

## CASE REPORT

# Severe Hypospadias with Multistaged Urethroplasty: Case Report

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### ABSTRACT

Hypospadias is a common congenital anomaly in males, with severity increasing as the urethral meatus is located more proximally. A 13-year-old boy presented with an abnormal urinary stream and malformed genitalia since birth. He had a history of perineal voiding and underwent chordectomy at 5 years old, followed by scrotoplasty, penoscrotal transposition, and urethroplasty at 11 years old, with persistent symptoms. Examination revealed a scrotal urethral meatus with a deep urethral plate, and the glans–urethral–meatus–shaft (GMS) score indicated severe hypospadias. A multi-staged urethroplasty using a U-incision technique was performed to reposition the meatus. Postoperatively, the patient achieved improved urinary function and satisfactory cosmetic outcomes without fistula formation. Severe perineal hypospadias requires a complex, staged surgical approach. This case highlights the importance of careful planning and staged reconstruction in achieving favorable functional and cosmetic results in patients with severe hypospadias after previous failed interventions.

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### INTRODUCTION

Hypospadias is one of the most common male congenital disorders, with an international prevalence of approximately 20.9 per 10,000 births (about 1–2 per 1,000 live male births) (1,2). Surgical correction using various techniques is the mainstay of treatment. Hypospadias occurs when the urethral folds fail to fuse properly during embryogenesis, resulting in varying degrees of urethral misplacement. In severe cases, the urethral opening may be located at the perineum or scrotum and is often associated with anomalies such as chordee, cryptorchidism, or bifid scrotum. These cases are complex and require tailored surgical approaches to achieve optimal functional and cosmetic outcomes.

Due to the complexity and potential complications associated with single-stage repair, multi-staged urethroplasty allows gradual correction of anatomical abnormalities while minimizing risks such as stricture formation and fistula development (3–5). This approach involves staged urethral reconstruction, glanuloplasty, and correction of associated conditions such as chordee (3–5).

In this case report, we describe a patient with severe hypospadias who underwent multi-staged urethroplasty.

The aims are: (1) to outline the diagnostic work-up and stepwise surgical management of a 13-year-old boy with severe perineal hypospadias after previous operations, and (2) to report the functional and cosmetic outcomes following completion of staged reconstruction.

### CASE REPORT

A 13-year-old male presented with an abnormal urinary stream and malformed penile and scrotum since birth. He had a prior diagnosis of perineal hypospadias with bifid scrotum and penoscrotal transposition. Previous surgical history included chordectomy at 5 years old and scrotoplasty with penoscrotal transposition at 11 years old. Despite these procedures, the patient continued voiding through the perineal region with unsatisfactory cosmetic appearance.

On examination, the urethral meatus was located in the scrotum, with bilaterally descended testes and no chordee or other associated anomalies (Figure 1). Although karyotype analysis was not available, clinical findings supported a 46,XY male phenotype. The glans–urethral–meatus–shaft (GMS) score was G2M4S1, indicating severe hypospadias.

A multi-staged urethroplasty was planned. The first stage utilized a tubularized incised plate (TIP) technique with a U-shaped incision to reposition the urethral meatus from the penoscrotal region to the mid-scrotal area. A 10 Fr silicone Foley catheter was inserted, and the neourethra



**Figure 1: The initial appearance of the genital before multi-staged urethroplasty**

was constructed using flapsutures with 5-0 polydioxanone. The second stage was performed six months later, involving distal urethroplasty with circular incision and further advancement of the urethral meatus. A third-stage procedure was conducted nine months afterward to advance the meatus to the distal penile tip. Operative

details and progression are shown in Figure 2 (A–D). Postoperatively, the patient demonstrated significant improvement in urinary function, with a normal urinary stream from the distal penile tip. There were no complications such as fistula, stenosis, or dehiscence. Cosmetic outcomes were satisfactory, with marked improvement compared to the preoperative condition (Figure 2D).

**DISCUSSION**

The patient had perineal hypospadias, the most proximal and severe form, requiring complex surgical management. In this case, multiple prior procedures failed to restore function, necessitating a staged reconstructive approach. The persistence of abnormal urinary stream and poor cosmetic outcome highlights the challenges associated with severe hypospadias.

Hypospadias is classified based on the location of the urethral meatus into distal, midshaft, and proximal types, with increasing severity in more proximal forms (3). Severe cases often require individualized surgical strategies to achieve both functional and cosmetic outcomes. The tubularized incised plate (TIP) technique used in this case is widely applied and allows preservation of the urethral plate while facilitating urethral reconstruction (3).

Unlike mild hypospadias, which may be managed



**Figure 2: Surgical stages and outcomes of multi-staged urethroplasty. (A) First-stage urethroplasty using TIP technique. (B) Post second-stage urethroplasty. (C) Third-stage urethroplasty. (D) Final postoperative outcome showing improved functional and cosmetic results.**

with single-stage repair, severe perineal hypospadias frequently requires staged reconstruction, particularly in patients with previous failed surgeries or complex anatomy (4,5). Multi-staged urethroplasty enables gradual correction and reduces the risk of complications such as fistula, stricture, and dehiscence.

Although complication rates remain significant in both single-stage and staged repairs, no technique has proven universally superior, and outcomes largely depend on surgical expertise (4,5). In this case, staged urethroplasty resulted in satisfactory functional and cosmetic outcomes without complications, which is notable given the higher risk profile of proximal hypospadias.

Ideally, patients with severe hypospadias should undergo endocrine and genetic evaluation to confirm a 46,XY karyotype and guide management (4,5). Although this was not feasible in our setting, clinical findings strongly supported a male phenotype.

Overall, this case demonstrates that multi-staged urethroplasty is a safe and effective approach for complex hypospadias, particularly after previous failed repairs, and can achieve favorable outcomes with careful planning and surgical expertise.

## CONCLUSION

In conclusion, severe hypospadias is a complex case requiring multi stage treatments. Even though the complication risks are still undeniable, the multi staged urethroplasty technique is still done in clinical settings, as the experience and skills of the operator are more considerable in deciding the success of the

surgery. Moreover, it is important to weigh the risk of complications with the long term outcomes when deciding which technique will be selected. For pediatric surgeons to effectively plan interventions for this difficult illness, they must have a thorough understanding of these distinctions. With proper diagnosis and patience in completing the entire series of procedures, the goal of achieving optimal functional outcomes for the child can be attained.

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