

Male and Female Sexual Function and Dysfunction; Andrology

Prospective Evaluation of Sexual Function in Patients Receiving Cryosurgery as a Primary Radical Treatment for Localized Prostate Cancer

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Objective: To evaluate prospectively the sexual function of patients undergoing cryosurgery as a primary radical treatment for localized prostate cancer, as the development of 17 G cryotherapy probes has improved the delivery of this treatment, but one of the side-effects of cryosurgery is the development of erectile dysfunction (ED). **Patients and Methods:** Between July 2003 and May 2008, 53 patients were treated using an argon-based third-generation cryotherapy system (Oncura, Arlington Heights, IL, USA). Prospective data were collected at 6 weeks, 3 months, then 3-monthly up to 1 year and subsequently 6-monthly. Patients were followed up for up to 54 months, with a median (mean) follow-up 36 (30.5) months. **Results:** All 53 patients were followed after receiving cryosurgery as primary treatment for prostate cancer; 51 (96.3%) had ED at 6 weeks while two (3.7%) were experiencing partial erections. By 9 months one (2.4%) of 42 patients was fully potent using phosphodiesterase type-5 inhibitors, and six (14.3%) were experiencing partial erections. By 18 months eight (21%) of 39 patients followed up had regained full potency and by 24 months eight (24%) of 33 patients were fully potent and three (9%) experienced partial erections. **Conclusion:** While ED is a significant side-effect of cryotherapy, a considerable proportion of patients who have no ED before treatment (39%) recover full sexual function afterward. Focal nerve-sparing cryosurgery might be the way forward in an attempt to preserve erectile function in men who had no ED before treatment. Erectile aids should be made available for those patients for whom sexual dysfunction compromises the quality of their life and relationships.

Editorial Comment: These data suggest that patients undergoing cryosurgery may experience similar short and long-term erection problems akin to patients who undergo brachytherapy or nerve sparing radical prostatectomy. Penile rehabilitation might be a reasonable early option for these patients. The important findings are that by 18 months 8 of 39 patients (21%) followed had regained full potency, and by 24 months 8 of 33 patients (24%) were fully potent and 3 (9%) experienced partial erections.

The goal of any of these modalities, cryosurgery, brachytherapy or radical surgery, is to cure the cancer. ED is a recognized consequence of all of these therapies. It is unclear whether brachytherapy affords an advantage to patients with respect to post-procedural ED. Our future strategic goals need to include modalities (either preoperative, intraoperative or postoperative) to improve post-procedural ED.

Allen Seftel, M.D.

Randomized Phase II Trial Evaluation of Erectile Function After Attempted Unilateral Cavernous Nerve-Sparing Retropubic Radical Prostatectomy With Versus Without Unilateral Sural Nerve Grafting for Clinically Localized Prostate Cancer

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Background: Nonrandomized studies of unilateral nerve-sparing (UNS) radical prostatectomy (RP) have reported improved recovery of erectile function if the sacrificed cavernous nerve is reconstructed with a sural nerve graft (SNG). **Objective:** To determine whether UNS RP plus SNG results in a 50% relative increase in potency at 2 yr compared to UNS RP alone. **Design, Setting, and Participants:** The study enrolled patients from October 2001–May 2006 from a single academic center and was randomized, open label. Participants were men with localized prostate cancer recommended for UNS RP, less than 66 yr old, normal baseline erectile function, and willing to participate in early erectile dysfunction (ED) therapy. Patients were followed up to 2 yr. **Intervention:** Patients underwent UNS RP and ED therapy starting at 6 wk: oral prostaglandin type-5 (PDE5) inhibitor, vacuum erection device (VED), and intracavernosal injection therapy. In the SNG group, a plastic surgeon performed the procedure at the time of RP. **Measurements:** The ability to have an erection suitable for intercourse with or without a PDE5 inhibitor at 2 yr. The hypothesis was that SNG would result in a 60% potency rate compared to 40% for controls (80% power, 5% two-way significance). **Results and Limitations:** The trial planned to enroll 200 patients, but an interim analysis at 107 patients met criteria for futility and the trial was closed. For patients completing the protocol to 2 yr, potency was recovered in 32 of 45 (71%) of SNG and 14 of 21 (67%) of controls ($p=0.777$). By intent-to-treat analysis, potency recovered in 32 of 66 (48.5%) of SNG and 14 of 41 (34%) of controls ($p=0.271$). No differences were seen in time to potency or quality of life scores for ED and urinary function. Limitations included slower-than-expected accrual and poor compliance with ED therapy: <65% for VED and <40% for injections. **Conclusions:** The addition of SNG to a UNS RP did not improve potency at 2 yr following surgery.

Editorial Comment: These authors are to be congratulated for their effort in reporting these data. Sural nerve grafting offered no benefit in restoration of erectile function in men who had undergone unilateral nerve sparing radical prostatectomy and unilateral sural nerve grafting (vs a nonsural nerve graft control group).

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Randomized, Double-Blind, Placebo-Controlled Study of Postoperative Nightly Sildenafil Citrate for the Prevention of Erectile Dysfunction After Bilateral Nerve-Sparing Radical Prostatectomy

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Four weeks after bilateral nerve-sparing radical retropubic prostatectomy, men with normal erectile function before surgery were randomized to double-blind sildenafil (50 or 100 mg) or placebo nightly

for 36 weeks, followed by an 8-week drug-free period before assessment of erectile function. Enrollment was prematurely ceased and only 76 men completed because, assuming a placebo response rate similar to the published literature (for example, 34% in meta-analysis), the 25% response at blinded interim review suggested a lack of treatment effect. On the contrary, spontaneous erectile function (a combined score of ≥ 8 for questions 3 and 4 of the International Index of Erectile Function and a positive response to 'Were erections good enough for satisfactory sexual activity?') occurred in only 4% of the placebo group ($n=1$ of 25) versus 27% ($n=14$ of 51, $P=0.0156$, Fisher's exact test) of the sildenafil group. Nightly sildenafil administration for 36 weeks after surgery markedly increased the return of normal spontaneous erections.

