CASE REPORT

Staged Surgical Repair of Penoscrotal Hypospadias with Severe Chordee: Chordectomy and Scrotoplasty in a Pediatric Patient

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ABSTRACT

Hypospadias is one of the most common congenital anomalies in males, with an estimated prevalence of 1 in 250–300 live births, and is classified into distal and proximal types based on the location of the urethral meatus. We report a 1-year-old boy who had not urinated from the tip of the penis since birth. Physical examination revealed a urethral opening at the penoscrotal region, significant chordee, and bilaterally descended testes. The patient was diagnosed with proximal hypospadias and underwent staged surgical management including chordectomy, scrotoplasty, and penile transposition. Postoperatively, the patient recovered well and was discharged in good condition with satisfactory wound healing. Proximal hypospadias represents a severe form requiring complex reconstruction. Surgical management aims to achieve penile straightening, functional urethral reconstruction, and acceptable cosmetic outcomes. This case highlights the importance of early diagnosis and appropriate surgical planning in managing severe hypospadias to optimize both functional and aesthetic results in pediatric patients.
Malaysian Journal of Medicine and Health Sciences (2026) 22(SUPP6): 87-89. doi:10.47836/mjmhs.22.s6.17

Keywords: Proximal hypospadias, urethroplasty, chordectomy, scrotoplasty

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INTRODUCTION

Hypospadias is one of the most common congenital anomalies in male newborns and is considered the second most frequent male genital malformation after undescended testes, with an estimated incidence of 1 in 250–300 live male births. Anatomically, it is characterized by ventral displacement of the urethral meatus, ventral penile curvature (chordee), and incomplete ventral foreskin resulting in a dorsal hooded appearance. These abnormalities may interfere with normal voiding during childhood and can lead to long-term complications in adulthood, including sexual dysfunction, infertility, and psychosocial distress related to genital appearance (1–3).

Over recent decades, outcomes of hypospadias repair have improved significantly due to advances in surgical techniques, enhanced understanding of penile anatomy, and optimized perioperative management, including appropriate timing of surgery in early childhood. Nevertheless, severe forms such as proximal or penoscrotal hypospadias associated with significant chordee remain surgically challenging. These cases often require complex or staged reconstruction to achieve adequate penile straightening and urethral reconstruction while minimizing complications such as fistula formation, meatal stenosis, and residual curvature (2,4,5).

This report presents a pediatric case of penoscrotal hypospadias with chordee managed using chordectomy and scrotoplasty. The case highlights surgical decision-making in a severe hypospadias variant where restoration of penile straightness and normalization of penoscrotal anatomy are essential for optimal long-term functional and cosmetic outcomes.

CASE REPORT

A 1-year-old boy was referred to our center for evaluation and management of an abnormal urinary stream since birth, with urine not passing through the penile tip. His parents reported that urination occurred from an abnormal location on the ventral aspect of the genital region. The patient had no associated urinary symptoms such as dysuria, straining, urinary retention, hematuria, fever, or recurrent urinary tract infections. No defecation problems were reported. He was initially evaluated at Margono Purwokerto General Hospital, where surgical correction was recommended between the ages of 1 and 3 years. The patient was routinely followed at a regional hospital in Banyumas and was subsequently referred to

our tertiary center (RSS) for further management with a planned staged repair.

The patient was born prematurely at approximately 8 months of gestation to a primigravida mother (G1P0) via spontaneous vaginal delivery, with a birth weight of 1.8 kg. He cried immediately after birth, and the abnormal urinary stream was noted at that time. His past medical history included a left inguinal hernia diagnosed at 40 days of age, which was surgically repaired in April 2023 at a regional hospital in Banyumas. Bilateral retractile testes were identified at 2 months of age, and he later underwent bilateral orchidopexy at RSS on July 19, 2024.

On examination, the patient was calm and in good general condition. Vital signs were within normal limits. Anthropometric assessment revealed a weight of 10.5 kg and a height of 81 cm. Based on WHO Child Growth Standards, the patient was classified as underweight (WAZ < −2 SD).

Genital examination demonstrated penoscrotal hypospadias, with the urethral meatus located at the penoscrotal junction and associated with moderate chordee (Figure 1). The glans measured 1.0 x 0.8 cm, and the urethral plate was shallow, measuring 0.4 x 0.3 cm. The stretched penile length was 1.2 cm. Both testes were palpable within the scrotum, consistent with a satisfactory outcome following previous orchidopexy (Figure 2). No clinical evidence of recurrent inguinal hernia was identified.

