

# Perspectives

Recovery Strategies from the OR to Home

## In This Issue

Transurethral resection of the prostate (TURP) is the most common surgical procedure for the treatment of benign prostatic hyperplasia. Ms. Wasson carefully outlines the continuum of care from immediate post-operative care to discharge planning. Critical to a positive outcome is the nursing intervention within 24 to 72 hours post-surgery. Nursing concerns within this time frame include assessing the urinary catheter for patency and blood loss. Other complications that could possibly arise within the immediate post-operative period include TURP syndrome, hemorrhage, urinary-tract bacteria, urinary catheter obstruction, and fibrotic scarring. Ms. Wasson addresses each of these potential complications and advises on appropriate nursing interventions.

Also included in this issue is the second installment of Ms. Dixon's two-part article on tracheostomy care. This article focuses on the transition from hospital to home. Ms. Dixon identifies three key phases to facilitate the transition from acute care to home: management, prevention, and wellness. Also visit our website at [www.perspectivesinnursing.org](http://www.perspectivesinnursing.org)

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## Transurethral Resection of the Prostate

by Dianne Wasson, MSN, RN

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Benign prostatic hyperplasia (BPH) is a common urological condition in the aging male. At least 50% of men over age 50 have some degree of prostatic enlargement.<sup>1,2</sup> While the cause of BPH is unknown, it is thought that advancing age, functioning testicles, and androgen production contribute to the development of the disorder.

When the prostate enlarges to the point of symptomatic urinary outflow obstruction (Table 1), a transurethral resection of the prostate (TURP) is the treatment of choice. TURP is the second most common surgical procedure in men over 65 years.<sup>2</sup> While this procedure once required a hospital stay of three to four days, TURPs are now successfully performed in the ambulatory setting.

### Pathophysiology and etiology of BPH

Hyperplasia is an abnormal increase in the amount of normal cells in normal tissue. While not cancerous, the cells in the cylinder of smooth muscle that encircles the prostate gland increase in number.<sup>3</sup> Both testosterone and androgen are responsible for the production, progression, and maintenance of the prostate gland. As men age, the level of circulating testosterone decreases, while the number of androgen receptors increases, causing the overgrowth of the prostate.<sup>4</sup> The result is an enlarged prostate gland that causes bladder outflow obstruction.



### Symptoms of Benign Prostatic Hyperplasia (BPH)

- Urgency of urination
- Frequency of urination
- Abdominal straining
- Nocturia
- Impairment of size and force of stream
- Intermittant hesitancy
- Incomplete bladder emptying
- Terminal dribbling
- Dysuria
- Eventual renal failure from urinary obstruction

Religo & Larson, 1994; Wilson 1997

Table 1

Because the enlarged gland obstructs the prostatic urethra, the patient strains during urination to overcome the obstruction. Over time, straining to urinate causes the detrusor muscle of the bladder to thicken and diverticula to form in the bladder. When the detrusor muscle can no longer generate sufficient pressure to overcome the urethral obstruction, the bladder fails and retains urine. Destruction of striated and smooth muscles, i.e., pelvic floor muscles, results in urinary incontinence.<sup>5</sup>

### Treatment for BPH

Nothing can prevent the development of BPH. Treatment is based on quality-of-life issues, such as incontinence, urgency, frequency of urination, and nocturia.<sup>3</sup>

Patient education should begin in the fourth decade of life to increase awareness of signs and symptoms of BPH. It is important for men to know not to wait to seek

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# Tracheostomy: Easing the Transition from Hospital to Home

by Lois Dixon MSN, RN

Nurses often care for patients with tracheostomy tubes in critical care settings and other patient care units. The need for a tracheostomy may extend to several months or even years; some patients may require a permanent tracheostomy. As a result, many are discharged from hospital to home before they are ready to be decannulated.

When a patient requires a tracheostomy tube for an extended length of time, home-care management is a reasonable goal. Fitton (1994)<sup>1</sup> identifies three key phases of a program to facilitate the transition from acute care to home care: management, prevention and wellness. This article outlines the nursing care of patients with a long-term tracheostomy within this framework.

