



Letter to the Editor

Hypospadias surgery, erectile dysfunction and the distal ligament



I read with great interest the article recently published in the Journal of Pediatric Urology titled “Erectile dysfunction in patients undergoing multiple attempts at hypospadias repair: Etiologies and concerns” [1]. The author suggests that the combination of congenital, surgically induced, and aging defects leads to the early onset of erectile dysfunction (ED) in patients who have failed multiple attempts to repair hypospadias. They found that repeated direct visual internal urethrotomy (DVIU) to treat urethral stricture was significantly associated with ED and strongly recommend abandoning repeated DVIUs. It is interesting to see the high incidence (100%) of ED in patients with distal 1/3 penile shaft hypospadias (possibly with meatal stenosis) treated with more than one DVIU. Although the author did not address, we would like to point out the similarity of the DVIU to the TIPU (tubularised incised plate urethroplasty) and their deleterious effects on the distal ligament (corporo-glans ligament).

The tunica albuginea of the corpus cavernosum and corpus spongiosum are composed of elastic and collagen fibers that provide flexibility, rigidity, as well as compliance and resilience to the penis during tumescence and detumescence [2]. The extensions of tunica albuginea transform into two functional structures at the glans level; 1) the distal ligament above and 2) the septum glandis around the fossa navicularis and between the glans wings [3,4]. The distal ligament is a ligamentous structure that is an extension of the tunica albuginea of the corpus cavernosum and creates a stable connection to the glans. It is usually considered to contribute to the flexibility and rigidity of the glans penis and to bear the buckling pressure created during sexual intercourse [2]. Thus, the ligamentous structures within the glans provide a complex infrastructure, which contribute to the stability and elasticity of both the glans and the glanular urethra [3,4].

In the author’s series, distal hypospadias is the second most common type of hypospadias treated by division of the urethral plate and repeated DVIU that resulted with ED. The location for DVIU, made by single or multiple incisions at 12-o’clock position, corresponds exactly to the position of the distal ligament. Actually, it is the same location for deep midline glans incision of TIPU, a standard and major component of the most widely used technique for hypospadias repair [5]. However, it is known that the anatomical location and histological components of the distal ligament are analogous to the baculum and that its dysfunction would impair the stability and proper penile thrust [2–4]. We agree with the author that repeated surgical procedures lead progressive loss of corporal elasticity and increase the ageing of the penis. In addition, a relatively late onset of ED can be correlated with progressive loss of penile stability, as the surgically induced injury to the distal ligament persists with repetitive trauma during intercourse. We therefore believe that iatrogenic damage to the distal ligament may be the primary cause of ED in patients with midline glans incision and/or multiple attempts to hypospadias repair.

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