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Long-term results after a new corporoplasty based on stratified structure of tunica albuginea for the treatment of congenital penile curvature

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Introduction: The recurrence of congenital penile curvature (CPC) after correction is reported to be between 10 and 20% in patients who have had a 16-dot repair or were operated by Essed-Schroeder method. After operations by Nesbit or Yachia methods recurrence rate is lower (between 5 and 15%) but invasiveness is greater because corpora cavernosa are opened. In 2006 authors proposed less invasive procedure in which only elliptical fragment of external (longitudinal) layer of tunica albuginea is excised (internal - transverse - layer is preserved) and both layers of the tunica are then sutured over invaginated internal layer (corpora cavernosa were not opened).

Materials and Methods: From 2006 to 2011 authors operated on 90 adult men with CPC. Ventral curvature was detected in 50 patients, lateral in 29, dorsal in 11. Degree of curvature qualified for correction was from 30 to 90 degrees (median - 50 degrees). Skin and tunica dartos were incised longitudinally on convex surface of curvature. For assessment the angle of curvature - after compressing base of penis with a tourniquet - artificial erection was produced by saline injection into cavernous body. After the tourniquet was relieved next steps of operation were performed on penis in flaccid state. To achieve support necessary for making tunical incisions assistant pressed with a finger against concave surface of penis. In ventral curvature dorsal neuro-vascular bundles (NVB) were separated from tunica albuginea. Elliptical fragments of external layer of tunica were excised (internal layer is preserved). The tunica albuginea was sutured with absorbable sutures which went through both layers of tunica invaginating its internal layer. In all patients straightening of penis was always checked by artificial erection. If curvature was still present next excisions of elliptic fragments of external layer of tunica and sewing of its margins are done until penis was straight. In dorsal curvatures excisions were done on both sides of urethra. In lateral penile curvatures convex penile surface is shortened using above mentioned method. Antiandrogens are given orally 3 days before and 14 days after the operation.

Results: Follow-up was from 12 to 72 months. The penis was completely straight in 88 of 90 patients. In 2 patients (2,3%) recurrence of 15-20 degrees was detected (initial curvature in these patients was 60 and 70 degrees, respectively). Redo surgery was done in one individual at the patient's request. Glandular sensation loss or erectile dysfunction was not detected in any patient during period of observation.

Conclusions: New operation for correction of CPC which consists of excision of elliptical fragment of external layer of tunica albuginea and invagination of internal layer gives good short and long-term results. Surgery done without penetrating of the corpora cavernosa is minimally invasive, which diminish potential risk of complications, especially intra- and postoperative bleeding. Familiarity with anatomy of tunica albuginea is mandatory for applying this approach.