## Management

The nurse plays an important role in assuring the continuity of care to patients after hospital discharge. The nurse reinforces the patient's previous learning about care and other aspects of airway maintenance, based on the assessed needs and level of family functioning.<sup>2</sup>

## Respiratory Assessment

Decision-making and the development of assessment skills are the primary focus of education, once the patient and family master the necessary technical skills. Because many home-care patients and their families are the primary caregivers, they must be able to evaluate the patient's respiratory status and know how to act in response.

The patient and family should become familiar with the patient's normal respiratory pattern, so they can promptly and safely intervene to prevent or manage a problem.<sup>1</sup> The more that patients listen to their respirations, the more able they are to determine changes from normal respiratory patterns. Encouraging other caregivers to spend time

with the patient while still hospitalized will help to develop these assessment skills.<sup>6</sup> Problem solving is fostered by the active participation of both patient and family.<sup>3</sup>

## Suctioning

In addition to learning the suctioning technique, it is imperative that both patient and family recognize the indications for suctioning (Table 1). The nurse teaches them how to suction the airway, based on the assessment of the patient's pulmonary needs. The frequency of suctioning varies for each patient. The nurse evaluates the patient's ability to suction the tracheostomy and clean the inner cannula and reinforces the teaching, when necessary.

The purpose of changing the tracheostomy tube is to minimize infection and granulation tissue formation.<sup>1</sup> The frequency of changes varies but is usually at least once monthly.<sup>4</sup> In most cases, patients can change the tracheostomy tube at home, once they are proficient and confident in their ability.

The nurse involves the patient and family in this process, offering encouragement and support, until they are able to change the tracheostomy tube and tracheostomy ties independently. Emphasis is placed on properly securing the tube to avoid accidental decannulation. While the use of twill tracheostomy ties is widespread, a Velcro™ tracheostomy tube holder may be easier for the patient to manipulate independently.

## Humidification

Adequate humidification of the trachea is very important. Inspired air which bypasses the nose and enters directly through the tracheostomy is deprived of all natural moisturizing benefits of the upper airway passages. The importance of humidification in reducing the thickness of secretions and build-up of crusty formations is discussed

with the patient.<sup>4</sup> Symptoms of insufficient humidity include<sup>5</sup>:

- increased, unproductive coughing
- a change of mucus from thin to a thick, sticky consistency and from clear to pale yellow
- shortness of breath from a mucous-plug obstruction
- blood-streaked mucus
- noisy, labored respirations

For patients who are very young or bed-ridden, a tracheostomy collar with a warm humidification system is effective.<sup>1</sup> In other situations, the use of a room humidifier or vaporizer may be useful.<sup>2,6</sup> Adequate fluid intake (2000- 2500 ml/day) will help moisten the tracheal tissues and thin secretions.<sup>6</sup>

## Nutrition

The patient should be evaluated for nutritional well-being and wound healing. The nurse stresses the relationship between good nutrition, meticulous skin care, and the prevention of wound infection.<sup>4</sup> The patient with a tracheostomy is at risk of nutritional deficiency, because of altered anatomy and less taste and smell sensations.<sup>4</sup> To counter these problems, the patient is encouraged to maintain good oral hygiene and eat high-calorie snacks, if not medically contraindicated. Maintenance of weight is one objective measure of nutritional adequacy.

## Activities of Daily Living

Most patients may resume usual activities within four to six weeks after hospital discharge.<sup>7</sup> It is important that the patient understands any limitations of activity.<sup>8</sup>

Because of structural changes that occur with a tracheostomy, the airway is largely unprotected from natural elements, e.g., water, dust. The nurse explains the importance of protecting the tracheostomy stoma

from the aspiration of fluids or other irritating substances. Particular care must be taken during bathing and showering. The use of a shower shield or tracheostomy cap prevents the accidental entry of water into the trachea during bathing.

The patient with a tracheostomy is very vulnerable to respiratory infection, because of the loss of filtration of inspired air through the nasal passages. The patient should be instructed to avoid powders, aerosols, and talcums. These substances may be accidentally inhaled through the trachea and cause tracheal damage, leading to infection.<sup>9</sup>

## Prevention

### Emergency Care

The training of patients and primary caregivers in emergency procedures is an essential component of successful home management. Knowledge of resuscitation techniques is necessary in case of an occluded tracheostomy tube, accidental decannulation, immersion in water, massive bleeding from the tracheostomy, or aspiration.<sup>1</sup> The basics of cardiopulmonary resuscitation (CPR) are universal to all protocols for emergency care: airway management, reduced breathing, and circulatory support.

