

Ureteropelvic Junction (UPJ) Obstruction

What Parents Should Know



What is Ureteropelvic Junction Obstruction (UPJ)?

Ureteropelvic junction (UPJ) obstruction is when part of the kidney is blocked. Most often it is blocked at the renal pelvis. This is where the kidney attaches to one of the ureters (the tubes that carry urine to the bladder). The blockage slows or stops the flow of urine out of the kidney. Urine can then build up and damage the kidney. Sometimes surgery is needed to improve the flow of urine. In some cases the problem will improve on its own.

What Happens Normally?

Kidneys make urine by filtering the blood and removing waste, salts and water. The urine drains from the kidney into the renal pelvis and then into the ureter. Each kidney must have at least one working ureter (some have two) to carry the urine from the kidney to the bladder.

What Causes UPJ?

One in 1,500 children are born with UPJ. In most cases, children are born with it. It is not known how to prevent UPJ. The blockage occurs as the kidney is forming. Today most cases are found using ultrasound before birth. Though it occurs less often in adults, UPJ obstruction may happen after kidney stones, surgery or upper urinary tract swelling.

In UPJ obstruction, the kidney makes urine faster than it can be drained through the renal pelvis into the ureter. This causes urine to pool in the kidney, which leads to kidney swelling (hydronephrosis). Often, only one kidney is affected. The enlarged kidney is easily seen on ultrasound, so the doctor can often predict UPJ obstruction before a baby is born.

What Are Common Symptoms?

With the use of ultrasound, most cases are found long before birth. After birth, signs in infants and children are:

- abdominal mass
- urinary tract infection with fever
- pain in the upper abdomen or back, mostly with fluid intake
- kidney stones
- bloody urine
- vomiting
- poor growth in infants

UPJ obstruction may also cause pain without an infection.

Some cases of UPJ obstruction are not clear. Urine may drain normally at times, and at other times be blocked. This causes pain that comes and goes. Most children are not in pain unless the urine becomes infected or the blockage gets worse.

How is UPJ Treated?

Treatment is not always needed. UPJ may improve in the first 18 months of life. Many infants with good kidney function and poor drainage at first will get better after a few months. In some infants, the obstruction may get worse.

Young patients with an enlarged kidney are first followed with repeat ultrasounds and sometimes repeat nuclear scans. If urine flow does not improve for an infant and obstruction remains, then surgery is needed. Adults may find treatment in other ways.



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- **Open Surgery**

Infants are often treated with an operation called pyeloplasty. The UPJ is removed and the ureter is reattached to the renal pelvis to create a wide opening. This lets the urine drain quickly and easily. It also relieves symptoms and the risk of infection. The surgeon's cut is usually 2 to 3 inches long, just below the ribs. This process usually takes a few hours with a 95% success rate. There may be a hospital stay of one to two days after surgery. Drainage tubes can be used to promote healing.

- **Minimally Invasive Surgery**

Newer surgical options are less invasive, such as:

Laparoscopic Pyeloplasty is when the surgeon works through a small cut in the abdominal wall. A surgical robot can help guide the tools. This method has a high success rate. It causes less pain and nausea, especially in older children and adults. But it can result in scarring in the abdomen.

Internal Incision is when a wire is inserted through the ureter. The wire is used to cut the UPJ from the inside. A special ureteral drain is left in for a few weeks and then removed. The surgery may need to be repeated. The success rates are lower than with open or minimally invasive surgery. But the procedure causes less pain and nausea.

Patients usually recover quickly. Some may have pain for a few days after surgery. Sometimes a drainage tube is left in place to help drain the kidney while it heals.

If the other kidney is normal, children can take part in sports or other activities when the blocked kidney responds well to treatment. Once the UPJ obstruction is fixed, it almost never comes back.

About the Urology Care Foundation

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