Histopathological description of Pseudophallus (supernumerary penis)

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Abstract

A case of congenital anomaly diagnosed in 19 years male penis. The condition is an extremely rare incident when presented as a case of supernumerary penis (diphallus) not accompanied with other anomalies related to other systems or organs. However, to the authors knowledge, searching through the literature provides no information on histopathological description for such anomaly. Accordingly, this rare interesting case is evaluated through histopathological assessment in a trial to diagnose the tissue changes and origin.

Keywords: pseudodiphallus, supernumerary penis, congenital anomaly, histopathology.

1. Introduction

Approximately 100 cases have been reported since the first case has been reported by Wecker in 1609. There are broadly three types of diphallus, viz. true diphallus with two independent penises, bifid phallus that may be glandular or complete and Pseudophallus having a rudimentary phallus in addition to the normal penis. Numerous associated genitourinary and gastrointestinal anomalies have been described with diphallus (Sharma et al. 2000). Reviewing medical literatures, nearly all reported cases of Diphallia were accompanied by at least one other congenital anomaly such as urogenital, imperforated anus, vertebral
deformities or a gastrointestinal anomaly (Sharma et al. 2000; Thierry et al. 2003; Mutlu et al. 1999; Manuel Castanheira, 2010). The authors inclined to publish this case report concerned with histopathology changes in supranumerey tissue of this patient after surgical resection (Tarik, 2012).

2. Case Report

A 19-year-old male was presented to the Air-Force College Hospital at Sallahadin Provence, Iraq / May 1979. The patient was complaining from urine dribbling from a small bud at the ventral surface of his mid-penile shaft during voiding of urine. He had this problem since his childhood. The supernumerary penis was dissected from the main penile shaft (Fig. 1). (This case report is an extended work for histopathological evaluation on previously published case report.) (Tarik, 2012).

3. Results

3.1 Histopathological Study

The resected penile-like tissue revealed a complete aplasia of the two corpora cavernosa, the single ventral corpus spongiosum and the tunica albuginea. There is complete aplasia of the penile deep Buck’s fascia and the superficial Dartos fascia (Fig. 2). There is complete aplasia of the pinle (Para-urethral glands) urethral mucus glands of Littré and hypoplasia of the urethral stratified columnar epithelium; it also shows a complete absence of the pinle folded recesses in the urethra (Fig. 3). The section also shows thickening of the pinle epidermis and a complete aplasia of the penile deep Buck’s fascia and the superficial Dartos fascia. There is absence of the specialized vein with thick polsters in their intima (Fig. 4).

![Fig. 1: The Surgical Specimen of the Supernumerary Penis](image_url)
Fig. 2: Photomicrograph showing a transverse section of the resected supernumerary penis at the level of the base of the glans and prepuce with complete aplasia of the two corpora cavernosa, the single ventral corpus spongiosum and the tunica albuginea. There is complete aplasia of the penile deep buck’s fascia and the superficial Dartos fascia.

Fig. 3: Photomicrograph showing a transverse section of the resected supernumerary penis at the level of base of the glans and prepuce. There is complete aplasia of the pinle (Para-urethral glands) urethral mucus glands of Littré and hypoplasia of the urethral stratified columnar epithelium. The section shows complete absence of the pinle folded recesses in the urethra.
Fig. 4: Photomicrograph showing a transverse section of the resected supernumerary penis at the level of base of the glans and prepuce demonstrate thickening of the pinle epidermis; complete aplasia of the penile deep buck’s fascia and the superficial Dartos fascia, with the absence of specialized vein that posses thick polsters in their intima.

4. Discussion

Over the past decade, the genetics of external genital development have begun to be understood. Male external genitalia develop from the genital tubercle, whereas the genital tubercle has an endodermal component. Urethral epithelium, which expresses sonic hedgehog, acts as a signaling region that controls outgrowth and pattern formation, and ultimately differentiates into the urethral tube (Martin, 2011). Reviewing the literature, there is no evidence found of a relationship between congenital adrenal hyperplasia and the occurrence of the pseudophallus (Aboodi and Al-Jadeed, 2005). However, accumulation of the steroid precursor 17-hydroxyprogesterone and shunting of this precursor into the pathway for androgen biosynthesis, leading to high levels of androstenedione that are converted outside the adrenal gland into testosterone due to congenital adrenal hyperplasia, could affect the development of the male genitalia (Behrman et al, 2004). Our understanding of the mechanisms of genital development still lags far behind pseudodiphallus anomaly, and major questions remain to be answered, including the molecular nature of the signals that initiate genital budding, sustain outgrowth, induce tissue polarity and orchestrate urethral tubulogenesis (Martin, 2011; Gozar et al. 2013). The complete aplasia of the penile deep Buck’s fascia and the superficial Dartos fascia and hypoplasia of the urethral stratified
columnar epithelium along with complete absence of the pinle folded recesses in the urethra in the histological examination of tissue specimens indicate the dysgenesis of tissue in the embryogenesis stage of development.

5. Conclusion

Penile-like tissue shows a fundamental dysgenesis of major structural elements. Pseudophallus might better be used to describe the rare cases of accessory, penile-like tissue that does not retain the histological and anatomical structure of a normal penis.

References