The modification of skills for tracheostomy CPR involve airway management, the use and maintenance of tracheostomy tubes, and the comfortable use of respiratory support equipment.<sup>10</sup> Often, teaching CPR to families of patients with tracheostomies is based on the adaptation of basic life-support standards by individual CPR instructors.<sup>10</sup> The major adaptation is learning the mouth-to-stoma breathing technique.

Equipment for tracheostomy emergencies should always be accessible. A portable oxygen source, suction unit, manual resuscitation bag, extra tracheostomy tubes, and an obturator are necessary. The family is encouraged to keep a list of emergency numbers by the telephone.

### Infection Control

Although the sterile technique is used in acute-care settings, a clean technique that emphasizes good hand-washing and appropriate cleaning of respiratory equipment is recommended for home care.<sup>1</sup> The patient and family are instructed to change tracheostomy dressings that are soiled or moist. These dressings can harbor bacteria, which contribute to skin breakdown and infection

at the tracheal stoma. Careful daily assessment of the stoma for the cardinal signs of infection, such as redness, drainage, swelling, and pain, will alert the patient to early signs of infection and prompt treatment.

The patient with a tracheostomy is also at risk for infection of the pulmonary tree. Bronchopulmonary infections occur, because the tracheostomy bypasses the protective upper airway mechanisms, e.g., filtering, warming, and humidifying the inhaled air. Retained secretions due to decreased mucociliary action and an ineffective or absent cough reflex provide an excellent medium for bacterial growth. Careful suctioning reduces mucosal trauma, which may lead to tracheal infection, and prevents the introduction of bacteria into the trachea.

The patient's neck is another common site of skin breakdown and potential infection, as related to the tracheostomy-securing device – most often, twill ties. Tissue damage occurs under the ties, which act as a constricting band that puts greater pressure on neck tissues. This pressure decreases the capillary blood supply (ischemia) and may eventually lead to tissue ulceration.<sup>6</sup> An alternative to traditional twill ties is the Velcro® type holder, which secures the tracheostomy tube. Because of its design, i.e., wide neck band and elastic portion to allow for movement or cough, this device helps to prevent skin breakdown by reducing the amount of pressure on neck tissues.

## Wellness

### Educational Needs

Learning self-care is important for patients with long-term tracheostomies, because it provides a sense of self-control and reduces their dependency on others. However, significant partners or family members must be able to provide all aspects of tracheostomy care and other facets of airway management in emergency situations or when the patient is not able to participate

#### Indications for Suctioning

- Noisy or moist-sounding respirations
- Increased pulse rate
- Increased or labored respirations
- Nonproductive coughing
- Crackles or wheezes
- Patient requests suctioning
- Tube changes

Table 1

in self-care for a variety of reasons, such as age or lack of dexterity.

Education begins well before hospital discharge to provide sufficient time for the patient and other caregivers to learn these procedures. Because of the large volume of information to be learned, the patient and family are often anxious about home management. When the family assumes the role of primary caregiver, nurses must emphasize the emotional aspects of this role in addition to skill development. Careful education and preparation for home management before discharge reduces this anxiety.

### Stressors and Supports

To promote successful home management, the nurse needs to be knowledgeable about current home-care trends. The nurse should continually update knowledge about home equipment, community resources, and nursing skills in preparation for acting as a resource for patients and their families.

Once the patient is home, the community or home-health nurse is involved in monitoring and evaluating how well the patient and family are adapting to home care. The nurse addresses any adaptation problems that the patient or family may experience. The nurse listens to the patient's anxieties and frustrations and offers appropriate support and encouragement.

The patient and family may view the illness and tracheostomy as a loss and may need help to grieve this loss.<sup>11</sup> Grieving is a developmental task that the patient and family may need to address before they can psychologically cope with home-care education. The variety of emotions provoked by the patient with the tracheostomy tube influences all levels of family relationships.<sup>11</sup> The nurse plays a key role in helping the patient and family to explore their feelings, reassuring them, when necessary, and making appropriate referrals for support, when needed.

