Noninvasive Therapies for Treating Post-Prostatectomy Urinary Incontinence

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Maintaining urinary continence is an important aspect of patient care for individuals of all ages. Noninvasive therapies are not always acknowledged by reimbursement systems as efficient and effective means of dealing with urinary incontinence (UI). Health care providers’ time is valuable; therefore, it is important to achieve the most for their efforts by using effective methods. As part of a program developed to assist post-prostatectomy patients with UI, practical nursing knowledge as well as useful techniques were developed or modified from pre-existing work to affect successful outcomes. A detailed description of these important components, including initial assessment, behavioral interventions, and subsequent continence outcomes are presented for a population of men recently diagnosed with post-prostatectomy urinary incontinence (PPI).

Program Description
At the San Diego Veterans Administration Healthcare System (SDVAHS), all patients post-prostatectomy are referred to the outpatient continence clinic when their urinary catheter is removed. Within a week of catheter removal, patients are contacted by continence clinic nursing staff via telephone and instructed on starting a program of pelvic muscle exercises (PME) and modifying their fluid intake. Patients are also scheduled for an initial appointment within 2 months of their surgery. After the initial appointment, patients are seen on a monthly basis unless they receive biofeedback and electrical stimulation. Patients receiving biofeedback and/or electrical stimulation are seen for 4 weeks in a row for treatment with monthly followup appointments thereafter.

Assessment
For successful outcomes, a thorough initial assessment is essential to address correctable conditions and identify comorbidities (Joseph & Lantz, 1996). Correctable conditions. One of the most obvious, yet many times overlooked, conditions that causes UI is a urinary tract infection (UTI). A UTI may cause urgency, frequency, and UI. Patients must be advised that these medications may be impeding their ability to be continent. It is never advised to suggest that patients stop their present medications; rather, a recommendation is made to discuss a change in medication with their primary health care provider.

Incorporation of a noninvasive program for both body and mind can lead to successful outcomes in men suffering from post-prostatectomy urinary incontinence. Key factors in the initial assessment and a detailed description of effective, unique treatment interventions for men with post-prostatectomy urinary incontinence are described.
Bowel function affects the bladder. If patients have problems with constipation, pressure on the bladder from a distended bowel will make bladder control more difficult (Hellstrom & Sjoqvist, 1988; Janig & Habler, 2003; Miyazato et al., 2004). Conversely, patients who have diarrhea may be producing less urine since body fluid is being absorbed into the bowel, making less fluid available for urination. Since the bladder is only partially full, the force of stream is poor and often results in difficulty emptying the bladder.

**History and Physical Examination**

Initially it is essential to determine whether the patient has identified the pelvic floor muscles. Without this identification, effective and efficient use of these muscles cannot be achieved. A digital rectal examination with the patient lying on his side will allow the health care provider to assess sensory and motor function. Use of sensory muscles (abdominal, thigh, and buttocks) can be discouraged and proper use of pelvic floor muscles can be verified. It is important to ascertain that patients are using the correct muscles, which can be checked during digital rectal examination when the perianal/rectal area is healed. If patients have impaired sensation, it may be difficult for them to identify the correct muscles; in these patients biofeedback and electrical stimulation may be helpful in initiating correct muscle use.

From extensive clinical experience with this patient population, voiding patterns and absorbent pad use have been observed and effective techniques developed to change unwanted behaviors. A check of voiding patterns is essential. On the initial visit a voiding diary is not available; however, on subsequent visits a voiding diary is used to assist in identifying patterns that need to be altered. If patients are not voiding into the toilet and have relegated the responsibility of toileting to their absorbent products (diapers or pads), condoms, or other devices, then they will *not* be aware of when they need to urinate or when they leak. Absorbent products are a barrier to becoming dry since their design wicks the urine away from the body with an absorbent polymer that is contained within the pad to keep the skin and clothing dry (American Urologic Association, 2005). Individuals do not know when they are leaking and then do not urinate because they feel no need. Use the *initial* pad assessment (how many are being used, type of pad, and degree of wetness) to assist patients in realizing their gradual return to continence. When patients void into the toilet as opposed to just leaking into their pads, part of the evaluation on each visit should include whether patients void with an urge, the strength of the urinary stream, and whether they feel empty at the end of urination. This may also help to identify an early onset of bladder neck contractures post-prostatectomy.

