



Craig Hospital

Redefining Possible for People with Spinal Cord and Brain Injuries

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Mitrofanoff Procedure

The Mitrofanoff Procedure creates a self-sealing channel from the surface of the abdomen to the bladder. The channel is used for intermittent catheterization.

What is it?

The Mitrofanoff Procedure is a surgical procedure to assist with bladder emptying. Originally developed for use in children, the Mitrofanoff Procedure has become a surgical option for people living with spinal cord injury and neurogenic bladder. People who have difficulty with self-catheterization through the urethra or have discomfort with self-catheterization have had the Mitrofanoff Procedure to some success. It has been especially successful in women (who have difficulty with self-catheterizations through the urethra) and in people with recurrent and severe autonomic dysreflexia related to their bladder.

During surgery, a small channel is created with the appendix or with part of the colon. The appendix is a small organ that is not necessary to keep you alive – it doesn't do anything important. It can be removed to create the small channel in this procedure. If you don't have an appendix anymore, part of your colon will be used to create the channel between the bladder and the surface of the abdomen.

After the surgery, the bladder will hold urine, just as it always has. When it is time to self-catheterize, a catheter is inserted through the channel in the abdomen into the bladder. The urine then drains into a toilet or cup and discarded. After the bladder is empty, the catheter is removed and the channel self-seals shut to prevent any leakage of urine between catheterizations.

The Mitrofanoff Procedure is considered major surgery. Recovery from this procedure usually takes six weeks. Initially, the Mitrofanoff channel may not be used for draining urine. It will need to heal first. During this time, a suprapubic catheter is used to drain urine. The suprapubic catheter is removed once regular intermittent catheterizations through the Mitrofanoff channel are proven. The suprapubic catheter opening then heals closed.

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The Mitrofanoff Procedure is different from a suprapubic catheter.

Mitrofanoff Procedure

Surgical procedure that uses the appendix or part of the colon to create a self-sealing channel or passage from the surface of the abdomen to the bladder.

Used for intermittent catheterization – a catheter is inserted as needed to drain urine and then removed.

The catheter drains urine into the toilet or a cup and is removed when the bladder is empty.

Suprapubic Catheter

Surgical procedure that makes an opening from the surface of the abdomen to the bladder.

Used for indwelling catheterization – the catheter is inserted into the bladder and stays there all the time. The catheter is changed once a month or as needed.

The catheter is connected to a leg bag or large collection bag.

Who may have the Mitrofanoff Procedure?

This procedure is not for everyone. Sometimes the effects of your spinal cord injury and neurogenic bladder will prevent you from getting the Mitrofanoff Procedure. For example, you must be able to do or direct others to do regular intermittent catheterizations. You will need good hand control if you do it yourself or very reliable caregivers that will be able to catheterize you every four hours. If you don't have this, the Mitrofanoff Procedure is probably not a good option for you.

Your bladder will also need to have certain traits to make you a good candidate. Your bladder will need to be "low pressure" (not high pressure) and be able to hold a large amount of urine without leaking or refluxing into the kidneys. This information about your body will be provided by a urologist who will do a urodynamics evaluation.

Finally, this procedure is often done at least one year after your initial spinal cord injury. This is because in the first two years of your injury, a lot of healing is still occurring and you want to make sure this is the right option for you. You will need to be very committed to this bladder option and to maintaining your health afterwards. Performing regular and reliable self-catheterizations every four hours will be required as will proper infection control.

What are the Potential Complications?

- This is a surgical procedure and comes with all the risks and potential complications of any surgery. The potential for complications should be considered individually as this is a major surgery. Your surgeon or doctor will talk with you about any complications you need to know about.
- The channel may close or become too small to pass a catheter through. This is an emergency and may require additional surgery.
- The channel may become dilated and not self-seal after each catheterization. This can lead to leaking urine.

Mitrofanoff Procedure

- The appendix and the colon normally produce mucus to ease the passage of food through the body. When the appendix or part of the colon is used to create the channel in the Mitrofanoff Procedure, they still behave like an appendix or like a colon – they continue to produce mucus. Sometimes excessive mucus in the channel makes it difficult to self-catheterize. To treat this, you may need to irrigate the channel daily. This means extra work to maintain the channel. This can also lead to electrolyte imbalances in the body.
- As with any catheterization program, the risks for recurrent urinary tract infections, bladder stone formation, and bladder cancer are increased.

Mitrofanoff and Pregnancy

Pregnancy after having the Mitrofanoff Procedure is possible. You will want to work with your doctor during your pregnancy to make sure the channel stays open for self-catheterization while the fetus develops.

Because the appendix or part of the colon is used to create the channel (the urine has been exposed to segments of intestines), the results of a urine pregnancy test may not be accurate. You will need to confirm the pregnancy with a blood test at your doctor's office.

Due to the complexity and number of abdominal surgeries that have occurred with the Mitrofanoff Procedure, a C-section delivery should be considered. However, a vaginal delivery is possible, too. You will want to work closely with your doctor to develop a birthing plan that is safe and appropriate for you.

Other Considerations

After the Mitrofanoff Procedure, you will need to get yearly exams to check the health of your bladder. These exams may include:

- Annual cystoscopy
- Annual Renal Ultrasound
- Annual X-ray of Kidneys, Ureters, Bladder (KUB)
- Blood tests to evaluate your electrolytes, kidney function, and liver function

You will also need to wear a medical alert bracelet. In case of an emergency, this bracelet will let your healthcare providers know where the Mitrofanoff channel is located and if this is the only place to catheterize you.