Support services for the patient and family can often be identified before hospital discharge. Help in locating vendors of medical supplies such as shower shields, trach caps, Velcro® holders, respite services, or home-care nurses is important to offer to the patient and family. Early identification of alternative caregivers is important to assure that instruction of all aspects of tracheostomy care is given before the family as-

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**Transurethral Resection of the Prostate – Continued from page 1**

treatment. Delay could result in severe obstruction of the urinary system and subsequent kidney damage.<sup>3</sup>

The goal of treatment is to relieve obstruction by reducing the size of prostatic tissue compressing the urethral mucosa.<sup>6</sup> Treatments are based on the degree of hyperplasia and severity of symptoms.

**BPH Management**

Medical management involves close monitoring for increase in severity of prostatic-related symptoms. Health-care professionals are recommended to use the American Urological Association Symptom Score (Table 2) for such monitoring. This tool can objectively quantify BPH symptoms; however, it should not be used as the only means of diagnosing BPH, since the measures are not exclusive to BPH. Since there is an overlap in laboratory values between BPH and prostatic cancer, measurement of the prostatic-specific antigen (PSA) is also not discriminatory enough for BPH monitoring.<sup>7</sup>

Management with drug therapy, such as alpha-adrenergic blockers, antiandrogens, or aromatase inhibitors, may relieve symptoms. Their use is controversial due to severe drug-related side effects and the length of treatment (>6 mo.) needed to relieve symptoms.<sup>6,8</sup>

**BPH Surgical Management**

Not all men with BPH require surgery. Acute urinary retention, chronic UTIs, hematuria, and hydronephrosis are common problems warranting surgical intervention.<sup>5</sup> Several surgical procedures are possible for removing the hypertrophied portion of the prostate gland (Table 3). The goals of surgical intervention are to relieve the symptoms and improve the quality of the client's life by allowing him to retain urinary control and normal sexual functioning.<sup>5,14</sup>

**Post-operative Nursing Care**

After the patient returns to the inpatient nursing unit, the nurse completes an initial assessment and continues to monitor for signs and symptoms of urinary compromise. Post-operative nursing interventions involve assessing the urinary catheter for patency and blood loss every one to two hours. Initially, the nurse may see red-tinged urine that fades to pink within 24 hours. The nurse monitors for signs of excessive blood loss, e.g., rapid pulse and decreasing blood pressure, and checks intake and output every one to two hours.<sup>4</sup> When calculating output, sub-

**International Prostate Symptom Score**

Patient Name:	Not at all	< one time in five	< half the time	about half the time	>half the time	Almost always	
<b>1. Incomplete emptying</b> Over the past month, how often have you had a sensation of not emptying your bladder?	0	1	2	3	4	5	
<b>2. Frequency</b> Over the past month, how often have you had to urinate again less than 2 hours after you finished urinating?	0	1	2	3	4	5	
<b>3. Intermittency</b> Over the past month, how often have you found it difficult to postpone urination?	0	1	2	3	4	5	
<b>4. Urgency</b> Over the past month, how often have you found it difficult to postpone urination?	0	1	2	3	4	5	
<b>5. Weak stream</b> Over the past month, how often have you had a weak urinary stream?	0	1	2	3	4	5	
<b>6. Straining</b> Over the past month, how often have you had to push or strain to begin urination?	0	1	2	3	4	5	
<b>7. Nocturia</b> Over the past month, how many times did you most typically get up to urinate from the time you went to bed at night until the time you got up in the morning?	None	1 Time	2 Times	3 Times	4 Times	5 Times	
<b>TOTAL I-PPS score</b> (scores ranging from 0 to 35 with 0 being symptomatic and 35 indicating severe symptoms)							
<b>Quality of life as a result of urinary symptoms</b> If you were to spend your life with your urinary symptoms the way they are now, how would you feel?	Delighted	Pleased	Mostly Satisfied	Mixed	Mostly dissatisfied	Unhappy	Terrible
	0	1	2	3	4	5	6

Source: The I-PSS was developed by the Measurement Committee of the American Urological Association. The International Consensus under the patronage of the World Health Organization recommends its use for the evaluation of all patients experiencing problems.

Table 2

tract the total amount of irrigation solution infused from the total amount of urine output emptied from the collection bag.<sup>3</sup> If blood clots impede adequate catheter drainage, gentle irrigation is performed with saline solution.

