A Rare Case of Urethral Duplication managed by Simple Meatal Correction

Sengol Joseph et al

ABSTRACT

Urethral duplication is a rare congenital anomaly. Although a number of theories have been proposed to describe the embryology of the condition, the actual mechanism of the disorder is still unclear. A case of urethral duplication in a 25-year-old male complaining of poor flow of urine and double stream has been discussed. The patient was treated successfully with simple meatal correction surgery.

Keywords: Abnormalities, Duplication, Urethra.

INTRODUCTION

Urethral duplication is an extremely rare, yet very well-described, congenital malformation, with about 150 cases described in the specialized literature. The embryology, etiology, and pathogenesis of the urethral duplication are obscure as is its management. Many different surgical approaches have been described. One such case of urethral duplication for its rarity and controversies regarding the surgical management has been reported. A case of 25-year-old man with type II A2 urethral duplication, managed successfully by a simple meatal corrective surgery, has been described.

CASE REPORT

A 25-year-old male patient, having symptoms of poor stream of urine and straining to pass urine, visited the outpatient department. On examination, the external genitalia showed double meatal openings which were narrow (Fig. 1). Ultrasonography of abdomen showed thickened bladder wall with the presence of a large bladder diverticulum and postvoid residue of 100 mL. Urine examination showed 15 to 20 pus cells/hpf, and culture was positive for Escherichia coli. Serum creatinine and complete blood count were normal. The patient was treated with culture-sensitive antibiotics following which ascending urethrogram was done by injecting dye through both the meatal openings. Ascending urethrogram showed the presence of double urethra communicating at the level of posterior urethra and the presence of a bladder diverticulum (Fig. 2).
Urethrocystoscopy was done through both the openings. Dorsal opening admitted 6 Fr ureteroscope could not be advanced in the narrow urethra, so a guide wire was passed through it and was kept in the bladder. Ventral meatus was also narrow distally and negotiable with 6 Fr ureteroscope till proximal bulb urethra. Rest of the ventral urethra was of good lumen and mucosa appeared normal. The guide wire was seen at the level of veru and was coiled in the bladder. The septum between the dorsal and ventral meatus up to the level of navicular fossa was excised, and hemostasis was achieved with 4-0 vicryl suture. Subsequently, 17 Fr cystoscope could easily be passed through the single meatus (Fig. 3) into the ventral urethra reaching the bladder. Postoperatively, patient passed urine with single stream and good flow (Fig. 4). One-year follow-up revealed good flow and no complaints.

DISCUSSION

Urethral duplication is a rare congenital anomaly, with approximately 150 cases described in literature. The anomaly is common in males with few cases reported in females. It has varied clinical manifestations, such as deformed penis, twin streams, urinary tract infection, urinary incontinence, serous discharge from sinus, outflow obstruction, and associated anomalies. Embryology of the condition is unclear. Several embryological theories have been proposed. Casselman and Williams stated that a partial failure or an irregularity of in-growth of the lateral mesoderm between ectodermal and endodermal layers of cloacal membrane in midline accounts for the forms with a dorsal epispadiac channel. Das and Brosman reported that abnormal termination of the Müllerian duct was responsible for urethral duplication. No single theory explains all the various types of abnormalities.

Effmann et al classified urethral duplication into three types and gave the most exhaustive description of duplication of urethra based on retrograde urethrography (Fig. 5). According to this classification, the patient belonged to type II A2. Various surgical techniques has been described, including incision of the two urethras.
longitudinally along their lateral side, as well as side-to-side anastomoses of two detubularized urethra, done by Chavdar Slavov and Ivo Donkov.\(^2\) Espinosa-Chávez\(^3\) used 6 cm free oral mucosa graft tube and transverse pedunculated preputial flap to construct the entire urethra.

Kumar et al\(^4\) managed Y-type duplication with single-stage operation for creation of neourethra using pedunculated perineal skin flap tube and both the urethras. In this case, excising the septum between the two urethras up to navicular fossa relieved the meatal stenosis and corrected the double stream.

**CONCLUSION**

Urethral duplication is a rare anomaly. Its anatomical complexity presents a great challenge with regard to surgical management. It can be concluded that simple meatal correction surgery can be a good treatment option in selected cases.

**REFERENCES**