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Bladder Cancer

You may have heard it from physicians, from family members who have been doing their reading, or from spinal cord injury survivors who go to other doctors or who were treated at different hospitals or rehabilitation centers: "You're going to develop cancer of the bladder if you keep that catheter in." Are they right? No one knows. Is the risk of bladder cancer higher in spinal cord injury survivors? Yes. Is it further increased by using an indwelling catheter? Again, yes. Is the risk unreasonable? Only you can make that decision. Are there things you can do to reduce that risk? Probably. The key lies in knowing your own risks, understanding your choices, and making the necessary tradeoffs, based on solid information.

Three Pieces to the Puzzle

There are three different pieces to the bladder cancer puzzle. All of them are important for understanding the big picture. First, there is incidence. Just how much more common is bladder cancer among spinal cord injury survivors? How great are the chances of developing it? Second, there are risk factors. What are some of the things that increase–and decrease– the risk for bladder cancer? Finally, there is you. What can *you* do to change, lessen, or just understand those risks? It's a complicated picture; if you still have questions after reading this, get more information.

Incidence

The truth is that bladder cancer *is* more common people with spinal cord injury than in the general population. However, in reality, it's a rare disease in non-disabled people that becomes somewhat more common among SCI survivors.

In the general population, "a man has a 1 in 27 and a woman a 1 in 84 chance of getting bladder cancer in their lifetime" (American Bladder Cancer Society, 2010). This equates to a 3% chance in men and a 1% chance in women.

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In spinal cord injury, the incidence of bladder cancer varies with each study. However, multiple studies have found an increased rate of bladder cancer (Consortium for Spinal Cord Medicine, 2006). In 2002, Groah et al, found in their study that SCI patients were 15.2 times more likely to develop bladder cancer than the general population.

Most Common Types of Bladder Cancer

Transitional cell carcinoma. Transitional cells line the urinary tract and expand when your bladder is full and contract when it is empty. Transitional cell carcinoma is the most common type of bladder cancer in the United States (American Bladder Cancer Society, 2010). This type of cancer has known risk factors unrelated to SCI (see Risk Factors below).

Squamous cell carcinoma. People with spinal cord injuries who use indwelling catheters have higher rates of developing this type of cancer (Consortium of Spinal Cord Injury, 2006). Infection and irritation can cause squamous cells to develop in your bladder. Over time they can become cancerous. "However, it should also be noted that squamous cell cancer is rare, so even though there is a greater incidence in those with spinal cord injury, the number of individuals who develop squamous cell bladder cancer is actually low" (Consortium of Spinal Cord Injury, 2006, p. 23).

Risk Factors: Bladder Irritation

Most of the factors increasing this risk for bladder cancer relate to one thing: irritation of the bladder– both chronic and repeated. Many scientists and researchers suspect that spinal cord injury, because of the way it changes the urinary system and alters the environment inside the bladder, may increase the amount and types of irritation the bladder is subject to.

Urinary Tract Infections

One big irritant is urinary tract infections; the more frequent and more severe they are, the more irritation they may cause. And, they seem to play a role regardless of whether there's a catheter present. In addition to the irritation they cause, some researchers suspect that urinary tract infections cause the release of a substance in the bladder, called nitrosamine (Consortium of Spinal Cord Injury, 2006). This substance, itself, may enhance the development of cancer–in much the same way that cigarette smoke may enhance cancer formation in the lungs.

Bladder Stones

Bladder stones are also potential irritants. First, they're believed to occur because of some irritation–a stray hair, grit, sediment– already present in the bladder. Second, when not removed, bladder stones become a source of irritation, causing physical irritation within the bladder and fostering urinary tract infections, which themselves cause irritation.

Indwelling Catheters

Still, without a doubt, the catheter itself is the largest potential source of irritation. In some people, tumors have been seen inside the bladder where the catheter rubs and in the path where the catheter lays (Sene, Massey, McMahon, & Carroll, 1990; Kaye, Levin, Montague, & Pontes, 1992). The incidence of cancer is still higher among those who do have indwelling catheters than among those who use external collectors, intermittent catheterization, credé, and most other types of bladder management. Groah et al (2002) found that people who use indwelling catheters were 4.9 times more likely to develop bladder cancer than those who did not use indwelling catheters.