The urinary catheter is usually removed by 72 hours.<sup>3,4</sup> After the urinary catheter is removed, the nurse continues to monitor urinary output every two to four hours. The client is encouraged to drink 2000 to 3000 ml of fluids daily to relieve initial dysuria and resolve hematuria.

Discomfort after TURP is often associated with bladder distention, irritation from the catheter or irrigation solution, or bladder spasm. The physician may order smooth muscle relaxants, such as belladonna and opium suppositories, if bladder spasms persist. Minimizing catheter manipulation and

promoting rest can help to maintain patient comfort.<sup>3,4</sup> Discomfort is often attributed to meatal irritation caused by catheter movement. A Velcro®-type holder that allows for frequent rotation of the bladder pressure point and may alleviate the discomfort.

**TURP-associated complications**  
**TURP syndrome**

Nursing interventions are focused on management and prevention of complications. The most serious TURP-associated complication is known as TURP syndrome. It occurs in about 2% of TURP patients, usually within the first 24 hours.<sup>3,4</sup> Abnormal vascular absorption of irrigating fluid during surgery causes severe dilutional hyponatremia and hypervolemia. The amount of fluid reabsorbed depends on the duration of resection, the number and size of

opened venous sinuses, and the hydrostatic pressure exerted by irrigating fluid.<sup>4</sup>

The nurse carefully assesses the patient for symptoms of TURP syndrome, including<sup>3,9</sup>:

- dramatic increase in BP
- full, bounding pulses
- bradycardia
- tachypnea
- confusion
- agitation
- temporary blindness

The nurse also assesses the patency of inflow and outflow tubing, rate of irrigation, and bladder distention by palpation.<sup>9</sup> The nurse should hang irrigation solution bags no higher than two to three feet above the level of the patient's bladder.<sup>9</sup> A 0.9% sodium chloride solution is used for irrigation.<sup>9</sup>

The physician can minimize the risk of TURP syndrome by limiting resection time to fewer than 60 minutes.

### Hemorrhage

The most common complication after TURP is hemorrhage. Bladder spasms or movement may initiate bleeding. Meticulous surgical hemostasis followed by appropriate catheter balloon position and sufficient inflation can prevent or control hemorrhage.<sup>4,5</sup>

If the physician applies catheter traction for pressure against vessels at the surgical site, the catheter is usually secured to the abdomen or thigh with tape or a Velcro™ catheter device. Nurses ensure that traction is maintained. However, a Velcro™-type holder can continuously hold the catheter in traction without slippage or movement.

The bleeding may be arterial, but venous bleeding is more common.<sup>5</sup> Nursing interventions include the monitoring of:

- vital signs every four hours
- urinary output for color and consistency of bladder returns every two hours
- increasing the rate of bladder irrigation flow as needed to assure urine flows and prevent obstructions

Instruct the patient to remain flat or at a slight incline immediately post-operatively, because sitting may increase venous and bladder pressure, causing bleeding.<sup>1,3,5</sup>

The nurse informs the physician of any increase in bleeding or change in vital signs that may indicate hemorrhage. Surgical intervention may be needed should the bleeding continue. Hypovolemia may develop due to extensive bleeding. It requires intravenous fluids and blood product replacement.

