
Transrectal Ultrasound Guided Implantation of the ProACT Adjustable Continence Therapy System in Patients With Post-Radical Prostatectomy Stress Urinary Incontinence: A Pilot Study

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Purpose: We evaluate the feasibility and potential advantages of ProACT system implantation using transrectal ultrasound rather than fluoroscopy for guidance.

Materials and Methods: The transrectal ultrasound guided procedure was done between June and October 2005 in 7 patients with a mean age of 68.4 years (range 53 to 76) with mild to severe stress urinary incontinence after laparoscopic transperitoneal radical prostatectomy.

Results: The ProACT system was successfully implanted in all cases without perioperative complications. Time needed to complete the overall procedure was 15 to 30 minutes. All transrectal ultrasound studies performed during the mean followup of 4.2 months (range 2 to 6) confirmed the exact location of the devices.

Conclusions: ProACT system implantation is feasible using transrectal ultrasound for guidance. Transrectal ultrasound enables excellent imaging of all anatomical landmarks during the entire procedure and it seems to provide considerable advantages over fluoroscopy in terms of safety and accuracy.

Key Words: prostate; prostatectomy; urinary incontinence, stress; ultrasonography; urinary sphincter, artificial

Male SUI is a challenging problem following RP. Large contemporary series show incontinence rates over a wide range of 8% to 47%^{1,2} but persistent post-RP SUI after 1 year affects 2% to 5% of patients.³ When rehabilitation methods fail, surgery may be considered. The main surgical options are AUS implantation, urethral bulking injections of various substances, eg autologous fat, silicone and bovine collagen, and male urethral slings.³

AUS implantation is considered the gold standard in patients with moderate to severe intrinsic sphincteric dysfunction. The AUS achieves a continence rate of around 90% in the short and long term.⁴ However, it is costly and has significant complication and revision rates.⁴ Urethral bulking injections are mainly used in patients with mild to moderate SUI but the effect on postoperative continence is limited by poor success rates that decrease with time, often requiring multiple injections.^{3,5,6} Male urethral slings with different techniques using synthetic mesh or allogenic grafts have been developed, showing potential good results, and their efficacy is currently under evaluation.^{7,8}

Treatment for SUI after RP with an entirely new system, that is ProACT, was recently described with promising initial clinical results.⁹ As described by Hubner and Schlarp, system implantation is performed under fluoroscopic guidance and contrast medium is used.⁹ We evaluated the fea-

sibility and the potential advantages of ProACT system implantation using TRUS for guidance, avoiding the use of fluoroscopy and contrast medium.

MATERIALS AND METHODS

The ProACT System

The system is an adjustable permanent implant designed to achieve continence through increased outlet resistance in male patients with SUI. It is composed of an expandable silicone balloon attached to a re-injectable titanium port through a 2 lumen 12 to 14 cm tube. One lumen contains a 15 cm 0.8 mm push wire. Every patient requires 2 balloons, which are placed on either side of the vesicourethral anastomosis just above the pelvic diaphragm. An especially designed, sharp tip, removable trocar contained in a 4.6 mm diameter U-shaped sheath is used to insert the balloons through a transperineal route. The 2 titanium ports are placed into a subcutaneous parascrotal position to allow easy percutaneous access for filling the balloons postoperatively with a 23 gauge non coring needle to a maximum of 8 ml. This allows the device to be adjusted by modifying the level of obstruction needed to achieve continence.

System Implantation

According to Hubner and Schlarp

As described by Hubner and Schlarp, system implantation is performed under fluoroscopic guidance with a cystoscope sheath inserted in the bladder functioning as a guide for correct placement.⁹ The balloons are then filled with con-

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Study received institutional review board approval.

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