The patient underwent first-stage surgical correction consisting of penile degloving, chordectomy to correct ventral curvature, and scrotoplasty with penoscrotal transposition (Figure 3). This operation was performed as part of a planned staged repair strategy, with the

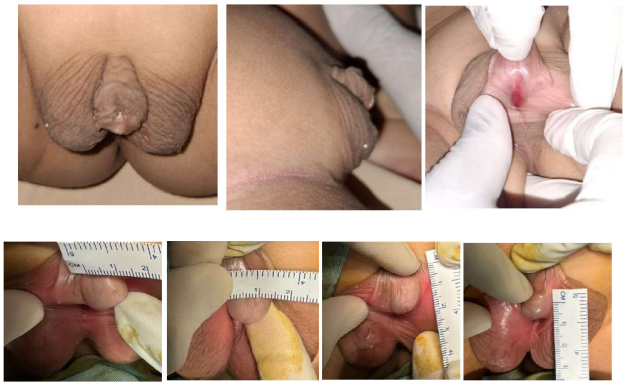

Figure 1: Genital Examination and Measurement of Glans Penis and Urethral Plate. Clinical photograph showing external genital examination in a pediatric patient with penoscrotal hypospadias. The urethral meatus is located at the penoscrotal junction (arrow). The glans penis and urethral plate are clearly visible, with measurements obtained intraoperatively using a sterile ruler. The glans width and length, as well as the shallow urethral plate, are demonstrated to illustrate anatomical limitations relevant to surgical planning.

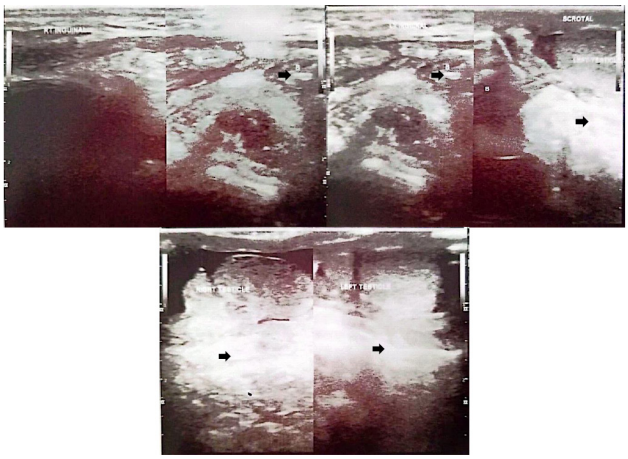

Figure 2: Inguinal USG. Ultrasonographic image of the inguinal and scrotal regions demonstrating both testes with normal size and echotexture located within the scrotal sac (arrows: testicles)

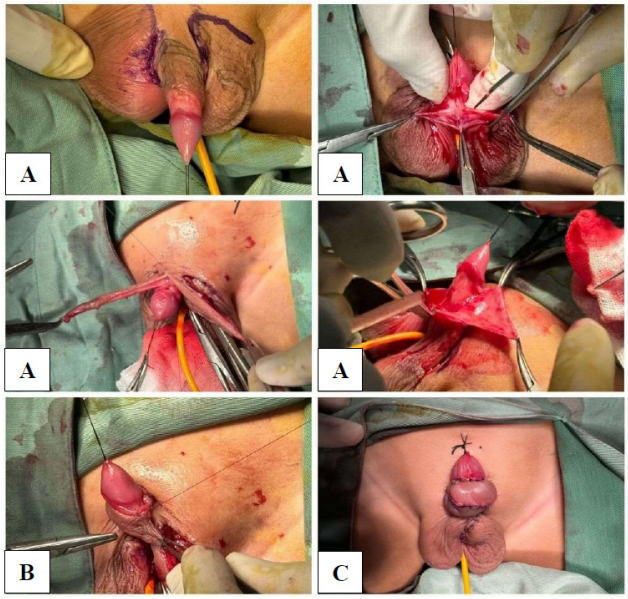

Figure 3: Intraoperative and post operative Chordectomy and Scortoplasty with Ehrlich-Scardino Technique. Intraoperative and postoperative photographs demonstrating first-stage surgical correction. (A) Intraoperative view after penile degloving and chordectomy showing correction of ventral curvature. (B) Scrotoplasty with penoscrotal transposition performed using the Ehrlich–Scardino technique to achieve improved genital alignment. (C) Immediate postoperative appearance showing satisfactory penile straightening and scrotal configuration.

primary aim of achieving adequate penile straightening and improving the penoscrotal configuration prior to definitive urethral reconstruction. The staged approach was selected due to the proximal location of the urethral meatus, the presence of moderate chordee, and an inadequate urethral plate, which increase surgical complexity and the risk of complications if definitive repair is attempted in a single-stage procedure. The Ehrlich–Scardino technique was chosen because it is a well-established option for proximal hypospadias and provides a reproducible method to correct chordee and optimize local tissue conditions for subsequent urethroplasty, with acceptable functional and cosmetic

outcomes (4,5). This case report was conducted in accordance with ethical standards. Written informed consent for publication of clinical information and images was obtained from the patient's parents, and all efforts were made to ensure complete protection of the patient's identity.