Procedure	Description	Comments
<b>Transurethral Resection of the Prostate (TURP)</b>	Involves insertion of a resectoscope through the urethra using an electrically energized loop to excise hyperplastic lobes of the prostate.	<ul style="list-style-type: none"> <li>• is the surgical procedure of first choice.</li> <li>• usually requires an inpatient stay.</li> </ul>
<b>Transurethral Incision of the Prostate (TUIP)</b>	Is similar to TURP except the prostate capsule is cut in several places to reduce urethral stricture vs. more extensive tissue removal. <sup>4</sup>	<ul style="list-style-type: none"> <li>• is limited to patients with prostates &lt;30 g without extensive prostatic invasion of the urethral lumen.</li> <li>• may be done in an ambulatory setting.</li> </ul>
<b>Visual Laser Ablation of the Prostate (VLAP)</b>	A laserscope is inserted through the cystoscope and vaporizes the tissue beneath the epithelial layer causing coagulation necrosis of the prostatic tissue. <sup>13</sup>	<ul style="list-style-type: none"> <li>• has less morbidity and blood loss than TURP.</li> <li>• has shorter total recovery than TURP (7 vs. 28-42 days).</li> <li>• may be done in an ambulatory setting.</li> </ul>
<b>Transurethral Microwave Thermotherapy (TUMT)</b>	A specially designed retention catheter with an internal microwave antenna is inserted into the urethra and a rectal probe with temperature sensors is placed along the anterior rectal wall. The hyperthermia treatment is multiphasic. Both urethral heating and cooling is used to cause tissue necrosis and shrinkage. <sup>6</sup>	<ul style="list-style-type: none"> <li>• The most common complication is urinary retention due to residual edema from the treatment.</li> <li>• is considered as cost-effective with good morbidity and mortality statistics.</li> <li>• may be done in an ambulatory setting.</li> </ul>
<b>Prostatectomy</b>	Is excision of the prostate through suprapubic, retropubic, or perineal incisions. <sup>3</sup>	<ul style="list-style-type: none"> <li>• The type of prostatectomy is determined by prostate size and whether any bladder abnormalities exist that can be treated concurrently.</li> <li>• requires a longer hospital stay than TURP.</li> </ul>

Table 3

Delayed bleeding caused by excessive physical exertion or straining for bowel movements may be experienced up to two weeks post-operatively.<sup>3</sup> Instruct the patient to drink at least 12 glasses of water per day and to avoid the use of alcohol, caffeinated beverages, and spicy foods that may overstimulate the bladder. He should avoid strenuous activities, such as driving, for at least two weeks and notify the physician if the bleeding does not subside within one hour of resting and increasing fluid intake.<sup>4</sup>

### Bacteremia

Urinary-tract bacteria enter the systemic circulation through prostatic vessels that are cut during surgery. In catheterized patients, the incidence of infection is 50% or greater.<sup>10</sup> The longer the length of time the catheter remains in place the greater the risk of infection. Donegan has reported that virtually all patients have bacteria in the urine after 10 days of catheter use; however, other patient conditions may not permit the bacteria to become problematic.<sup>11</sup>

The incidence of urinary tract infection or bacteriuria is known to develop in most individuals within two to four weeks after the catheter is inserted (AHCPR 1996).<sup>14</sup> If prolonged use of a urinary catheter after TURP is necessary, careful monitoring, meticulous hygiene, and maintenance of a closed system is critical.

Pre-existing urinary tract infections and the presence of an indwelling catheter pre-

dispose the patient to post-operative infections. Septic shock is a risk when bacteria are released into the blood stream due to urinary-system manipulation. Bacteremia is managed with a preoperative aminoglycoside antibiotic, such as gentamycin.

The nurse continues to assess the patency of inflow and outflow tubing and the rate of irrigation. Other nursing assessments for symptoms of bacteremia include<sup>3,4</sup>:

- shaking
- chills
- sudden hypotension
- tachycardia
- hyperthermia

### Urinary Catheter Obstruction

The urinary catheter can become obstructed by clots or tissue debris. By assessing the color and consistency of bladder returns, patency of inflow and outflow tubing, and rate of irrigation, the nurse can prevent urinary retention post-operatively.<sup>4</sup>

Initially, the physician may order a rapid irrigation to flush debris and clots. An adequate irrigant rate can be maintained by the nurse via gentle milking of the outflow tubing at frequent intervals. Moving the patient gently from side-to-side in bed also helps to expel blood clots.

It may be necessary to irrigate with a piston syringe if a clot obstruction occurs.<sup>3,4</sup> Continuous bladder irrigation (CBI) or intermittent bladder irrigation (IBI) with nor-

mal saline solution keeps the catheter free of obstruction and facilitates the detection of obstruction or other complications. The rate of irrigation is adjusted so that a colorless or light pink output is maintained.

Bladder irrigations and the urinary catheter are usually discontinued within 24 to 48 hours. The physician should be notified if an obstruction cannot be resolved by hand irrigation or if the urine returns bright red.<sup>4,5</sup>

### Fibrotic Scarring

A potential, late complication is fibrotic scarring. It causes urethral stricture or bladder neck contraction. Fewer than 7% of patients have been associated with this complication.<sup>3</sup> A careful nursing history of patient healing or scarring can identify patients at risk. Surgical intervention is the primary management of this complication.

