Shaeer's Corporal Rotation for Length-Preserving Correction of Penile Curvature: Modifications and 3-Year Experience

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ABSTRACT

Introduction. Correction of penile curvature by corporal rotation enabled the correction of 90 degrees ventral curvature with neither shortening nor erectile dysfunction. However, some limitations were described, and only one case was reported upon.

Aim. This work described a 3-year experience with corporeal rotation, the modifications addressing and eliminating its drawbacks and limitations, as well as the long-term follow-up of 22 patients.

Methods. Modified corporeal rotation was performed in 22 patients with various degrees of curvature. Degree of deviation, erect penile length, symmetry, and erectile function were evaluated and compared pre- and postoperatively.

Main Outcome Measures. Correction of curvature, resultant sexual function, penile length, and girth.

Results. Full correction of curvature was achieved in 20 out of 22 patients, with no shortening, asymmetry, or erectile dysfunction. Residual curvature in two patients was no more than 10 degrees.

Conclusions. Corporal rotation can restore straightness to the penis with no loss in phallic length, asymmetry, or erectile dysfunction. While a variety of surgical techniques are feasible for the correction of milder degrees of curvature, we believe that severe degrees should be spared the shortening and corrected by corporeal rotation.

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Key Words. Curvature; Rotation; Penis; Penile

Introduction

Penile curvature has a cosmetically negative effect, leading to a distorted body image. Greater degrees of curvature can make intercourse difficult, painful to both partners, or—on occasions—impossible. Congenital penile curvature is relatively common, occurring in 4–10% of males unaccompanied by hypospadias [1,2], and in 0.8% accompanied by hypospadias [3].

Surgical correction is the only solution for curvature of a considerable degree. For decades, classic surgical techniques for correction of curvature have served the purpose in milder cases with satisfactory results and acceptable complications. Those included Nesbit procedure [4], modified Nesbit technique [5], tunica albuginea plication [6], and interposition grafting [7], among others. However, severe degrees of curvature aggravate the complications, pushing those techniques to the edge of infeasibility.

Shortening the convex aspect of the tunica albuginea in Nesbit, modified Nesbit, and plication techniques results in a shorter penis. The resultant loss of shaft length can be unacceptable in case of severe curvature. On the other hand, grafting the concave side has the consequences of graft contraction [8] and erectile dysfunction as a result of venous leak [9].

Shortening-free correction of penile curvature in adults by corporal rotation was first published in 2006 [10]. The basic principle was shifting the concavity of both corpora cavernosa from the ventral aspect of the penis to the lateral aspects in opposition, such that they flex against each other rather than synergistically, thereby neutralizing

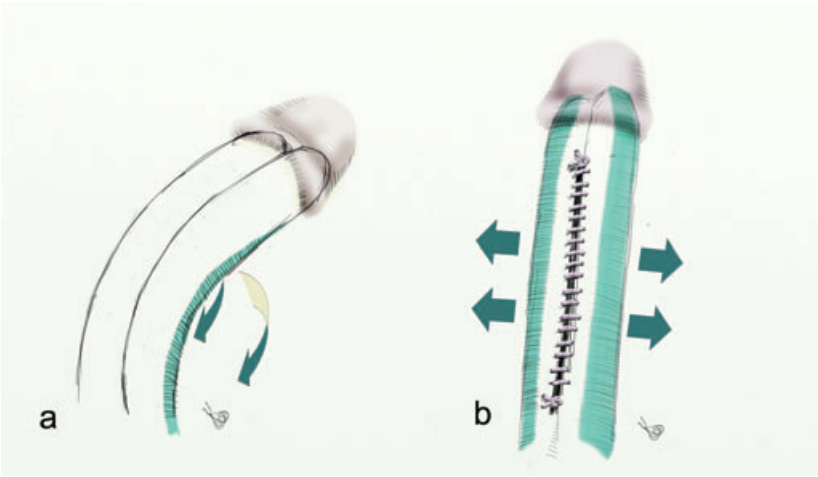

Figure 1 Before rotation, the flexion forces of both corpora (darker areas) act synergistically (arrows) to bend the penis ventrally (A). Rotation shifts the flexion force of each corpus to its lateral aspect (darker areas), acting against and neutralizing each other (arrows) (B).

their curvature-inducing effect (Figure 1). A case of 90 degrees curvature was fully corrected with no impact on length or rigidity [10]. Nevertheless, the technique had its limitations and its results could not be verified by just one case.

This work describes a 3-year experience with corporeal rotation, the modifications addressing and eliminating its drawbacks and limitations, as well as the long-term follow-up of 22 patients.

Methods

Modified corporeal rotation was performed in 22 patients with congenital curvature. Degree of deviation, erect penile length, girth symmetry, and erectile function were evaluated prior to surgery and 8 months postoperatively.

Patient Characterization and Measurements

Twenty-two adult patients with penile curvature were selected for the procedure. All patients had congenital ventral curvature without hypospadias ranging from 25 to 90 degrees in the erect state, with an average of 66 degrees (Table 1). Age range was 18–24.

Preoperative evaluation of degree of deviation, erect penile length, girth symmetry, and erectile function was performed by intracorporeal injection of prostaglandin E1 (ICI). This revealed the fore-mentioned degree of deviation, an average erect penile length of 15.4 cm, equivalent proximal and distal erect girth, and excellent erectile function (E5 after an average of 6 minutes from injection, lasting for an average of 40 minutes) in all patients (Table 1).

The degree of deviation was measured by applying a white board to the lateral aspect of the erect penis, marking the contour of the erect penis on the board, dividing that contour to a proximal part and a distal part relative to the point of maximum curvature, projecting a longitudinal axis for each part, and measuring the angle between the two axes by compass. Erect penile length was measured on the lateral aspect, from the pubic bone to the point of maximum curvature (Figure 2), and from that point to the tip of the glans (Figure 3). Erect penile girth was measured by tape, proximal and distal to the point of maximum curvature to check for symmetry and equality.

To evaluate sexual function further, the International Index of Erectile Function (IIEF-15) ques-

Table 1 Preoperative measurements

Patient number	Angle	Erect length	Rigidity upon ICI
1	40	14.8	E5
2	25	14.0	E5
3	35	17.0	E5
4	40	16.0	E5
5	45	18.0	E5
6	55	14.9	E5
7	50	16.0	E5
8	40	15.1	E5
9	50	15.0	E5
10	45	15.0	E5
11	90	22.0	E5
12	85	18.0	E5
13	85	14.0	E5
14	80	18.0	E5
15	85	12.0	E5
16	90	14.0	E5
17	80	11.5	E5
18	75	16.0	E5
19	90	17.8	E5
20	90	12.0	E5
21	88	15.6	E5
22	90	13.0	E5
Average	66.0	15.4	

ICI = intracorporeal injection of prostaglandin E1.