DISCUSSION

Penoscrotal hypospadias is a severe form of proximal hypospadias and is frequently associated with penile curvature (chordee) and abnormal penoscrotal anatomy (3). Compared with distal hypospadias, proximal variants are more complex to reconstruct and are generally associated with higher rates of postoperative complications, including urethrocutaneous fistula, meatal stenosis, and residual curvature (2,4,5). Therefore, careful preoperative assessment and individualized surgical planning are essential to achieve satisfactory functional and cosmetic outcomes (2,4,5).

In the present case, the patient had penoscrotal hypospadias accompanied by moderate chordee and a shallow or inadequate urethral plate, which influenced the decision to proceed with a staged repair strategy (5). In severe proximal hypospadias, staged reconstruction is commonly preferred because it allows for correction of penile curvature and optimization of penile and scrotal tissue conditions prior to definitive urethroplasty (5). This approach may reduce the risk of complications compared with attempting complete reconstruction in a single-stage procedure in complex cases (4,5).

The first-stage procedure consisted of chordectomy and scrotoplasty with penoscrotal transposition, performed using the Ehrlich–Scardino technique. The primary objective of this stage was to achieve adequate penile straightening and improve genital alignment, thereby providing a more favorable anatomical foundation for second-stage urethral reconstruction (4,5). In this patient, the early postoperative course was uneventful, and follow-up evaluation demonstrated satisfactory wound healing without immediate complications.

The advantages of the Ehrlich–Scardino technique include preservation of well-vascularized tissue coverage, which supports wound healing and tissue viability during staged reconstruction (4,5). However, staged repair may require multiple surgical procedures and prolonged follow-up, and outcomes can be influenced by the severity of the condition and surgical expertise (4,5).

The Ehrlich–Scardino technique is primarily indicated for severe cases of hypospadias, particularly those associated with penoscrotal transposition and moderate to severe chordee. It is also suitable for patients with other complex genital malformations requiring scrotal repositioning. However, this technique may not be appropriate for milder forms of hypospadias or for patients with extensive scarring or previous unsuccessful surgeries, as these conditions may limit the availability of healthy tissue for reconstruction. Despite these limitations, the Ehrlich–Scardino technique remains a valuable option for managing complex congenital malformations, offering both functional and cosmetic benefits (4,5).

This case is noteworthy because it highlights the importance of addressing both penile curvature and penoscrotal malposition during the initial stage of reconstruction in severe proximal hypospadias. Nevertheless, this report has limitations. As a single case report, the findings cannot be generalized. Additionally, the short duration of follow-up did not allow for assessment of long-term outcomes, including urinary function after definitive urethroplasty, cosmetic satisfaction, penile growth, and sexual function later in life (2,5). Longer follow-up periods and larger case series are required to better evaluate the outcomes of staged repair in similar patients (2,5).

CONCLUSION

This case describes a 1-year-old boy with penoscrotal hypospadias and moderate chordee managed using a staged surgical approach. First-stage chordectomy and scrotoplasty with penoscrotal transposition (Ehrlich–Scardino technique) resulted in satisfactory early postoperative healing without immediate complications. This report highlights the importance of individualized surgical planning in severe proximal hypospadias to achieve penile straightening and optimize penoscrotal anatomy before definitive urethral reconstruction (4,5).

REFERENCES

1. Donaire AE, Mendez MD. Hypospadias. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023. Available from: https://www.ncbi.nlm.nih.gov/books/NBK482122/
2. Springer A. Assessment of outcome in hypospadias surgery: a review. Front Pediatr. 2014;2:2. doi:10.3389/fped.2014.00002
3. Baskin LS, Ebbers MB. Hypospadias: anatomy, etiology, and technique. J Pediatr Surg. 2006;41(3):463–472. doi:10.1016/j.jpedsurg.2005.11.059
4. Snodgrass W, Bush N. Primary hypospadias repair techniques: a review of the evidence. Urol Ann. 2016;8(4):403–408. doi:10.4103/0974-7796.192097
5. Cimador M, Castagnetti M, De Grazia E. Current role of two-stage repair in proximal hypospadias. Nat Rev Urol. 2013;10(7):420–429. doi:10.1038/nrurol.2013.132