

prostatectomy specimens. Although these preoperative biopsy parameters were significant in linear regression models, none was sufficient as a single predictor of tumor volume.

Editorial Comment

The study by Poulos et al. showed that multiple pathologic findings seen in needle biopsies are predictive of final volume in radical prostatectomy specimens. The authors used the grid method for measuring tumor volume. Some institutions have calculated the tumor volume accurately, using computer-assisted image analysis systems. Because this method is not feasible for the routine clinical practice, other investigators have proposed alternative simpler means. The grid method is one of these alternative simpler means that measures tumor extent.

A number of studies have documented that the tumor extent, the volume or the percentage of prostatic tissue involved by the tumor within the prostate gland may be important prognostic indicators. However, the subject is controversial. Although most authors agree that tumor extension (percentage of carcinoma or tumor volume) in patients with prostate carcinoma should be reported in radical prostatectomies because of its prognostic importance, in some analyses, tumor size has not been considered to be an independent predictor of tumor recurrence (1,2).

References

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INVESTIGATIVE UROLOGY

Intracavernosal injection of vascular endothelial growth factor improves erectile function in aged rats

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Eur Urol. 2004; 46: 403-7

Objectives: To investigate whether intracavernosal injection of vascular endothelial growth factor (VEGF) can restore erectile function in the aging rat.

Materials and Methods: Ten young (4-5 months) and 30 old (24 months) Sprague-Dawley male rats were used. The old rats were divided into 3 groups: vehicle-only (phosphate buffered saline plus 0.1% bovine serum albumin; n = 10), VEGF 1 microg/kg (n = 10), and VEGF 10 microg/kg (n = 10). At 2 and 4 weeks after

treatment, erectile function and histology were evaluated by hemodynamic study, histomorphometric analysis, and immunohistochemistry.

Results: After 4 weeks of treatment, the ratio of peak intracavernosal pressure to systemic arterial blood pressure in response to neurostimulation was significantly higher in both the VEGF 1 microg/kg (79.9 +/- 7.7%) and the VEGF 10 microg/kg group (76.8 +/- 5.8%) compared to the vehicle-only group (63.1 +/- 8.5%; $p < 0.05$). The percentage of cavernosal smooth muscle was significantly higher in the VEGF 10 microg/kg group (16.1 +/- 1.4%) compared to the vehicle-only group (12.8 +/- 2.2%; $p = 0.047$). VEGF treatment in old rats increased e-NOS and VEGF expression in both treatment groups.

Conclusion: Intracavernosal injection of VEGF appears to restore smooth muscle integrity and improve erectile function in aged rats.

Editorial Comment

This is an interesting and welcome study in the era of tissue engineering techniques. After old rats treatment as described, the authors elegantly evaluated through hemodynamic study, histomorphometric analysis and immunohistochemistry, whether an intracavernosal injection of VEGF could restore erectile function and whether it was related to trabecular structural changes in aged rats.

The authors found that intracavernosal injection of VEGF resulted in significant increases in intracavernous pressure in response to neurostimulation after 4 weeks in both VEGF treatment groups. VEGF treatment in old rats increased not only e-NOS and VEGF expression in endothelial lining, but also the percentage of corpus cavernosal smooth muscle. Thus, intracavernosal injection of VEGF improves penile erectile quality in aged rats.

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Fibrin glue for the suture-less correction of penile chordee: a pilot study in a rabbit model

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BJU Int. 2004; 94: 433-6

Objective: To evaluate the use of fibrin glue as a scaffold for patching defects in the tunica albuginea in a rabbit model for a future application in correcting chordee.

Materials and Methods: Nine New Zealand white male rabbits were utilized. All had a 15 x 5-mm defect created in the ventral tunica albuginea. Fibrin glue (1 mL) was applied to cover the defect in tunica albuginea and the penile skin closed with a continuous 5/0 chromic catgut suture. Animals were killed in groups of three at 2, 6 and 12 weeks afterward. The evaluation included an artificial erection test with intracavernosal injection of prostaglandin E1 (5 microg), cavernosography and histopathological examination of sections of the penis stained with haematoxylin and eosin or Masson trichrome.

Results: None of the rabbits died during the procedure or developed bleeding or haematoma afterward. All animals had straight erections on testing with prostaglandin (5 microg). There was no evidence of corporal narrowing or venous leakage on cavernosography. Histopathological evaluation showed evidence of the fibrin sealant layer, with angiogenesis and a cell infiltrate at 2 weeks. At 6 and 12 weeks there was completely normal regeneration of the tunica albuginea.

Conclusions: In this pilot study in a rabbit model the haemostatic effect of fibrin glue was confirmed on covering a defect in the tunica albuginea. Moreover, there was regeneration of normal tunica albuginea with no scarring at 6 weeks and maintained at 12 weeks. Further well-controlled studies are required before using fibrin glue for corporal body grafting to treat chordee.

Editorial Comment

Many materials have been investigated for corporal body grafting in surgical correction of chordee and Peyronie's disease (porcine small intestinal submucosa and tunica acellular matrix, as examples). This article evaluated the feasibility of using a commercially available fibrin glue ('Tisseel', Baxter Healthcare Corp., Irvine, California) for covering corporal body defects, with potential application in the surgical management of severe chordee. In rabbits, the results were excellent. Fibrin glue may be considered a suitable substance for corporal body grafting in the future.

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RECONSTRUCTIVE UROLOGY

Complete primary repair of bladder exstrophy: initial experience with 33 cases

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J Urol. 2004; 172(4 Pt 1): 1441-4; discussion 1444

Purpose: We evaluated our initial experience with complete primary repair of bladder exstrophy in 33 children.

Materials and Methods: Between 1998 and 2001, 33 children with classic bladder exstrophy were treated with 1-stage primary repair for the first time in all except 4, who had undergone previous failed initial bladder closure. Our series included 26 boys and 7 girls with a mean age of 2 months (range 3 weeks to 14 months). The bladder was closed in continuity with the urethra and complete penile disassembly was used for epispadias repair. Anterior transverse innominate osteotomy was performed in all cases. Combined general and caudal anaesthesia were applied in all cases with an indwelling epidural caudal catheter in 7.

Results: Median followup was 42 months (range 24 to 62). Enterocystoplasty was needed in 3 cases during primary repair of a small bladder plate. Wound dehiscence was not recorded. Bladder neck fistula was reported in 2 children, while urethral fistula was recorded in 1 boy. Abdominal ultrasound detected no hydro-nephrosis in all except 3 patients. Voiding cystourethrogram showed vesicoureteral reflux in 6 patients. No loss of renal function or febrile urinary tract infection was recorded. A dry interval of 3 hours or greater was reported in 24 children (72.7%), while 9 who were incontinent of urine after failed toilet training needed other procedures to achieve continence.

Conclusions: Complete primary repair with penile disassembly provides a good approach to achieve this purpose without the need for bladder neck reconstruction in some cases. Selection of the proper surgical technique together with adjunctive procedures such as osteotomy and a pain-free early postoperative period can maximize the chance of successful exstrophy repair.