

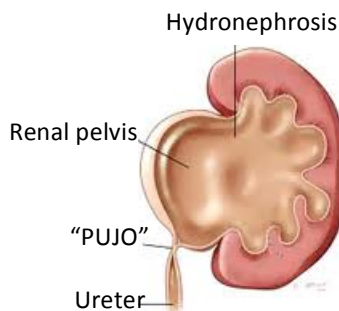
Pyeloplasty operation

What is it?

A surgical procedure to treat blockage of the upper urinary tract.

Background

The kidneys filter the blood to make urine, which passes to the collecting ducts of the kidney. From there, urine accumulates in the renal pelvis and then travels down the ureter to the bladder. Some children have a narrowing or blockage at the junction of the pelvis and the ureter, called a 'pelviureteric junction obstruction' (PUJO).



Who?

This procedure is performed for children who have a significant blockage of their PUJ. This is determined by the degree of hydronephrosis on ultrasound, the results of the nuclear medicine drainage studies, and/or presence of symptoms – urinary tract infections or pain.

How?

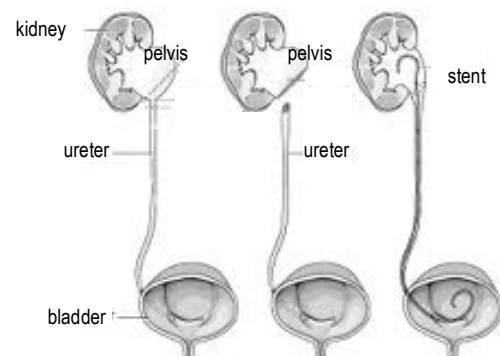
The child is admitted on the day of surgery and the operation performed under general anaesthesia. A dose of antibiotics is given to reduce the chance of urinary tract infection associated with the procedure.

Some surgeons will perform a telescope and xray procedure (cystoscopy and retrograde pyelogram) at the start, to confirm the exact site of blockage.

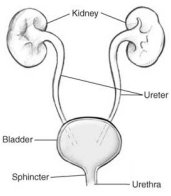
There are various approaches to the actual pyeloplasty: it can be performed through an incision in the back, on the side, or even as key-hole surgery through the abdomen. The choice of approach is determined age and particular anatomy of your child, as well as surgeon preference and experience.

Regardless of the approach, the principles remain common: The narrowed segment of ureter is excised (cut out), and the pelvis is rejoined to normal ureter. As the renal pelvis has been very stretched above the blockage (dilated), there is usually more than sufficient tissue to bridge any gap. The repair does not utilise permanent artificial material. The stitches are dissolving and do not require removal.

To support the new join, and help it heal in the right position, a 'stent' is commonly left inside for a period of time. A stent is a fine plastic tube, which runs from a curl in the renal pelvis to a curl in the bladder (picture). It acts like a straw (helps urine drain through the area of swelling and down to the bladder) as well as a splint (to help the join heal in optimal position). This is a temporary device, removed 4-6 weeks after surgery.



A catheter (tube) is often left in the bladder overnight. In addition, an external drain tube may be left at the wound.



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Post-operative course

Your child will be able to eat and drink after the operation, and will be given regular pain relief.

The bladder catheter is usually removed the day after surgery and the child will go home after they have voided. If a drain tube has been left, this will be removed before discharge.

Your child may have some stinging when they pass urine, and there may also be a small amount of blood in the urine. This is temporary. Your child may need preventative antibiotics until they have the stent removed.

What are the alternatives?

When intervention is required for PUJO, the most successful treatment is a pyeloplasty. While there are alternative approaches to performing the operation, operation principles are very similar.

Other treatments such as balloon dilatation and endopyelotomy (cutting open the blockage from the inside) have a lower success rate, and the same or higher complication rates. For this reason, these are not first-line treatment for significant PUJO in children.

What are the complications?

As with any operation, bleeding and infection are the most frequent complications to occur. Fortunately, these are uncommon in pyeloplasty.

Bleeding is usually mild and self-limited and presents as some blood in the urine.

Infection may occur three days or longer after surgery, presenting with symptoms of fever, dysuria (pain with voiding), frequency (needing to void often) or urgency. If any of these symptoms occur, please seek medical attention for treatment.

Complications specific to pyeloplasty

Because pyeloplasty involves opening the urinary tract, there may be a urinary leak. This is uncommon (<1%) and usually presents with pain, poor appetite, nausea, or fever. A drain may need to be placed if this is a problem.

If no stent is used, swelling at the site of the new join (anastomosis) may impede urine passage from the kidney after surgery, causing further blockage. A tube may need to be placed directly into the kidney (nephrostomy) until the swelling settles. This problem is usually prevented by use of internal stent.

In the longer term, healing may result in scar tissue that generates a new blockage. It is for this reason that babies and children are usually followed up for 2 years following surgery to ensure success of the operation.

What is the follow-up?

First follow-up event is removal of the internal stent. This will be arranged before leaving hospital after the pyeloplasty. It usually occurs 4-6 weeks after surgery. It will involve a day procedure where a cystoscopy (telescope) is performed to snare the stent in the bladder and withdraw it. A brief general anaesthetic is given to children, but no further cuts or stitches are required.

The next follow-up will be one month following stent removal, with another ultrasound. This will usually still show dilatation of the kidney, but should be better than before the operation. The ultrasound should be performed a day or two prior to the clinic appointment. Please ensure that you bring all new and old ultrasound pictures with you to clinic.

Further follow-up will depend on this ultrasound and will be discussed at the clinic appointment.