

# Advances in Geriatrics

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## Improving Patient Options for Reducing Postprostatectomy Incontinence

**P**rostate cancer is the most common internal malignancy in men.<sup>1</sup> The marked rise in prostate cancer incidence with age, along with its relatively slow tumor growth, makes this malignancy, its diagnosis, and management of particular interest and importance to geriatric practitioners and researchers within the male patient-dominant VA. The newest Geriatric Research, Education and Clinical Center (GRECC) was founded in 1999 and serves both the Birmingham VA Medical Center (VAMC) in Birmingham, AL and the Atlanta VAMC in Atlanta, GA. A major focus of the Birmingham/Atlanta GRECC's research is the clinical, health services, and rehabilitation questions surrounding prostate cancer in elders.

Since prostate specific antigen screening has become more widespread, most prostate cancers are discovered while still localized—when radical prostatectomy (RP) is often regarded as the treatment of choice. Although expected survival after prostate cancer diagnosis is excellent (93% at 10 years), a common postoperative sequela of RP is urinary incontinence.<sup>1-3</sup> Despite innovations in surgical technique, incontinence remains prevalent, negatively affecting quality of life for thousands of prostate cancer survivors.

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Incontinence often improves within days to weeks after surgery, but in many men, it can persist for several months and even years. Patient surveys indicate that 8% to 72% of men report incontinence one year or more following surgery.<sup>4-6</sup> (These rates vary widely due to survey methods, definition of incontinence, and surgical technique.) In the Prostate Cancer Outcomes Study, a population-based, longitudinal cohort study of 1,288 men at one and five years after RP, investigators found incontinence rates of 65% at both time points, with 32% and 26%, respectively, using absorbent pads.<sup>2</sup>

Even when men are fully informed prior to prostate cancer surgery of the possibility of postoperative incontinence, the reality of urine leakage is often worse than they anticipate. The burden of incontinence can be physical (resulting in skin irritation and odor), emotional (resulting in feelings of shame over loss of control of a bodily function), psychosocial (resulting in curtailed social activities and depres-

sion), or economic (based on the cost of pads and diapers). Even transient incontinence can delay resumption of normal daily activities.<sup>7</sup>

### TREATMENT OF PERSISTENT INCONTINENCE

The most common type of incontinence post-RP is stress incontinence, in which leakage is caused by coughing, sneezing, or physical activity.<sup>3</sup> Urge incontinence, in which leakage is accompanied or preceded by urgency, affects less than half of men with postprostatectomy incontinence.<sup>3</sup>

Treatment options for these types of postprostatectomy incontinence include surgery, medications, and behavioral intervention. Some surgical interventions, such as periurethral collagen injections, have limited efficacy.<sup>8</sup> Others, like suburethral slings or artificial urinary sphincters, are reserved for severe incontinence.<sup>9,10</sup> With the availability of commercial sling kits, it is now possible to perform less invasive procedures for persistent incontinence

The VHA's Geriatric Research, Education and Clinical Centers (GRECCs) are designed for the advancement and integration of research, education, and clinical achievements in geriatrics and gerontology throughout the VA health care system. Each GRECC focuses on particular aspects of the care of aging veterans and is

at the forefront of geriatric research and clinical care. For more information on the GRECC program, visit the web site (<http://www1.va.gov/grecc/>). This column, which is contributed monthly by GRECC staff members, is coordinated and edited by Kenneth Shay, DDS, MS, director of geriatric programs for the VA Office of Geriatrics and Extended Care, VA Central Office, Washington, DC.



following prostatectomy, with cure rates of 58% to 62%.<sup>11,12</sup> Many prostate cancer survivors are reluctant, however, to undergo another surgical procedure.

Pharmacotherapy is an option for patients who are experiencing urge incontinence. The types of medications used to treat this condition, however, have high adverse effect profiles.

Behavioral interventions, including pelvic floor muscle rehabilitation, provide an attractive alternative to both surgery and medications. Clinical series have demonstrated 58% to 81% improvements in men with persistent postprostatectomy incontinence.<sup>13-15</sup> The most recent report of the International Consultation on Incontinence (2005) described pelvic floor muscle rehabilitation as beneficial for postprostatectomy incontinence but recommended randomized, controlled trials in sufficiently powered samples to identify its real value.<sup>16</sup>

One such trial is now nearing completion at the Birmingham and Atlanta VAMCs by GRECC investigators. This NIH-funded, two-site, randomized, controlled trial is designed to test the effectiveness, impact on quality of life, and durability of behavioral therapies for persistent postprostatectomy incontinence. Men with incontinence that lasts more than one year after surgery receive eight weeks of one of the following three interventions: a multidisciplinary rehabilitation program (including pelvic floor muscle exercises and bladder control techniques), the rehabilitation program plus biofeedback and pelvic floor muscle electrical stimulation, or a wait-list control condition. This trial, which has completed enrollment, will inform clinical decision making for optimal conservative treatment of postprostatectomy incontinence.

