW. Penile length in the flaccid and erect states: guidelines for penile augmentation. *J Urol* 1996; 156: 995–7.
- Spyropoulos E, Christoforidis C, Borousas D, Mavrikos S, Bourounis M, *et al.* Augmentation phalloplasty surgery for penile dysmorphism in young adults: considerations regarding patient selection, outcome evaluation and techniques applied. *Eur Urol* 2005; 48: 121–7.