In our experience, fluids are directly linked to voiding patterns and can be effectively evaluated by a voiding diary. The amount, type, and spacing of fluids will affect urine production and the ability of the bladder to handle containment of the fluid. Spacing fluids (6 to 8 eight-ounce glasses) during the day will allow for hydration and adequate fluid production (Pearson, 1993). Avoiding caffeine, carbonation, and sugar substitutes will assist in reducing irritability of the bladder wall. Alcohol, especially beer, may cause more difficulty in containing urine in the bladder since it has a diuretic affect. Many patients avoid fluid intake during the day because they do not want to leak while they are out and about. Consequently, most of their fluids are ingested in the evening; this results in multiple trips to the toilet to void during the night. If awakening to void during the night is a problem, then encouraging patients to drink the majority of their fluids during the day and to limit their fluids after dinner will assist with decreasing multiple voids during the night in this patient population.

It is important to ascertain absorbent pad use including type of pads, number used per day, and degree of wetness. In our experience, patients referred to the continence clinic often focus on UI rather than the (sometimes small) improvements they are making. Many times helping patients remember how many large pads they initially used, as opposed to the smaller drip collectors they are now using, may help them to realize this improvement. Post-prostatectomy patients, both young and old, may only remember how wet they are *now*, not how wet they were when they started the program.

An organized initial assessment will allow all the aforementioned areas to be evaluated and will assist with a solid foundation for developing an individualized, noninvasive continence program for PPI.

**Interventions**

As part of developing techniques for this PPI population, it became evident that patients need to believe that they can take charge of their bodies and stop their urinary leakage. As the health care provider, it is necessary to engage them (give them the “can do attitude”), get their commitment to follow the program (a positive mindset), and then motivate them to act by capturing their intelligence and understanding with support and strength to activate their pro-
gram. Plant the seed. Sometimes patients understand what is being conveyed; however, there are those who have to be told, “You do not have to be the victim. You have control over your body; you just have to take it.” Once they hear this, they are usually eager to learn more about how this can be done.

Repetition. The next step involves informing patients that they are going to “teach their brains” what they want them to do. The brain learns with repetitive exercises (Barnes, Kubota, Hu, Dezhe, & Graybiel, 2005). The “Repetitive Behavior Mantra,” developed by staff in the continence clinic, gives a new twist to a tedious process. The mantra is explained to patients as follows: “The first time you tell your brain to do something, it probably won’t remember; the second time you tell your brain, it ‘may’ remember; the third time you tell the brain, it may remember but there is no certainty; and the fourth time you tell your brain, it will remember.” This simple technique and explanation allows patients to understand what is needed to be done and for how long they need to do it. Most patients are able to use this mantra to incorporate PMEs into activities that are causing leakage and prevent the leakage from recurring. Some patients acknowledge that their brain is a slow learner and they need to repeat the process, but most are able to benefit with one application.

Operant conditioning. After laying the groundwork on how the brain learns, patients are exposed to the concepts of operant conditioning and learning. They are told that when they engage in actions that place extra external pressure on the bladder (bending, lifting, changing position, coughing, sneezing, etc.), they need to analyze “what they are going do” and “how they are going to do it” to prevent urinary leakage by creating extra resistance to counterbalance the extra pressure of movement. Prior to executing these actions, patients are instructed to perform a conscious contraction of the pelvic floor muscles. This basic maneuver is commonly known as a stress-inhibition technique for UI but simplified for this patient population as the extra resistance technique. Since postprostatectomy patients have had the bladder neck supportive mechanism altered due to surgery, utilization of pelvic muscles provides the support and extra resistance when toned and recruited. With repetitive reminders to the brain, this new way of utilizing these muscles with change in position becomes automatic.

To simplify the extra resistance technique, it is made “doable,” and allows patients to succeed. Patients are instructed to focus on a single activity, such as rising from a seated position. For 1 to 2 days, every time they stand, they contract their pelvic floor muscles prior to standing. This conscious reminder to the brain reinforces what has to be done and how it needs to be performed. By the end of the 2nd day, the brain is doing it automatically (unconsciously) and the patient chooses another activity that is causing difficulty with continence. It is imperative that patients know when they are leaking (using less pads and identifying less urinary leakage in those pads) so they address specific activities that cause urinary leakage and eradicate them one at a time.

Patients are taught PME for extra resistance as well as a treatment strategy for urge UI and overactive bladder (see Table 1 for an example of the patient instruction handout used in the continence clinic). By integrating these techniques into daily activities, individuals can use noninvasive, behavioral strategies to teach the brain what has to be done and when it has to do it, thereby eliminating or minimizing PPI.

