Successful surgical correction of true diphallia, scrotal duplication, and associated hypospadias

Hatangadi Sanjay Bhat*, Sudhir Sukumar, Tiyadath Balagopal Nair, Cherukareth Saifuddin Mohammed Saheed

Department of Urology, Amrita Institute of Medical Sciences and Research Centre, Kochi, Kerala 682 026, India

Abstract
A 1-year-old child with complete duplication of penis presented with continuous dribbling of urine. Examination revealed hypospadias of 1 penis and a duplicated scrotum with 2 normal testes. Cystourethrogram revealed a single bladder with a normal urethra in the dorsally placed phallus and ectopic insertion into the bladder of the ventral urethra. Abnormality was corrected by excision of the ventrally located penis bearing the ectopic urethra. The preputial skin of this ventral penis was used to repair the hypospadias of the dorsal penis. The case is being reported in view of its rarity and the successful surgical correction.

Diphallia or penile duplication is a very rare congenital anomaly. We report total surgical correction of true diphallia, which was associated with complete urethral duplication, double scrotum, and hypospadias.

1. Case history

A 1-year-old male child presented with double penis and continuous dribbling of urine. Examination of the external genitalia showed 2 penises and a normal-appearing testis within each of the separated hemiscrotums (Fig. 1). The dorsal penis had a penoscrotal hypospadias with significant chordee. The ventral penis had a normally located meatus with evidence of continuous urinary incontinence.

Both urethras could be easily catheterized, and cystourethrogram (Fig. 2) revealed complete duplication of urethras opening into a single bladder. The urethra of the dorsal penis

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* Corresponding author. Tel.: +91 484 4001320; fax: +91 484 4002020. E-mail address: urology@aims.amrita.edu (H.S. Bhat).

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opened through the normal bladder neck, whereas the ectopic urethra of the ventral penis opened into the lateral bladder wall.

There was no pelvic diastasis or other systemic anomalies. Karyotyping was normal.

The first-stage surgery was aimed at correcting the diphallia while preserving the dorsal penis with the orthotopic urethra. Dorsal penis was degloved and chordee corrected by excision of dysgenetic spongiosum distal to the urethral meatus. Both its corporal bodies were preserved, and satisfactory orthoplasty was confirmed by intracorporal injection of normal saline (Gittes’ technique). Ventral penis was then degloved and its urethra and both corpora were excised at the level of the perineal membrane. The preputial skin from this ventral penis was then mobilized to form a tubularized island flap (Duckett tube) and tunneled under the skin between the 2 phalluses to form a neourethra for the dorsal penis. Although there was some asymmetry of the genitalia (Fig. 3), the child voided satisfactorily after removal of the splint.

Later, at the age of five years, the asymmetric scrotum was reconstructed using a scrotal rotation flap as for a prepenile scrotum. After this, the child has normal-appearing genitalia (Fig. 4) and is continent with a straight and forceful urinary stream.

2. Discussion

Less than 100 cases of penile duplication have been reported worldwide, and it is believed that no two are identical [1]. It is thought to result from varying degrees of incomplete fusion of the genital tubercles [2,3].

The spectrum may vary from a bifid penis to true diphallia [2]. True diphallia is extremely rare and is characterized by 2 separated penises each having 2 corporal bodies and 1 corpus spongiosum. It may be associated with urethral, bladder, and scrotal duplication [4]. Other systemic anomalies include ventral hernias, bladder extrophy, separation of pubic symphysis, and vertebral and anal anomalies [3,4]. Surgical correction is individualized with the aims of achieving proper urinary continence, urinary stream, and erection with adequate cosmesis [5].

References