The biggest catheter-related risk factor seems to be how long the catheter has been in place. Some researchers have reported that cancer rates go up the longer people use indwelling catheters (Groah et al, 2002; Consortium of Spinal Cord Injury, 2006; Wolfe et al, 2010). According to the literature review performed by the Consortium of Spinal Cord Injury (2006), for those using indwelling catheters long-term, the risk for developing bladder cancer increases after 8 to 10 years.

Another catheter-related risk that has been suggested is a factor called the "era of care." Some physicians believe that people most at risk are those who were injured long ago–before modern antibiotics, anticholinergic drugs, and catheters made from safer, non-rubber materials, were available. Some even believe that bladder cancer incidence rates will be lower among more recently injured SCI survivors who are treated with today's more modern methods.

Cigarette Smoke

"Smoking has been identified as a major risk factor for bladder cancer. A very high percentage of people with bladder cancer were at one time smokers. Smokers are two to three times more likely to get bladder cancer than non smokers" (American Bladder Cancer Society, 2010). Are spinal cord injured smokers at even greater risk? Possibly. Carcinogens, like those found in cigarette smoke, may be carried in the urine.

Occupation

The work you choose to do may expose you to high levels of carcinogens. These can include truck drivers, textile workers, chemical industries, leather industries, hairdressers, machinists, metal workers, printers, rubber industries, and painters (American Bladder Cancer Society, 2010).

Water and Diet

According to the American Bladder Cancer Society (2010), people who drink plenty of fluids have a lower incidence of bladder cancer. Also, arsenic has been linked to increased bladder cancer. If your water supply exceeds the recommended level for arsenic content you should consider drinking bottled water.

Your diet is also extremely important. Diets that are high in fat and nitrates could increase the risk for bladder cancer. Eat a diet rich in fruits and vegetables to reduce your risk (American Bladder Cancer Society, 2010).

Anistolochia Fangchi, an herbal dietary supplement found in weight loss pills, has been linked to increased risk for bladder cancer and kidney failure (American Bladder Cancer Society, 2010).

Things you cannot control

Sometimes, risk factors are out of your control. Men are 2-3 times more likely to get bladder cancer than women. Also, white people have higher rates of bladder cancer than other races. And the risk for bladder cancer increases as you age (American Bladder Cancer Society, 2010).

Symptoms of Bladder Cancer

The most common symptom of bladder cancer is blood in the urine: blood that is chronic or recurring and that does not appear to be related to a urinary tract infection. However, because many other things–less serious than cancer–can cause blood to appear in the urine, the best way to monitor the bladder is by having a urologist examine it.

Diagnosing Bladder Cancer

With an instrument called a cystoscope, the urologist can see inside the bladder. If any suspicious areas are noted, he or she may recommend a biopsy–a procedure in which a small piece of the bladder wall is scraped away and examined carefully under a microscope. Though biopsies may cause some blood-tinged urine for a day or two, they're not usually painful and can be done fairly simply at the same time as the cystoscopy itself. The doctor may also test your urine to identify cancerous cells.

Treatment of Bladder Cancer

Treatment of bladder cancer will vary depending on the type of cancerous cells, the location, and the size of the tumor. Surgery is usually performed to remove the tumor and this may result in changing how you urinate. There are several choices and therapies available. Working with your doctor will be key to ensuring successful treatment.

Decreasing Your Risk

Regardless of whether you are catheter free or use an indwelling catheter, probably the best advice is to be meticulous in all aspects of your bladder management program. Follow all physician recommendations about medications, fluid intake, cleanliness, monitoring, and follow-up. Most important, stay up-to-date. Ongoing research may make new information available that could be beneficial to you.