Adages. To further fortify the psychological framework, it is important for individuals to have a “can do” attitude. In our experience, it is necessary for patients to develop certain attributes that they may have never incorporated into their lifestyle. The first is patience because nearly everyone wants to be continent immediately. To create an atmosphere that allows patients to learn and integrate techniques into their lifestyle, adages (wise sayings) are used to capture their attention. On their first visit to the continence clinic, patients are told, “Your body has been very patient with you all your life, now it is time for you to be patient with your body.” This sets the tone for the fact that activities may need to be done differently, and that patience will be necessary. This verbal message works well since it gives the patient an opportunity to listen to what needs to be done and sets the stage for what needs to be changed.

Men with PPI may exhibit other recurrent behaviors that impede or delay continence. As a continence health care provider, it is necessary to first engage these patients to obtain a commitment that they will participate in the program, and then motivate them to act. The following adages were developed to motivate patients to learn, experiment, and succeed.

For some individuals it is important to emphasize, “Take care of your body so it will take care of you.” Patients may need to be more creative about how to get their bodies to do what they want them to do, especially if agility has decreased. Patients in the continence clinic cannot assume that as their bodies heal that their continence will automatically return; they need to
always leak urine as long as you are, “You will never be dry.” Initially the pad is a saving grace, but eventually becomes a crutch as the brain allocates the responsibility for continence to the pad. Patients are told, “You need to feel wet to be dry.” This advice gives patients permission to be and feel wet so they know immediately when they are leaking and what movement caused the leakage. If they cannot feel the leakage, then they cannot do anything to change it. These are powerful messages that this PPI population needs to hear for motivation and to progress through the program.

Washcloth power. The difficulty of discarding absorbent products in this patient population requires some creativeness on the part of the health care provider to enable risk taking by the patients. Most continence clinic patients are employed either full time or part time; this necessitates devising a patient plan to manage daily activities, address risk taking, avoid social embarrassment, and create a win-win situation.

When patients have strengthened their pelvic floor muscles (usually this occurs within the first month post catheter removal; however, it is dependent on the patient’s ability to identify and strengthen the pelvic floor muscles; see Table 1), they will become drier and identify activities that are causing the leakage. At this time, UI will be less continuous and more dependent on movement; urinary leakage will continue to diminish even further until patients are unable to detect whether they have or have not leaked.

It is then necessary to assist patients in identifying what is causing their leakage while supporting them as they discard their pads. Having patients place a thin washcloth next to their skin, covered by their pad, will allow them to immediately feel wet if and when they leak. It will not, however, cause social embarrassment as the pad will afford them protection and security. When patients discover that the washcloth has minimal leakage, they are more willing to discard the pad and just wear the washcloth inside their jockey shorts for protection. Because the washcloth will be free of moisture and yellow markings (urine), patients will realize when they are not leaking urine. When they awaken one morning and neglect to use the washcloth, they feel confident about their ability to be dry and not in need of the washcloth. In this patient population, the washcloth has become an acceptable method they feel confident about their ability to be dry and not in need of the washcloth.

### Table 1

Patient Instructions for Home Pelvic Muscle Exercise Program and Other Basic Support Exercises

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<thead>
<tr>
<th>Exercise Type</th>
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| 1. MAINTENANCE Exercises...for SUPPORT of bladder | • 1 exercise = contraction and relaxation  
- 45 every day (15 lying down, 15 standing, and 15 sitting):  
  i. First Week: Contract for 3 seconds, relax for 3 seconds.  
  ii. Second Week: Contract for 5 seconds, relax for 5 seconds.  
  iii. Third Week: Contract for 7 seconds, relax for 7 seconds.  
  iv. Fourth Week: Contract for 10 seconds, relax for 10 seconds.  
  (Note: These are average times and need to be adjusted to the patients’ abilities.)  
- Continue for the rest of your life.  
- Do not use abdominal, buttocks, or thigh muscles while practicing.  
- Breath normally. |
| 2. EXTRA RESISTANCE...for heavy work | • Contract pelvic floor muscles before coughing, sneezing, and movements that cause leakage (bending, lifting). |
| 3. EXTRA TIME...to expand toilet time interval | • Rapidly contract and relax pelvic muscles 5 to 6 times when a strong urge comes and you are unable to get to the bathroom.  
  i. Let the urge pass, do not move.  
  ii. When the urge is gone, contract pelvic floor muscles and hold until you get to the bathroom.  
  iii. You will have 15 to 20 minutes before the next urge comes. |

actively participate in the rehabilitation process. As part of caring for their body, it is necessary to tell patients to, “Rest before you get tired.” If they do, they will have more stamina and less muscle fatigue. This, in turn, may result in decreased pelvic muscle fatigue and increased continence, especially in the late afternoon. Patients are also told to, “Think about their actions prior to movement.” This allows for anticipation, planning, and integration of pelvic muscle use for resistance, if needed.

