Bladder Cancer Advocacy Network

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Orthotopic Neobladder

Practical questions and answers with Michael, a bladder cancer survivor living with a neobladder.

An orthotopic neobladder is an internal urinary diversion in which a segment of the small intestine is used to form a new (neo) reservoir for urine. The ureters are attached to the neobladder, as is the urethra, allowing voiding to be done via the natural course.

How is neobladder surgery different from other types of urinary diversion?
Michael: The most important issue is your medical suitability for a neobladder. Neobladder surgery is a lengthy procedure (about twice as long as construction of an ileal conduit, the simplest and most often used diversion) and you will need to be in good general health to undergo this surgery.

You must, before surgery, discuss with your surgeon what he/she will do if, during surgery, it becomes clear that you are not physically able to have a neobladder and another type of urinary diversion needs to be made instead. I believe this situation is most often caused by finding cancer or CIS in or near the urethra during the RC surgery.

After the construction of the neobladder were you able to use the system right away?
Michael: There seems to be a variation in practice among urologic surgeons. In my case I had only a Foley catheter when I was discharged from the hospital. This remained in for about 3 weeks after I went home to allow complete healing of the anastamoses (junctions between the urethra and neobladder, and the ureters and neobladder). During this time the catheter, at least in my case, was prone to getting plugged with mucus so I needed to irrigate it with sterile saline frequently. Discharge instructions were to irrigate at least three times per day until no mucus was noted in the withdrawn fluid. After the catheter was removed there was a period of training the sphincter muscle and stretching the neobladder to maximum capacity. During this time a "Depends" type of undergarment and, later, just a pad were needed. Some surgeons also use a supra-pubic catheter to relieve pressure in the neobladder in the immediate recovery period.

How often do you void with a neobladder?
Michael: Time to void depends on a number of variables including the amount of fluid intake and the amount of fluid lost through, say, perspiration rather than urine. In the early stages of recovery the time will be quite limited due to leaking. Early on the neobladder is a low volume, high pressure reservoir and the pressure easily overwhelms the capacity of the sphincter muscles to retain urine. With time the neobladder stretches to become a low pressure, higher volume reservoir and the sphincter, under most conditions, then retains the urine. The stretching is accomplished by gradually increasing the time between voiding. For me the time between urination can be as little as 1-2 hours under conditions of high intake, especially of fluids such as coffee, tea or alcohol that have a diuretic effect (IE: increase urine production). However, I sometimes go greater than 4 hours if intake is less and therefore urine production is slower (such as periods of exercise where sweating and water loss through respiration may exceed that taken in.) The length of time to achieve continence seems to be quite variable with some people achieving daytime continence within a few weeks and others taking a few months. I believe daytime continence is achieved in about 95% or more people with neobladders. Certain medicines with a diuretic effect may also play a role in voiding frequency. Because I do not take any such medications I do not have any direct knowledge of this as a factor.

How much does the neobladder hold?
Michael: My understanding is that ideally the neobladder should hold approximately 500-600 cc. It can be stretched to hold more, but this increases the risk of becoming unable to empty it completely. Incomplete emptying with residual urine in the neobladder is one cause of urinary tract infections, so it is best to limit the capacity of the neobladder. For most men complete voiding is best when seated and with alterations in upper body position (leaning forward). I also apply pressure to the lower abdomen with my hands in the area that overlies the neobladder to increase the pressure on the neobladder to empty completely. I am very obsessive about this and will usually repeat these maneuvers until no more urine is expelled.

How do you sleep?
Michael: At night I wake every 3-4 hours to void. I void immediately before bed and attempt to empty the neobladder completely. I set an alarm clock for between 3 and 4 hours to insure that I do not over-stretch the neobladder. If I naturally wake after about 2 or more hours before the alarm goes off, I void and reset the alarm. For me this usually amounts to getting up twice during the night. There is more of a problem of continence during sleep as the sphincter, a voluntary muscle, is less controlled in a deep sleep. There is a greater chance for nighttime incontinence than for daytime incontinence, but a large percentage of people do achieve both day and night continence. For most, an absorbent pad would suffice for incontinence problems.

What daily maintenance do you need?
Michael: In my case, none. I do stay well hydrated (I almost never go a day without having at least 80 oz of fluid intake, primarily water and iced tea). One complication of continent diversions (neobladders and internal continent reservoirs such as the Indiana pouch) is metabolic acidosis. This is a potential problem due to the natural movement of water and electrolytes between the inside of the reservoir and the surrounding tissues and blood stream. Good hydration lessens the risk of acidosis as well as lowering the risk of stones. I also try to be quite vigilant through frequent urination about not over-distending the neobladder. Some people with neobladders have a continuing need to self catheterize, usually because of hyper-continence. This risk is minimized by preventing over-distention.

What is the risk of infection?
Michael: Urinary tract infections are more common in all urinary diversions (neobladders, Indiana pouches, and ileal conduits); I believe the risk is similar for each of the urinary diversions. To date, approximately 20 months since my surgery, I have had none. The risk is higher in those with diabetes mellitus. The usual symptoms – urgency, frequency, and burning when urinating – are absent in urinary diversions, so we must try to be aware of other symptoms, such as a strong or different odor (that can't be explained by dietary factors such as asparagus), chills and fever. Pain in your side with chills and/or fever may indicate a kidney infection which is a serious medical complication requiring immediate treatment, often with IV antibiotics. Routine urinalysis is not of much help since most diversions will harbor white blood cells and result in positive tests. A urine culture with sensitivity is needed to determine an infection and appropriate treatment.

Are there any restrictions in lifestyle?
Michael: None. The external appearance is normal except for the scar from the surgery. My surgeon has placed no restrictions on my activity and I currently live an active lifestyle with travel, bicycling (approximately 60-100 miles per week), and weight training. You may swim or engage in other physical activities. As with all diversions there is an adjustment period to your new normal.

How satisfied are you with a neobladder?
Michael: I am very satisfied, but firmly believe that we are very adaptable and will accommodate to any diversion with time.

For more information on bladder cancer visit www.bcan.org
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