



## The treatment of ventral penile chordee without hypospadias by dorsal midline plication in an adolescent boy

Soner Coban, Muhammet Guzelsoy, Ali Riza Turkoglu, Murat Aydos

**Abstract** Herein we report of a case with isolated ventral penile chordee who underwent dorsal midline plication procedure. We aimed to present our experience and to review of the literature on current management.

**Key Words** Penile chordee; penil urethra; dorsal midline plaction; tunica albuginea.

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### INTRODUCTION

The term chordee without hypospadias is used when the meatus is located at the tip of the glans penis, yet prepuce is distorted and, ventral penile curvature is associated with abnormalities of the fascial tissues, corpus spongiosum, or both [1].

Penile curvature is a spectrum of disease most commonly associated with hypospadias, but is not uncommon in boys with an orthotopic meatus. Given that chordee occurs in the absence of hypospadias and that some boys are not diagnosed until later in life when the foreskin is retracted, the true incidence of chordee is substantially high, 4–10% of male births [2]. Great variety exists as to the correction of chordee or the treatment for

*From the Department of Urology, Sevket Yilmaz Education and Research Hospital, Bursa, Turkey*

**Corresponding Author:**

*Soner Coban, MD, Specialist.*

*Sevket Yilmaz Education and Research Hospital,*

*Department of Urology, Bursa, Turkey.*

*E-mail: sonercoban75@myinet.com*

*Phone: +90 224 295 50 00*

*Accepted for publication 17 April 2014*

corporal disproportion, including plicating the elongated corporeal fascia of the penis. In this report, we present a case of chordee without hypospadias treated by dorsal midline plication (DMP).

### **CASE REPORT**

A 17-year-old adolescent boy came to our department complaining of forward curvature of the penis for the last two years. He stated that he had the habit of keeping his penis since the beginning of adolescence because ashamed of erection. On examination, no palpable lesion was detected on corpora cavernosa. Ultrasonography and color Doppler study of the penis was performed showing no significant anomaly or calcification. DMP was planned opposite the point of maximum curvature. The procedure was performed under general anesthesia at the outpatient basis. A Foley catheter was inserted. After a circumferential subcoronal incision, the penile skin was degloved to the penoscrotal junction. No sign of any trauma or abnormal tissue was detected on corpora cavernosa.

Any existing residual subcutaneous adhesions and scar tissue were resected. An artificial erection test was induced, with injection of isotonic saline solution to the corpora cavernosa using a 25-gauge needle. A 60 degrees forward chordee of curvature was measured during artificial erection, and the point of maximal curvature was marked. DMP was performed by longitudinally incising the tunica albuginea and placing two parallel, 3-zero polypropylene stitches to approximate the edges together, as described by Baskin and Duckett [3]. After completing plication, a second artificial erection was performed to confirm adequate straightening of the penis. The patient was given intravenous cephazolin before operation. Oral antibiotics were continued as long as the five days. A compressive wound dressing was wrapped around the penis for 48 hours. Recurrent chordee or shortening of penis was not defined during 1, 4 and 8 weeks follow-up period.

## DISCUSSION

The cause of chordee is reported to be congenital or acquired. Congenital form results from abnormal development of the tissues surrounding the urethra in the embryo, and not from any parental action before or during pregnancy. Young [4] first described chordee and proposed that a congenitally short urethra was responsible, but Devine and Horton [5] raised their theory that chordee without hypospadias resulted from dysgenesis of fascia surrounding the urethra [2]. They further classified chordee into 3 groups according to the layers affected, namely group I (with deficient corpus spongiosum, dartos, and Buck fascia), group II (with deficient dartos and Buck fascia), and group III (with only dartos fascia affected). Kramer et al. [6] found that corporal disproportion was another principal cause of chordee, and they classified this condition as group IV chordee without hypospadias. Kramer's classification system had been widely adopted until 1998, when Donnahoo et al.

[7] presented their classification of penile curvature without hypospadias. They have suggested that the shortened urethra caused chordee, and have classified as group V chordee [8]. We assumed our patient as in group III.

Acquired chordee can be a result of overzealous circumcision, other penile surgeries, or trauma to the penis, such as buckling trauma during intercourse or overt penile fractures. Peyronie's disease is one form of an acquired curvature of the penis, and is not considered to be congenital [9]. In our patient, there was no history of trauma or surgery, but the patient's history revealed that he had a habit of keeping his penis because ashamed of erection since the beginning of adolescence. There was no sign of any trauma or abnormal tissue during surgery.

Many techniques have been proposed for the correction of the curvature. The choice of which to use often depends more on the habits and personal preferences of the

surgeon than on the clinical features of the patient. Currently, the most widespread techniques are aimed at shortening the convex side, while techniques aimed at lengthening the concave side have been almost totally abandoned due to the possibility of retraction of the scar with consequent relapse of the curvature [10]. In the technique of skin bridge and frenular release, the dorsal tilting of the glans can be corrected by releasing the skin bridging or release the frenulum responsible for ventral deflection [2]. The principle of plication is the next simplest technique for correcting curvature. Following degloving, the plication is applied opposite to the point of maximum curvature determined during the artificial erection. Heineke (1886) and Mikulicz (1887) pyloroplasty method was applied by Nesbit (1965), who excised diamond-shaped wedges at the point of maximum curvature [11]. The Nesbit procedure was been modified by Yachia [12], and consists in making single or multiple 1 cm longitudinal incisions along

the convex side of the tunica, which are subsequently closed horizontally.

Baskin and Lue [13] to provide preservation of neurovascular bundle described DMP with one or multiple parallel sutures. Potential disadvantages with this technique include limited applicability to mild-moderate penile curvature and poor efficacy when used in older boys, as the midline plication sutures will probably not hold up to rigid erections [2].

Apart from these, numerous methods have been described to correct penile curvature especially in Peyronie's disease. Corporeal plication is another technique for correcting penile curvature, which was described by Essed and Schroeder [14].

An example is the modified tunica albuginea plication, which Levine et al. [15] adapted from the originally described procedure by Baskin and Duckett [3]. To correct severe penile curvature, various grafts have been used. In our patient, nor serious corporal anomaly or any plaque was observed after degloving of prepuce during operation,

and we chose DMP with two parallel sutures to prevent neurovascular damage.

Our patient satisfied with the results after surgery, no evident shortening and recurrence were detected, he did not describe sensory loss, and although knots were palpable, he was not disturbed. In conclusion, penile chordee is relatively common condition. Various types chordee can be treated by different methods. According to the literature and our one case experience, DMP is simple, safe and successful method to repair ventral chordee.

#### CONFLICT OF INTEREST

**None declared.**

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