## EARLY POSTOPERATIVE TRAINING

Because incontinence is so predictable after RP, behavioral interventions also

have been implemented in the early postoperative period to help reduce symptom duration and severity. Three adequately powered, randomized, controlled clinical trials of perioperative pelvic floor muscle training programs have shown significant reductions in duration and severity of incontinence after prostatectomy.<sup>17-19</sup> The most intensive trial tested a program of weekly pelvic floor reeducation and achieved a continence rate of

88% at three months, compared with 56% in the control group.<sup>17</sup> A second trial included three intensive therapy sessions administered early in the postoperative period and showed a continence rate of 95% at six months, compared with 65% in the control group.<sup>18</sup> A third trial of pelvic floor muscle exercises taught at one, three, and six months after catheter removal showed a continence rate of 83% at 12 months, compared with 48% in the control group.<sup>19</sup>

## PREOPERATIVE INTERVENTION

Another approach is to initiate intervention preoperatively, so that patients can practice new motor skills before surgery and be more prepared to exercise and use their pelvic floor muscles immediately after catheter removal. Two GRECC investigators have completed a study to test the effectiveness of preoperative biofeedback-assisted behavioral training for reducing the duration and severity of incontinence and improving quality of life in the six months following RP.<sup>20</sup> The NIH-

funded study was a five-year, prospective, randomized, controlled trial comparing preoperative behavioral training to usual care. Patients undergoing RP for prostate cancer were stratified by age and tumor differentiation and randomized either to undergo one preoperative session of biofeedback-assisted behavioral training plus daily home exercise or to participate in a "usual care" control condition consisting of simple postoperative

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instructions to interrupt the urinary stream. The main outcome measures were duration of incontinence (or time to continence, measured by bladder diaries) and absorptive pad use.

Results indicated that preoperative behavioral training significantly reduced the time to continence after surgery ( $P = .03$ ). Median time to continence was 3.5 months in the intervention group and greater than six months in the usual care group. In addition, the intervention reduced the proportion of patients with severe or continual leakage at the six-month endpoint. Six months postsurgery, severe or continual leakage was still present in 19.6% of patients in the control group, compared with 5.9% of those in the intervention group ( $P = .04$ ). Also at six months, 32% of the intervention group were still using pads, compared with 52% in the usual care group ( $P < .05$ ). No differences were found, however, on return to work and usual activities or quality of life measures.<sup>20</sup>

These findings indicate that a single, preoperative session of biofeedback-

assisted behavioral training can hasten the recovery of urine control and reduce the severity of incontinence following RP. The treatment was cost-effective as well. Number needed to treat calculations showed that it was necessary to provide behavioral training preoperatively to only five men to get one additional man out of pads by six months postoperatively.

The Birmingham/Atlanta GRECC investigators are now seeking methods to enhance continence outcomes further by exploring the optimal intensity and timeframe in which to implement behavioral training. One advantage of conducting training before surgery is that patients learn how to control their muscles when they are pain free and sensation is normal. In addition, they are prepared in advance to begin using their muscles immediately after catheter removal. Unfortunately, men who have not yet experienced urine leakage may lack motivation and fail to adhere to the program. After surgery, however, most men leak immediately after catheter removal—and many find this surprising despite having been informed of this possibility. At this time point, they appear to be highly motivated to participate in a solution, but do not yet have the skills for pelvic floor muscle exercise or use.

It may be that the ideal time to initiate training is preoperatively so that men have learned the motor skills for pelvic floor muscle exercise and to integrate exercise sessions into their usual activities. Then, postoperatively, when they are motivated by the experience of urine leakage, they can be taught the skills of using their pelvic floor muscles to prevent stress and urge leakage and follow a program to promote recovery of bladder control.

## AVAILABILITY OF BEHAVIORAL PROGRAMS

Despite the advances in behavioral interventions to improve recovery of

bladder control after prostatectomy, which have reduced the number of men with long-term incontinence, few patients undergoing RP each year receive any type of perioperative rehabilitation training. Few medical centers offer expertise in pelvic floor rehabilitation for postprostatectomy incontinence, and usual care for men after RP includes brief verbal instruction in pelvic floor muscle exercises and reassurance that healing over time will eventually reduce incontinence.

To improve wide access to behavioral intervention, GRECC researchers are developing and testing self-administered programs for perioperative behavioral intervention. We feel such a self-help approach to managing postprostatectomy incontinence has promise to improve continence outcomes on a broad scale—especially given the fact

and brief verbal instruction group ( $P = .6$ ).

The Birmingham/Atlanta GRECC investigators are currently collaborating with the chief of urology at the Birmingham VAMC on a clinical demonstration project to determine the feasibility and effectiveness of a self-administered, perioperative rehabilitation program for men preparing to undergo RP at the Birmingham VAMC. If effective, such a self-help program easily could be disseminated nationally and could result in cost-effective improvements in quality of life for the many men undergoing prostate cancer surgery each year. ●

### Author disclosures

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that Bales and colleagues found outcomes with written and verbal instructions for exercise to be similar to those achieved with biofeedback-assisted pelvic muscle exercise.<sup>21</sup> In their study, published in 2000, they compared continence rates in 100 men undergoing RP who were assigned randomly to one of two groups: one that received a preoperative, biofeedback-assisted, graded pelvic muscle exercise program or one that performed the same exercise without biofeedback, based on written and brief verbal instructions.<sup>21</sup> At six months following surgery, continence rates (defined by the use of one pad or fewer per day) were 96% in the biofeedback group and 94% in the written

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