Editorial Comment: This study sets the standard for penile rehabilitation following prostatectomy. Many important points can be gleaned from this article. Daily sildenafil is important in potential restoration of erectile function following radical prostatectomy. The dose is approximately 50 mg and the timing is 36 weeks. Additionally, the spontaneous restoration of erections was quite low, at only 4% in the placebo group, contradicting to some degree the current published literature regarding post-prostatectomy erectile function. This startling figure, 4%, might suggest the need for reappraisal and reassessment of erectile function following radical prostatectomy.

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Erythropoietin Promotes Erection Recovery After Nerve-Sparing Radical Retropubic Prostatectomy: A Retrospective Analysis

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Introduction. Erectile dysfunction persists as a major functional complication of nerve-sparing radical prostatectomy. **Aim.** To evaluate retrospectively the potential benefit of erythropoietin administration to improve erectile function recovery following radical prostatectomy. **Methods.** Preoperatively potent patients who underwent nerve-sparing radical retropubic prostatectomy between March 2005 and February 2006 elected to receive erythropoietin treatment (40,000 IU subcutaneously, single injection on their preoperative day; treatment group, $N = 15$). A contemporaneous clinically matched cohort comprising patients who elected postoperative standard surveillance only served for comparison (control group, $N = 21$). Phosphodiesterase type 5 (PDE5) inhibitor "on-demand" use was applied. Potency evaluations were monitored by International Index of Erectile Function-5 questionnaires administered preoperatively and at 3, 6, and 12 months postoperatively. **Main Outcome Measure.** Erection recovery. **Results.** Health comorbidities as well as erectile function status were demonstrated to be no different between groups at baseline. Erythropoietin-treated patients demonstrated significantly higher postoperative International Index of Erectile Function-5 questionnaire scores than control group patients at 3, 6, and 12 months postoperatively with or without use of PDE5 inhibitors ($P < 0.05$). At 12 months postoperatively, the percentages of patients performing sexual activity were 87% and 68% of erythropoietin-treated and control patients, respectively ($P = 0.213$), although the erythropoietin-treated patients had a significantly greater ability to perform sexual intercourse with minimal or no difficulty ($P < 0.05$). **Conclusion.** Erythropoietin administration on the preoperative day before undergoing nerve-sparing radical prostatectomy in men reporting normal erectile function preoperatively may confer improved erectile function recovery postoperatively.

Editorial Comment: This is an intriguing study, albeit small. The rationale for this use of erythropoietin administration 1 day before nerve sparing radical prostatectomy is somewhat elusive. Further study in this area is needed.

Allen Seftel, M.D.

Robotic Radical Prostatectomy in Patients With Preexisting Inflatable Penile Prosthesis (IPP)

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Purpose: We present our initial experience with performing robotic-assisted prostatectomies in men with a 3-piece inflatable penile prosthesis with a pelvic reservoir. **Material and Methods:** Four patients underwent transperitoneal robotic-assisted radical prostatectomies with a penile prosthetic implant in place. The reservoir was left inflated for easy identification. A flaccid reservoir may be more difficult to identify, and be prone to damage. The reservoir was left attached to the abdominal wall. Dissection was performed outside the fibrous capsule of the reservoir. The tissue around the capsule of the reservoir peeled off without difficulty. Cutting current close to the capsule can be used if needed as per American Medical System with no limit to voltage. The penile prosthesis is then inflated to empty the reservoir creating more prevesical space and preventing the reservoir from obscuring visualization. The remaining portion of the procedure is completed using our standard technique. After completing the urethrovesical anastomosis using the 16 French Foley, the prosthesis is cycled under direct vision and the penile prosthesis is deflated (reservoir full). The prosthesis is not used for 6 weeks to prevent stretching of the urethrovesical anastomosis. **Results:** All patients ($n = 4$) had no reported complications and all prostheses are functioning properly. The margin status was negative postoperatively. **Conclusion:** Robotic prostatectomy is technically feasible in patients with inflatable penile prostheses by surgeons experienced in robotic surgery. However, the presence of an indwelling penile prosthesis does increase the complexity of surgery.

Editorial Comment: This is an interesting surgical nuance for those who perform robotic prostatectomy. The presence of an inflatable penile prosthesis should not preclude the robotic procedure.

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Male Infertility

Varicocele Repair: Does it Still Have a Role in Infertility Treatment?

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Purpose of Review: To review the role of varicocele repair in the treatment of male infertility. **Recent Findings:** Varicocele is a common finding among men with infertility and its repair has been a mainstay of surgical therapy in these men. Although each year multiple discoveries are made concerning the mechanism of varicocele-induced infertility, the exact pathophysiologic mechanism remains unknown. This study will update significant findings in regard to the pathophysiology of varicocele-induced infertility, such as increased expression of the aquaporin receptor and new findings related to testicular blood flow and vas deferens motility. Recent information concerning the effects of apoptosis and oxidative stress are also reviewed. With regard to the efficacy of varicocele repair, previous meta-analysis of the available data has been misleading due to improper selection criteria. Available clinical data are critically evaluated, with a focus on new meta-analyses that contradict the findings of the Cochrane database review, a study that has been accepted by many as evidence against varicocele repair. **Summary:** We conclude that varicocele repair not only is an effective treatment for appropriately selected patients but can also be the most cost effective option.