

# Pediatric Urology Associates, Ltd.

## & Pediatric Enuresis Center of Arizona

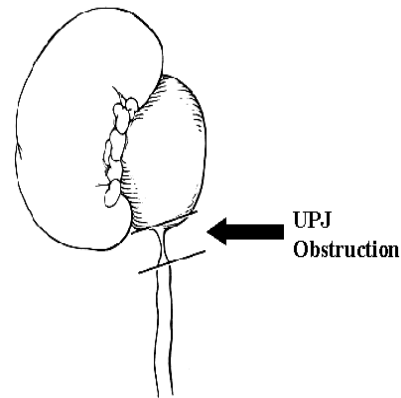
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### URETEROPELVIC JUNCTION (UPJ) OBSTRUCTION

One of the main jobs of the kidney is to filter the blood, and deliver the waste products (urine) to the bladder. The urine leaves the kidney, enters the renal pelvis, and then passes into the ureter through a funnel called the *ureteropelvic junction* (UPJ).

In some children there is a partial blockage at the UPJ. The blockage may be severe (high grade), minimal (low grade) or intermittent.



### SYMPTOMS OF UPJ OBSTRUCTION

We detect many patients with UPJ problems before birth because enlargement of the kidney (hydronephrosis) can be seen on the prenatal ultrasound. The stagnation of urine caused by the UPJ blockage can lead to infection. Older children may have pain related to the blockage. Sometimes the blockage can cause kidney stones to form. Prolonged blockage, particularly with infection, can damage the kidney. The obstruction is usually due to an abnormality in the development of the muscle at the UPJ.

### TESTS FOR UPJ OBSTRUCTION

**Ultrasonography, computerized tomography (CT) and intravenous pyelogram (IVP)** will show the hydronephrosis related to a UPJ obstruction - but may not necessarily prove that the enlargement of the system is due to blockage.

**A diuretic renal scan (MAG-3 renal scan with Lasix)** usually will prove if there is true blockage. This is performed by injecting a tiny amount of nuclear tracer into a vein and watching it accumulate and wash out of the kidney. To help it wash out a diuretic (furosemide = Lasix) is given intravenously. This test also shows how well each kidney is working. Normally each kidney does 50% of the total work. A bladder catheter must be placed before the test is started.

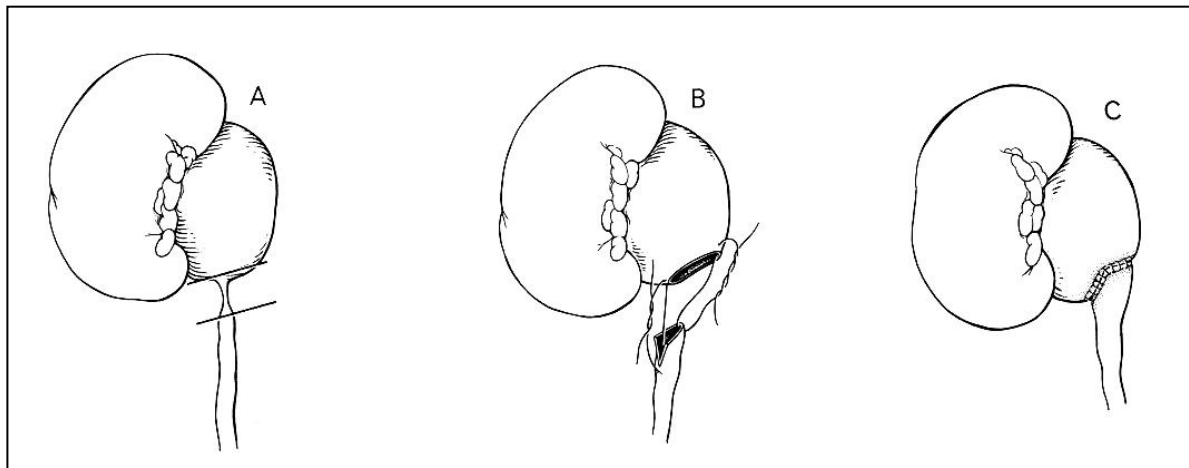
## CORRECTION OF UPJ OBSTRUCTION

The usual repair of a UPJ obstruction (pyeloplasty) involves removal of the abnormal segment of ureter causing the blockage, and the ureter is reconnected to the renal pelvis. **(See below)**

Depending on the individual circumstances a tube may be left across the pyeloplasty (stent) and a tube may be left above the repair to decompress the kidney (nephrostomy). A drain is left near the repair because it is not uncommon to have leakage of urine from the repair. These tubes are usually left in place for 7-10 days.

Complications of the operation include bleeding, infection, kidney damage, air in the chest cavity (pneumothorax), pain, persisting drainage of urine, or delayed drainage of the kidney across the site of repair. Persisting drainage, or delayed emptying of the UPJ may require placement of a ureteral catheter or percutaneous nephrostomy. Scarring or stricture at the pyeloplasty may produce recurrent UPJ obstruction, which may occur in 1-5% of cases.

A newer form of surgery for UPJ obstruction is done through a scope passed into the kidney (percutaneous endopyelotomy). This operation has been performed more commonly in adults. In children it is more commonly used to treat recurrent UPJ obstruction.



## FOLLOW-UP AFTER PYELOPLASTY

After successful repair of a UPJ obstruction, the dilation of the kidney usually persists and an ultrasound or IVP will still "look abnormal". The MAG-3 renal scan with Lasix is usually the best way to know if the result is successful and this is usually performed around 3 months after pyeloplasty.

A child should be followed for at least several years after a pyeloplasty. If the postoperative RUS is normal and the child is doing well, a urine analysis, abdominal exam, blood pressure check, and ultrasound is performed a year after surgery.