

Facing Surgery for a Urinary Tract Condition?

Learn about minimally invasive
da Vinci[®] Surgery



da Vinci[®] Surgery

The Condition:

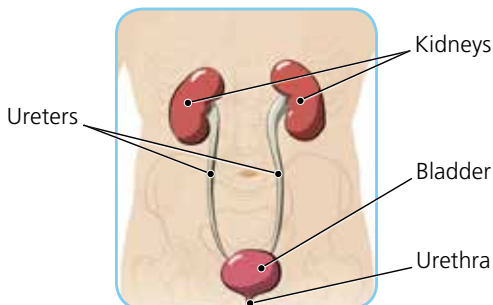
Urinary Tract Obstruction

Your urinary system consists of two kidneys, two ureters and the bladder. Your urinary system produces, stores, and eliminates urine. As a result, toxic by-products and excess fluids are removed from your body. This process helps to maintain a critical balance of salt, potassium and acid.

A blockage or obstruction of the ureters (tubes that carry urine from the kidneys to the bladder) can affect your urinary system. Two commonly diagnosed urinary blockages are ureteropelvic junction (UPJ) obstruction and vesicoureteral reflux (VUR). If left untreated, the blockage can damage your kidney over time.

Blockages in the urinary system are more common in children than adults, particularly in newborn boys.¹ A urinary tract obstruction may be present at birth, but can also result from illness or injury.¹ UPJ obstruction is estimated to occur in 1 in every 1,000-2,000 newborns.¹

If symptoms are present, they may include: bloody urine, back or side pain, a lump in the abdomen, kidney or urinary tract infections, poor growth in infants and vomiting.²



The Surgery:

Urinary Tract Surgery (Pyeloplasty)

Treatment and surgical options will depend on the exact cause of the urinary condition. Your doctor may recommend medicine to ease symptoms.

Other options may include: using a catheter (small tube) to drain urine, a stent (hollow tube) to keep the ureter open, or a tube inserted through the lower back to drain urine directly from the kidney.

Depending on the type of urinary condition, procedures known as pyeloplasty, ureteral reimplantation and ureteroureterostomy may be used to correct urinary obstructions in adults and children. The goal of surgery is to clear the obstruction and restore a normal flow of urine through the urinary tract.

Pyeloplasty can be performed using open surgery, meaning doctors make a large abdominal incision.



The incision must be large enough for the surgeon to fit his or her hands and instruments inside the body. Open surgery allows doctors to touch organs as they operate. Pyeloplasty may also be done using minimally invasive surgery (laparoscopy). With manual laparoscopy, surgery is done through a few small incisions using a tiny camera and long, thin surgical instruments. The camera sends images to a video monitor in the operating room to guide doctors as they operate.

There is another minimally invasive surgical option - *da Vinci* Surgery.



Open Surgery
Incision

Laparoscopy
Incisions

da Vinci Surgery
Incisions



da Vinci Surgery:

A Minimally Invasive Surgical Option

Using the *da Vinci* System, surgeons make a few small incisions - similar to traditional laparoscopy. The *da Vinci* System features a magnified 3D high-definition vision system and tiny wristed instruments that bend and rotate far greater than the human wrist. These features enable surgeons to operate with enhanced vision, precision and control.

As a result of *da Vinci* technology, *da Vinci* Pyeloplasty offers patients the following potential benefits compared to traditional open surgery:

- › Shorter hospital stay³
- › Less need for narcotic pain medicine³

da Vinci Pyeloplasty offers the following potential benefits compared to traditional laparoscopy:

- › Less blood loss⁴
- › Shorter total operating time⁴
- › Shorter hospital stay⁴
- › Faster return to normal activities⁴

Risks & Considerations Related to Pyeloplasty

(surgery for a urinary blockage): Infection of the kidney, leaking of urine, narrowing of the urethra, bowel injury, kidney stones, narrowing or movement of the stent, blood in the urine, prolonged leaking of urine.

Important Information for Patients

Serious complications may occur in any surgery, including *da Vinci*® Surgery, up to and including death. Examples of serious or life-threatening complications, which may

require prolonged and/or unexpected hospitalization and/or reoperation, include but are not limited to, one or more of the following: injury to tissues/organs, bleeding, infection and internal scarring that can cause long-lasting dysfunction/pain. Risks of surgery also include the potential for equipment failure and/or human error. Individual surgical results may vary.

Risks specific to minimally invasive surgery, including *da Vinci* Surgery, include but are not limited to, one or more of the following: temporary pain/nerve injury associated with positioning; temporary pain/discomfort from the use of air or gas in the procedure; a longer operation and time under anesthesia and conversion to another surgical technique. If your doctor needs to convert the surgery to another surgical technique, this could result in a longer operative time, additional time under anesthesia, additional or larger incisions and/or increased complications.

Patients who are not candidates for non-robotic minimally invasive surgery are also not candidates for *da Vinci*[®] Surgery. Patients should talk to their doctor to decide if *da Vinci* Surgery is right for them. Patients and doctors should review all available information on non-surgical and surgical options in order to make an informed decision. For Important Safety Information, including surgical risks, indications, and considerations and contraindications for use, please also refer to www.davincisurgery.com/safety and www.intuitivesurgical.com/safety.

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The Enabling Technology: *da Vinci* Surgical System

The *da Vinci* Surgical System is designed to provide surgeons with enhanced capabilities, including high-definition 3D vision and a magnified view. Your doctor controls the *da Vinci* System, which translates his or her hand movements into smaller, more precise movements of tiny instruments inside your body.



Though it is often called a “robot,” *da Vinci* cannot act on its own. Surgery is performed entirely by your doctor. Together, *da Vinci* technology allows your doctor to perform routine and complex procedures through just a few small openings, similar to traditional laparoscopy.

The *da Vinci* System has brought minimally invasive surgery to more than 2 million patients worldwide. *da Vinci* - changing the experience of surgery for people around the world.

Your doctor is one of a growing number of surgeons worldwide offering *da Vinci*® Surgery.

For more information and to find a *da Vinci* surgeon near you, visit:

www.daVinciSurgery.com

¹ Pohl HG, Joyce GF, Wise M, Cilento BG Jr. Vesicoureteral reflux and ureteroceles. J Urol. 2007 May;177(5):1659-66. ² National Institutes of Health. UPJ Obstruction. Available from: <http://www.nlm.nih.gov/medlineplus/ency/article/001267.htm>
³ Lee R, Retik A, Borer J, Peters C; Pediatric Robot Assisted Laparoscopic Dismembered Pyeloplasty: Comparison With a Cohort of Open Surgery. The Journal of Urology, Vol. 175, 683-687, February 2006 ⁴ Hemal AK, Mukherjee S, Singh K; Laparoscopic pyeloplasty versus robotic pyeloplasty ureteropelvic junction obstruction: a series of 60 cases performed by a single surgeon.