To assist with the challenge of having patients discard their absorbent products (difficult but achievable), a message that coincides with their expectations is necessary. In our experience, men with PPI do not want to wear pads for the rest of their lives. The most direct message that usually gets the patient’s undivided attention is, “You will always leak urine as long as you wear a pad.” Initially the pad is a saving grace, but eventually becomes a crutch as the brain allocates the responsibility for continence to the pad. Patients are told, “You need to feel wet to be dry.” This advice gives patients permission to be and feel wet so they know immediately when they are leaking and what movement caused the leakage. If they cannot feel the leakage, then they cannot do anything to change it. These are powerful messages that this PPI population needs to hear for motivation and to progress through the program.

Teaching pelvic muscle exercises. Patient education is simple and reiterated in a handout (see Table 1). A good visual imagery
technique to convey the correct method of identifying the pelvic floor muscles is to have each patient imagine that “they have a $100 bill in their rectum and it is slipping away.” Have them grab the money using their rectal muscles only. This imagery helps patients to identify and remember the correct muscles. Patients are discouraged from stopping and starting their urinary stream to identify the correct muscles. Patients are advised to perform PMEs in the early morning: 15 exercises lying down prior to getting out of bed, 15 exercises while standing and dressing or showering, and 15 exercises while eating breakfast. In this manner, the exercises are done and not forgotten.

In our experience, 45 daily exercises are realistic. More is not better; in fact, doing too many exercises will create muscle fatigue, which will delay rapid response to prevent leakage during activities.

A positive mental outlook is just as important as the correct function of the pelvic floor musculature; both can be developed, refined, and nurtured by using the aforementioned techniques as the continence program progresses. In the SDVAHS PPI population, patients find that it is necessary to do maintenance PMEs for the rest of their lives to maintain the support of the pelvic floor muscles. Many will need to perform PMEs daily, but some will manage with 3 to 4 times per week. Patients reach their own level of necessary maintenance exercise dictated by the reemergence of UI.

Clinical Outcomes

A retrospective chart review of this PPI population was performed to evaluate the effectiveness of continence clinic interventions; records of 70 postprostatectomy patients (50 radical retropubic prostatectomy, 19 total perineal prostatectomy, 1 suprapubic prostatectomy; mean age=62, range 50-82) of mixed cultural backgrounds were examined.

Fifty-five (79%) were “dry” (patients reported that they were not leaking urine) while an additional four patients reported that they were almost dry and one stated that although he was still experiencing some urinary leakage, he had reached his goal. These five patients who were not dry lived a distance away and did not feel that a return trip to the continence clinic was necessary as they were satisfied with their level of continence. Of the remaining 10 patients, one had moved across the country, two were considering an artificial urinary sphincter (unable to effectively do exercises), one had a bladder neck stricture, two had other physical ailments that prevented them from further continence treatment, and four could not be contacted.

To further clarify the timeline to continence, of these 70 patients 42% were pad free (leaks an occasional drop of urine) 1 month after an initial phone call with instruction on instituting PMEs and fluid modification (2 months post-surgery), 75% were pad free 2 months after starting noninvasive treatment (4 months post-surgery), and 86% were pad free 3 months after starting treatment (5 months post-surgery).

Anecdotal comments by patients emphasized that the initial phone call (instituted about 1 week post-catheter removal when patients typically start to experience UI) was like a “life line.” The ability to institute actions to start remedying UI was met with gratitude by patients. Most patients immediately embraced the concept of PME and fluid modification; however, some needed convincing that these simple interventions could assist them.

All patients received behavioral interventions. Biofeedback was not encouraged since it added an expense to the program. Patients were instructed to rely on themselves, not an instrument, because failure to continue the basic maintenance exercises that provided pelvic floor muscle support in this patient population resulted in a recurrence of UI. Three patients, however, needed biofeedback and electrical stimulation to supplement PME and assist them in more accurately identifying the correct muscles.

Conclusions

There are many different programs and techniques for noninvasive continence therapy. Essential aspects of assessment and successful noninvasive treatment techniques for men suffering from PPI exist. This approach may be valuable to health care providers seeking to either increase their efficiency and effectiveness or to establish a new continence program. The key is to have a basic program that can be individualized to the specific needs of each patient, both mentally and physically. This allows the best use of the health care provider’s time and provides patients with an opportunity to master the program and reach their continence goal without the need for expensive equipment or lengthy treatment regimens.

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