



Open Access

INVITED COMMENTARY

Operational Andrology

Commentary on “A modified fixation technique for the cure of buried penis in children”Sofia Gereta¹, Adan N Tijerina¹,Safiya-Hana Belbina¹, E Charles Osterberg^{1,2}*Asian Journal of Andrology* (2023) 25, 144–145; doi: 10.4103/aja202216; published online: 10 May 2022

Congenital buried penis is an uncommon urological anomaly affecting approximately 0.3% of young children.¹ Buried penis occurs when a normal-length penis appears to be externally small, and congenital forms are associated with poor attachment between the penile base and skin, inelastic dartos fascia, inadequate outer penile skin, or excess suprapubic fat deposition.^{2,3} Buried penis is often asymptomatic but may contribute to voiding and erectile dysfunction, phimosis, infections such as balanitis and urinary tract infections, as well as psychosocial morbidity.³ A commonly used surgical reconstruction approach is fascial fixation repair, which recreates the natural exposure of the penile shaft.⁴ While not every child with buried penis requires reconstruction, surgery is generally indicated to restore normal voiding ability, improve penile length, and prevent future sexual dysfunction.³ Postoperative complications after buried penis repair generally include infection and genital lymphedema, as well as wound contracture and recurrence of retraction, but exact incidence rates are difficult to report.⁵

In the accompanying article, Cui *et al.*⁶ describe a modified fixation technique that aims to reinforce the penile base more effectively during a fascial fixation repair of buried penis. The authors first separated the leaves of the prepuce, degloved the body of the penis, and removed the surrounding fibrotic tissue. They then anchored Scarpa's fascia, Buck's fascia, and the skin at the 10 o'clock and 2 o'clock positions at the dorsal base of the penis, using prolene over silk suture for additional reinforcement. The penile shaft was then covered with the inner leaf of the prepuce.

The authors conducted a retrospective analysis of 201 pediatric patients at a single hospital who received their modified fixation or a traditional fixation during buried penis repair by a single surgeon. During the 5-year study period, the traditional fixation technique was used during the first three years and the modified technique was used during the latter two.

The authors found that patients in the modified penile fixation group had significantly longer penile length (mean \pm standard deviation) compared to the traditional fixation group after 6 months (penile length, modified fixation: 3.4 ± 0.6 cm, traditional fixation: 3.1 ± 0.7 cm, $P = 0.036$) and 12 months (penile length, modified fixation: 3.9 ± 0.8 cm, traditional fixation: 3.5 ± 0.7 cm, $P = 0.029$). There was a significantly lower incidence of postoperative skin contracture ($P = 0.034$) and penis retraction ($P = 0.012$) in the modified fixation group at both time intervals. In addition, parental satisfaction scores evaluating

penile size, morphology, and voiding status were significantly higher for all three categories in the modified penile fixation group at 6-month and 12-month follow-up.

The authors' modified technique is simple to perform and streamlines a preexisting approach. Although statistical power was not calculated and is likely low, the sample sizes are commendable given the rarity of congenital buried penis. The authors include a comparative traditional technique group and report critical patient characteristics, such as age and preoperative length, to illustrate the significance of outcomes. Follow-up was conducted at an appropriate interval of 6 months and 12 months given that most complications of reconstruction emerge within 12–18 months.⁷ However, pre- and postoperative images would have nicely reinforced the positive findings.

The modified technique showed significant improvement in both rates of complications and satisfaction scores after reconstruction. From a practice perspective, it was not found to increase operative times, postoperative hospital stays, or postoperative complications. Perceptions of penile length and morphology are inherently subjective as they are influenced by cultural and societal factors. Thus, the findings of penile satisfaction scores from an unvalidated questionnaire of one medical center cannot be generalized across different ethnic groups. The clinical relevance of the modified technique may be more easily comprehensible if the differences of effect size in penile length between the two groups were calculated. Further long-term follow-up is needed as it is unknown if this fixation technique will inhibit the normal movement of the penile skin over the shaft or create an artificial penile position.²

Currently, no single operative technique has been described as the gold standard of care for pediatric patients with buried penis.⁴ The authors impressively provide evidence that a modified fixation technique may be a simple and effective method for reducing short-term complications and improving parent satisfaction scores after buried penis reconstruction in children.

AUTHOR CONTRIBUTIONS

All authors participated in the writing, critical revision, and read and approved the final manuscript.

COMPETING INTERESTS

All authors declare no competing interests.

REFERENCES

- 1 Matsuo N, Ishii T, Takayama JI, Miwa M, Hasegawa T. Reference standard of penile size and prevalence of buried penis in Japanese newborn male infants. *Endocr J* 2014; 61: 849–53.
- 2 Redman JF. Buried penis: congenital syndrome of a short penile shaft and a paucity of penile shaft skin. *J Urol* 2005; 173: 1714–7.
- 3 Cimador M, Catalano P, Ortolano P, Giuffrè M. The inconspicuous penis in children. *Nat Rev Urol* 2015; 12: 205–15.
- 4 Delgado-Miguel C, Muñoz-Serrano A, Amesty V, Rivas S, Lobato R, *et al.* Buried penis surgical treatment in children: dorsal dartos flap vs. fascia fixation. A retrospective cohort study. *J Pediatr Urol* 2022; Doi: 10.1016/j.jpuro.2021.12.016. [Online ahead of print].
- 5 Falcone M, Sokolakis I, Capogrosso P, Yuan Y, Salonia A, *et al.* What are the benefits and harms of surgical management options for adult acquired buried penis? A systematic review. *BJU Int* 2022; Doi: 10.1111/bju.15696. [Online ahead of print].

- 6 Cui X, Gao BJ, Chen L, Huang WH, Zhou CM. A modified fixation technique for the treatment of buried penis in children. *Asian J Androl* 2022; Doi: 10.4103/aja20224. [Online ahead of print].
- 7 Hampson LA, Muncey W, Chung PH, Ma CC, Friedrich J, *et al.* Surgical and functional outcomes following buried penis repair with limited panniculectomy and split-thickness skin graft. *Urol* 2017; 110: 234–8.

¹Dell Medical School, University of Texas at Austin, Austin, TX 78712, USA;
²Division of Urology, Department of Surgery and Perioperative Care, Dell Medical School, University of Texas at Austin, Austin, TX 78712, USA.
Correspondence: S Gereta (sgereta@utexas.edu)
Received: 31 January 2022; Accepted: 14 February 2022

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

©The Author(s)(2022)