### Discharge Planning

Unless a surgical complication or unusual problem with urination occurs, the patient will not be discharged with a catheter or dressing.<sup>5</sup> The nurse gives specific discharge instructions to the patient about self-monitoring the urinary system. The patient may be asked to keep a voiding record and to note the character and volume of urine and the frequency of urination.

During the initial home-recovery period, the nurse instructs the patient to avoid strenuous activities, such as driving, and to rest often for two to six weeks. To enable the surgical site to properly heal, common activity restrictions during the post-operative period include:

- no lifting of more than 5 lb.
- no excessive physical exertion
- no long walks
- no driving a vehicle

If the urine turns bright red, instruct the patient to immediately drink more clear fluids and rest. He should notify the physician, if the bleeding does not subside within one to two hours.<sup>3,4,5</sup>

Nutrition is an important aspect of patient discharge planning. Instruct the patient to avoid the consumption of alcohol, caffeine, and spicy foods that could overstimulate the bladder. The importance of drinking 2500 to 3000 ml of fluid daily cannot be overemphasized. The increased level of fluids help to clear the urine, pass remaining clots, and prevent infection. A high-fiber diet is important for the prevention of constipation and to reduce the probability of hemorrhage due to increased pressure on the pelvic muscles.<sup>4,5</sup>

Another aspect of home-care instructions involves meticulous perineal hygiene to minimize the risk of infection. Encourage the patient to take prescription antibiotics at regular times of day, until the course of medication is completed to reduce the risk of urinary sepsis.<sup>4,5</sup>

The most important exercises for the patient are strengthening and tightening the pelvic floor muscles (Kegel exercises). Kegel muscles can stop the flow of urine. The patient is taught to tighten the pelvic muscles without tightening the thigh or abdominal muscles for 35 to 50 repetitions in five-10-second periods.<sup>4,5</sup> These exercises reduce abnormal detrusor muscle contractions by decreasing bladder pressure.<sup>12</sup>

Long-term patient management after TURP involves ongoing assessment of sexual and urinary function. Assessing self-esteem and sexuality is critical as optimal erection function and changes in libido may take 12 months to resolve.<sup>4</sup>

### Conclusion

Nurses will often care for TURP patients. An uncomplicated post-operative course results from skilled medical and nursing management, including patient education. Rapid recognition of signs and symptoms of TURP complications is critical. Knowledge of appropriate treatment of complications is essential to assure positive patient outcomes.

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**Tracheostomy: Easing the Transition from Hospital to Home – Continued from page 3**

sumes care of the patient. Providing this support often alleviates much of the family's anxiety about caring for the patient at home.

**Conclusion**

Caring for a patient with a tracheostomy in the home setting requires both patient and family to acquire many new skills. The nurse helps them integrate these new skills into their daily lives. In this way, the patient and family learn the necessary skills and achieve a level of confidence that eases the transition to home care.

**Author's note:**

Aaron's Tracheostomy Page, an award-winning web site maintained by a registered nurse, is a comprehensive web resource for the patient and family dealing with tracheostomy home care.<sup>8</sup> Primarily aimed at families with children, much information crosses all age groups. It contains practical advice for oft-encountered problems as well as online resources for many tracheostomy-related links, message boards, chat rooms, and product information. The site can be accessed at [www.bissells.com/trach/htm](http://www.bissells.com/trach/htm).

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**After reading this article, the reader should be able to:**

1. Identify the pathophysiologic changes associated with benign prostatic hyperplasia (BPH).
2. List two (2) interventions used to medically manage BPH.
3. Describe three (3) post-operative complications that may occur following a transurethral resection of the prostate (TURP).
4. Recognize the primary cause for TURP syndrome.
5. Relate nursing assessment findings to appropriate nursing interventions following TURP.
6. Develop a teaching plan for post-operative and home care of the patient undergoing a TURP.

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**1. Hyperplasia is:**

- a. a malignant growth of cells.
- b. an increase in hydrostatic pressure in an organ.
- c. an increase in the number of blood vessels in an organ.
- d. an abnormal increase in the number of normal cells in normal tissue.

