Chapter 3

PENILE ANOMALIES IN CHILDREN

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Introduction

With penile assessment and inspection of the external genitalia of the infant and child, a practitioner can diagnose for some critical clinical conditions. From these anomalies, congenital penile malformations are nowadays common in infants or newborns and invariably give rise to concern for their parents. Even an inexperienced practitioner can determine whether a baby with normal anatomy has an abnormality of his penis (American Academy of Pediatrics, 1996). The penile anomaly does not require immediate surgical intervention unless it affects the urinary system or obstructs urinary excretion as in the posterior urethral valve (Perks, MacNeily, & Blair, 2012). It should be explained to parents that these structural anomalies will not heal spontaneously and recommended that the cosmetic penile surgery is done at 6-18 months of age (Castagnetti, El-Ghoneimi, 2010).

The Embryological Basis of Penile Anomalies

The genital tubercle is formed by migration of the mesodermal mesenchyme to the cranial aspect of the cloacal membrane between the intrauterine fourth and seventh weeks (Yiee, 2010). The caudal portion of the cloaca containing the endoderm and ectoderm layers forms the urogenital fold. The caudal portion of the cloaca containing the endoderm and ectoderm layers forms the urogenital fold. The external genitalia of both sexes come from the urogenital folds and the primitive sex cords begin to differentiate with the SRY gene signals in male sex with the Y chromosome. The first signaling brings about the development of Sertoli cells, and then the testis tissue formation begins via Sertoli cells signals. In the testis tissue, Sertoli cells serve the development of germ cells and Leydig cells. The conversion of testosterone produced by Leydig cells into dihydrotestosterone, the active form of testosterone, has a crucial role in inducing for external genitalia development. After this stage, when normal embryogenesis takes place, the penile and scrotal structures develop. The early development of the external genitalia for the two sexes has a similar process until the ninth week of gestation (Koopman, 2009).

Factors that are effective in the pathogenesis of male genital anomalies are testosterone synthesis by the fetal testis, its enzymatic conversion into dihydrotestosterone by 5 α -reductase and the presence of androgen receptors capable of recognizing the androgenic hormones in the target tissue. From this target tissues

Penile Nevi

Congenital nevus is seen as the most common lesion in penile nevi. Its incidence is about one in 100 neonates and it may be present anywhere on the skin of the glans and penile shaft. There is a small possibility of malignant transformation of melanocytic nevi (Papali, & et al., 2008). An example is shown on the penis dorsal skin in Figure 3A.

Phimosis

Phimosis is known as the inability to retract the prepuce covering the glans. Topical corticosteroids can be used for treatment, more comfortable voiding in the urination problem due to prepuce narrowing. If there is no improvement it is treated only through the circumcision (Moreno, & et al., 2014).

Hypospadias

Hypospadias is an incomplete development of the penis and can be classified according to the location of the meatus (e.g. proximal and distal). Surgery is a keystone of treatment (Schönbutcher, & et al., 2008). The urethral meatus in the hypospadias can develop anywhere from the glans to the perineum along the underside of the penis. The aim of the surgical correction, for which over 300 different techniques are reported, is to fix any curvature or chordee, ensuring that the penis is straight, to create a functional neourethra to direct the urinate in a forward direction, and also to compose of the normal penile appearance (Örtqvist, &et al., 2015).

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