

# Urologic Surgical Associates of Delaware

## *Specializing in Robotic Surgery*

### **Urinary Diversion and Ileal Loop Urostomy**

Urinary diversion is a surgical reconstruction to drain the urine from the kidneys and ureters when the bladder will no longer be used. This urinary diversion is often done as part of a radical cystectomy for bladder cancer, but might also be used to manage a dysfunctional bladder. Some typical bladder dysfunctions where urinary diversion might be considered include neurogenic bladder due to multiple sclerosis, spinal cord injury, or other neurologic dysfunction, severe refractory urinary incontinence, severe refractory urinary fistulas, or severe refractory urinary tract infections. Our preferred method of creating urinary diversion is by robotic-assisted Laparoscopic technology. Robotic-assisted Laparoscopic technique requires no incision, decreases blood loss, decreases complications, and speeds recovery when compared to standard open surgery.

The most commonly used form of urinary diversion is an ileal loop urostomy using about eighteen centimeters of ileum (small bowel). The eighteen centimeter segment of ileum is separated from the remaining ileum and the remaining ileum is put back together to keep the bowel functioning in continuity. The eighteen centimeter segment of ileum is then used to connect the ureters at one end and to bring the other end of the ileum out on the abdomen, usually the right lower quadrant (to the right of and below the belly button). Where the ileal loop exits the abdominal wall is called a stoma. The stoma is a pink fleshy exit orifice that has a diameter that can usually accommodate an index or “pinky” finger. The urine drains from this stoma continuously into a plastic urostomy appliance.

Finding the right urostomy appliance to fit your stoma and learning how to manage your appliance so that there is no urine leakage is a major part of the post-operative recovery. Nurses in the hospital and visiting nurses that come to your home, your family members, vendors who supply appliances, our office staff, and prior patients can all help you learn to manage the appliance.

One of the critical surgical features of any urinary diversion is the suturing of ureter to ileum (the ureteral anastomosis). Because this is a man-made anastomosis, it will heal with scar tissue. If this scar narrows down too much it is called a ureteral or anastamotic stricture. Robotic technology reduces, but does not eliminate, the risk of stricture. If a stricture does occur, it could need dilation or surgical revision in the future. To protect the ureteral anastomosis, plastic stents are sometimes left in both ureters for six weeks after surgical urinary diversion. These stents may be visible at the stoma intermittently.

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Because the ileum is a piece of bowel, it will always shed its inner cell lining, or mucosa, daily. This results in significant mucus production from the stoma. This is normal. The amount of mucus may decrease over time, but it will never entirely stop.

Another form of urinary diversion is an ileal neobladder where a new bladder is created using sixty centimeters of ileum. The ileum is opened and reconfigured into a sphere and the ureters are sutured into the neobladder sphere. The neobladder is then sutured to the urethra over a foley catheter. The foley catheter and ureteral stents and several other surgical drains remain in place for several weeks. Neobladder would not be used to replace a bladder in a patient with significant neurologic disease but is considered in select cases of bladder cancer treatment.

Yet another form of diversion is to use bowel to create a urinary diversion that connects to the abdomen by a continent cutaneous channel. This type of diversion is called a continent cutaneous pouch or reservoir. It's continent because generally it does not leak urine but in order to drain this pouch you must catheterize the pouch 4-6 times a day. The pouch is catheterized through a channel on the abdomen (created using the appendix or a modified segment of ileum or small bowel). You will no longer urinate but rather drain the pouch by passing a catheter through the catheterizable channel on your abdomen. You will also catheterize through this channel daily to clean out mucus from the pouch (see below). This continent cutaneous pouch can be used in cases of neurologic dysfunction if the patient is able to use their hands to catheterize the channel.

Again, the ileum sheds its mucosal lining, creating substantial mucus. With an ileal loop, the mucus simply exits out the stoma. With a neobladder (or continent cutaneous pouch), the mucus becomes trapped inside the neobladder. This mucus must be irrigated out of the neobladder, and this need for irrigation continues for life. A patient who elects neobladder reconstruction must be able to catheterize his or her new bladder through the urethra (or cutaneous opening for continent cutaneous pouch) for life. This catheterization process is necessary for irrigating out mucus and maintaining the neobladder. Catheterization may also be needed because 20% or more of neobladder patients cannot empty their new bladder by urination but must catheterize daily or several times a day to drain their new bladder. Neobladder reconstruction also significantly lengthens surgical time and so it increases risks of surgery as well as the risk of post-op recovery.