**2. Which muscle is affected in BPH?**

- a. Pelvic floor
- b. Detrusor muscle
- c. Gluteal muscles
- d. Urinary sphincter

**3. A patient is scheduled for a TURP. During the outpatient preoperative teaching, he asks where his incision will be. What is the most appropriate response?**

- a. "The incision is made in the abdomen."
- b. "The incision is made in the lower abdomen."
- c. "The incision is made in the perineum between the scrotum and the rectum."
- d. "There is no incision, the surgical instrument is inserted through the urethra."

**4. Isotonic solutions are used for irrigation of the urinary catheter after a TURP because:**

- a. they are clear solutions.
- b. they are not readily absorbed.
- c. they eliminate renal shut down from hemolysis.
- d. they permit dispersion of high radio frequency current.

**5. How is urine output measured in the patient who has continuous bladder irrigation?**

- a. The actual blood loss subtracted from the amount of irrigation fluid.
- b. The amount of IV fluid subtracted from the amount in the collection bag.
- c. The amount of irrigant subtracted from the total amount in the collection bag.
- d. The amount in the collection bag is added to the amount of irrigant remaining.

**6. The primary cause of TURP syndrome is:**

- a. glycine toxicity.
- b. low hydrostatic pressure.
- c. increased intracranial pressure.
- d. excessive absorption of irrigating solutions.

**7. The most common postoperative complication after TURP is:**

- a. sepsis.
- b. bleeding.
- c. hypotension.
- d. hypovolemia.

**8. A patient returns from the recovery room after a TURP. He has an IV infusing at 100 ml/hr, a three-way urinary catheter in place, and continuous bladder irrigation. What would the nurse do first when increased blood in the urine is detected?**

- a. Notify the physician.
- b. Increase the speed of the irrigation.
- c. Irrigate the urinary catheter manually.
- d. Release the traction on the urinary catheter.

**9. A patient who had a TURP complains of pain and bladder spasms. After the nurse determines that the drainage system is patent, which nursing action is most appropriate?**

- a. Help him to the sitz bath.
- b. Decrease traction on the urinary catheter.
- c. Decrease the speed of the irrigation fluid.
- d. Administer narcotics plus anticholinergic drugs, as ordered.

**10. A 78-year old man is admitted to the hospital with the diagnosis of benign prostatic hyperplasia and is scheduled for a TURP. It would be inappropriate for the nurse to include which of the following points in preoperative teaching?**

- a. Explain the TURP as the most common operation.
- b. Explain the purpose and function of a bladder irrigation system.
- c. Expect bloody urine, which will clear as healing takes place.
- d. Expect a pain-free post-operative recovery period.

**Mark your answers with an X in the box next to the correct answer**

	A	B	C	D
<b>1</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	A	B	C	D
<b>2</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	A	B	C	D
<b>3</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	A	B	C	D
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	A	B	C	D
<b>5</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	A	B	C	D
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	A	B	C	D
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	A	B	C	D
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	A	B	C	D
<b>9</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	A	B	C	D
<b>10</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Participant's Evaluation**

1. What is the highest degree you have earned?      1. Diploma      2. Associate      3. Bachelor's      4. Master's      5. Doctorate
- Using 1=Strongly agree to 6= Strongly disagree rating scale, please circle the number that best reflects the extent of your agreement to each statement.

	Strongly Agree				Strongly Disagree
2. Indicate to what degree you met the objectives of this program					
■ Identify the pathophysiologic changes associated with benign prostatic hyperplasia (BPH).	1	2	3	4	5 6
■ Lists two (2) interventions used to medically manage BPH.	1	2	3	4	5 6
■ Describes three (3) post-operative complications that may occur following a transurethral resection of the prostate (TURP).	1	2	3	4	5 6
■ Recognizes the primary cause for TURP syndrome.	1	2	3	4	5 6
■ Relates nursing assessment findings to appropriate nursing interventions following TURP.	1	2	3	4	5 6
■ Develops a teaching plan for post-operative and home care of the patient undergoing a TURP.	1	2	3	4	5 6

- 3. How long did it take you to complete this home-study program? \_\_\_\_\_
- 4. Have you used home study in the past?       Yes       NO
- 5. How many home-study courses do you typically use per year? \_\_\_\_\_
- 6. What other areas would you like to cover through home study? \_\_\_\_\_
- 7. Would you like to author a self-study program?       Yes       NO

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