Indwelling Catheters

If you *do* happen to have an indwelling catheter, here are some specific things you can do to reduce your risk:

- ✓ If anticholinergic drugs were prescribed, use them. These drugs–Ditropan, Detrol, Enablex, Vesicare – relax the bladder, and as a result, decrease the amount of irritation it is subjected to.
- ✓ Drinking green tea is associated with a reduced the risk of bladder cancer, esophageal cancer, and pancreatic cancer. Also, taking vitamin E 200 IU orally for greater than 10 years seems to be associated with a reduced risk of bladder cancer mortality (Natural Medicines Comprehensive Database, 2010). If you're considering taking these or any other vitamins, talk with your physician.
- ✓ Each day, switch the leg that you put your drainage bag on. If, because of functional reasons, you can't do this, then try putting your night bag on the opposite side of your body as your daytime leg bag. This, in theory, should move the catheter tube and its balloon within your bladder so the same spot on your bladder wall doesn't have all the irritation.
- ✓ Use the newer, less irritating hydrophilic catheters. They're lubricated and made of softer materials which make them less irritating. But, regardless of which type you use, change it as often as recommended. This is not the place to try to save money!

If you have concerns about indwelling catheters, the irritation they cause, and bladder cancer, you may want to consider the tradeoffs – like convenience and familiarity – of shifting to a catheter-free bladder management program. However, keep in mind that we just don't know how much a change in your program will decrease your risk. Will your bladder return to "normal"? Probably not. Will future, continued bladder irritation be lessened? Probably. Talk it over with your doctor.

Prevent Infections and Stones

- ✓ Get yourself checked regularly for stones. Repeated bladder infections and grit in your urine are some possible signs that you might have stones. If your urologist does find bladder stones, have them removed.
- ✓ Drink lots of water. Drink enough so that you put out 3 to 4 quarts of urine a day. Everyone's body uses different amounts of water at different times, so don't assume that *taking in* 3 to 4 quarts will guarantee that you'll put out that much; it may take more.
- ✓ If, because of your own bladder history, your physician recommends that you take maintenance doses of medications to suppress bacterial growth, do it.
- ✓ If you feel like you're having a lot of bladder infections, work with your doctor to try to identify–and eliminate–the cause. Two or three urinary tract infections a year is probably typical of most SCI survivors; a lot more is a problem, not only because of the possible bladder cancer risk, but because of the impact on your genitourinary system and on your health in general.
- ✓ Maintain personal cleanliness to prevent your exposure to infection-causing bacteria. Be meticulous in your catheter-changing technique. If you have a suprapubic catheter, keep the site around the catheter shaved and clean. Use chlorine bleach and water to keep your leg bags, night bags, and tubing clean and bacteria-free.

Decrease Exposure to Cancer-causing Agents

- ✓ Don't smoke. If you do smoke, quit now.
- ✓ Remember, infected urine may contain substances that increase cancer risk. Call your doctor about any symptomatic bladder infections you have. Symptoms include fever and chills, cloudy, smelly urine, drainage around the catheter, unexplained autonomic dysreflexia, and pinkish or bloody urine. Don't ignore bloody urine; it can be a warning sign.
- ✓ If you have an indwelling catheter of any kind, follow the cystoscopy schedule recommended by your urologist or SCI physician, as these exams can be a means of early detection. If you've had your indwelling catheter for more than 10 years, you probably won't want to go more than a year or two between cystoscopies. And, based on your "cysto" results, your doctor can then tell you if a biopsy is useful or indicated.

Big Questions

You can't undo your spinal cord injury, but taking these steps will help minimize your risk for bladder cancer. To come back to the big question: Should you abandon your indwelling catheter program for one that is less invasive?

There is no easy answer. If everything else is equal and your bladder could work just as well without an indwelling catheter, and if your independence and quality of life would not be affected by the program you chose, it probably would be safer to go with a program that does not involve an indwelling catheter. But, it's seldom that simple.

The key questions to ask yourself are:

- ✓ How many years have I used an indwelling catheter? Is there a point at which the increasing cancer risk outweighs the catheter's convenience and independence?
- ✓ Can another type of bladder management decrease the infections and other complications I have? Can that method work for me? Can I accept any decrease in convenience or independence that might be part of a new bladder program?
- ✓ What method allows me to lead the kind of life I want to lead – and need to lead – now?

Answering these questions is difficult and complicated. Get the information you need about *your own* unique situation so you can weigh the tradeoffs. Research -- your doctor, your family and friends, and other SCI survivors can help you, but only you can make the final decision.

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