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Urethral Duplication with Hypospadias repaired by using the Snodgrass Procedure

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Abstract

Barýþ Nuhoðlu, Ziya Akbulut, Turgay Akgül, Alper Çaðlayan, Alpaslan Demirci, Derya Balbay M. Urethral Duplication with Hypospadias repaired by using the Snodgrass Procedure. *Nigerian Journal of Paediatrics* **2006; 33:26.** The clinical presentation of urethral duplications is variable. Surgical management should be planned individually according to anatomical findings of the abnormality. We describe our experience with type-one duplication of the urethra which was surgically corrected by simply excising the ventral wall of the blind ending urethral remnant and then repairing the hypospadias by using the Snodgrass technique.

Key words: urethral duplication, hypospadias, Snodgrass repair.

Introduction

URETHRAL duplications are rare anomalies that are mostly seen in males. As far as we are aware, there have been 172 cases published in the English literature.[1] We present the case of a four-year old boy with such type I urethral duplication that was surgically corrected using the Snodgrass technique.

Case Report

A four-year old boy was brought by his parents to our clinic for inability to urinate normally in a direct fashion, but instead urinated ventrally. Physical examination revealed an uncircumcised penis with a partially developed preputium which was deficient ventrally, a hypospadic urethral meatus located subcoronally and ventrally without any chordee and no prominent ventral groove. A second meatus was also noted distally from which according to the parents, urine has never been voided, and through which a 4F urethral catheter could not be passed beyond 2 cm up into the bladder (Fig. 1). For this reason, a retrograde urethrogram was not carried out.

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He was scheduled for surgery to correct his hypospadias and urethral duplication. Before proceeding with the open surgery, we first planned to perform a cystoscopic examination at the outset; this confirmed a blind ending urethral remnant of 2 cm in length. To repair his urethral anomalies, the ventral surface of the blind ending urethra was opened vertically and the excess tissue trimmed off to create a urethral plate continued distally to the functional urethral meatus. The hypospadias was then repaired with the use of the Snodgrass technique, in which a midline incision on the dorsal plate was

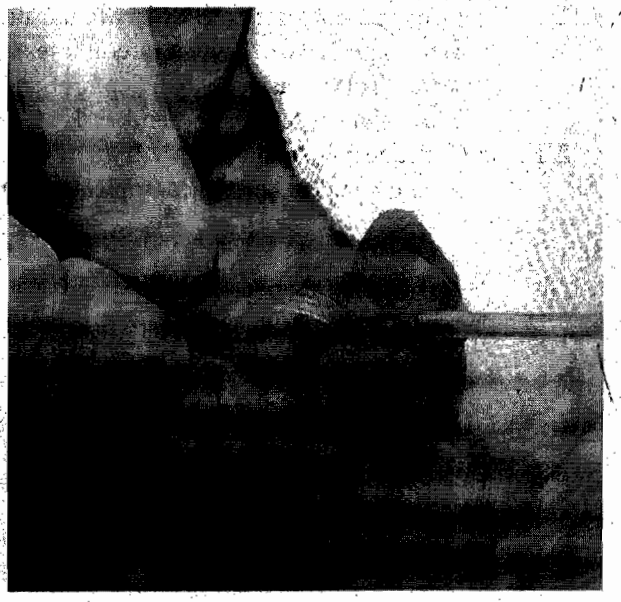

Fig. 1: Type 1 urethral duplication

extended all the way down to the new meatus and the trimmed lateral edges of the urethra was closed to advance the newly formed external meatus to the tip of the glans. Postoperative course was uneventful. Currently, at six months after surgery, he is urinating through the new meatus at the glandular tip without any surgical complication such as a stricture or fistula formation.

Discussion

Urethral duplications are rare congenital anomalies with diverse anatomical and clinical presentations. At times, these anomalies may even be overlooked by the parents if they are less severe and do not cause any symptoms other than cosmetic appearance. At other times however, they may cause urinary infections, infravesical obstruction or even urinary incontinence depending on their location and embryogenesis.[1-3]

Embryologically, the irregularity and partial deficiency of the lateral mesoderm around the cloacal membrane seems to underlie the aetiopathogenesis and in fact, more than one theory has been proposed to explain its clinical diversity.[2] According to the classification of Effman,[4] there are three types of urethral duplications: Type I is the incomplete duplication with two openings on the penis; Type II is complete duplication; in Type IIa, two separate urethral openings are present (rarely, Y-type of duplication where additional ectopic meatus ends in the perineum or in the anus) and Type IIb when there is a common single opening. When complete duplication of urethra is associated with duplication of the bladder and each bladder is connected with its draining urethra independently, it is known as Type III.[4]

Our patient had a Type I duplication, which was asymptomatic and drew the attention of the parents for cosmetic reasons only. The child was brought to our clinic for the correction of ventral urination which was easily and effectively treated with the use of Snodgrass technique (with dorsal dartos flap) after the division and trimming off of the ventral surface of the duplicated blind urethral remnant.

Physical examination and investigations which included urine analysis and culture, abdominal ultrasound and cystoscopic examination, did not show any other pathology sometimes reported to be associated with urethral duplications. These other pathologies have included epispadias, undescended testicle, inguinal hernia, renal dysplasia, duplicated bladder, imperforate anus, sacral agenesis and colonic duplications.[1,2-5,6] That none was present could be due to the mildest form of the duplications we dealt with. We did not investigate whether VUR was present or not with a voiding cystourethrogram since the urine was sterile, the kidneys were normal on ultrasound and cystoscopically, and the urethral openings were normal looking and patent. We believe that similar to the situation with hypospadias,[5-7] there is no need to further investigate for the presence of associated anomalies in urethral duplications if like our case, such duplications are not severe.

In conclusion, we believe that urethral duplications can easily and effectively be treated with the use of the Snodgrass technique after the division and trimming off of the ventral surface of the duplicated blind urethral remnant. We also do not recommend carrying out further studies to look for associated congenital anomalies in cases that present with the mildest forms.

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