

## LAPAROSCOPIC PYELOPLASTY

### Introduction

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The kidney produces urine that passes through renal pelvis (funnel shaped tube exiting the kidney) and ureter (20-25cm tube) into the bladder. The segment between the renal pelvis and ureter is called the pelvi-ureteric junction (PUJ).

Pelvi-ureteric junction (PUJ) stenosis is a congenital condition where the PUJ is tight or narrow, causing partial or complete blockage of the kidney. PUJ stenosis is often detected on antenatal ultrasound in pregnancy and affects 1 in 500 live births. The defect is usually repaired when the baby is born to relieve the obstruction and prevent kidney damage. In some patients, PUJ stenosis only causes narrowing in adulthood. The kidney becomes progressively obstructed, causing pain in the side or back, kidney infections or stones. When there are no symptoms, it is sometimes discovered incidentally on CT or ultrasound scans done for other reasons. If the kidney remains obstructed, it will eventually lose function as the pressure build up destroys the kidney cells or nephrons irreversibly. This may result in a “burnt out” kidney where the kidney becomes a thin shell of scar tissue with a very large baggy renal pelvis about the PUJ.

To preserve kidney function, a pyeloplasty is performed to remove the abnormal PUJ and create a new junction (anastomosis) between renal pelvis and ureter. A JJ stent (plastic tube with curls on either end) is placed for 6 weeks to ensure that urine can drain freely, and the anastomosis does not expand or tear under pressure.

### What does the procedure involve?

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Under general anaesthesia, a cystoscopy (bladder inspection with telescope) and retrograde pyelogram (injection of dye) is initially performed to confirm where the obstruction is. A JJ stent is inserted from the bladder past the PUJ to the renal pelvis. Fine laparoscopic or robotic instruments are passed into the abdomen through 3-4 small incisions (5-10mm each) to dissect the renal pelvis and ureter from surrounding organs and tissues. The narrow PUJ segment is removed and sent to the pathologist for analysis. The ureter is joined to the renal pelvis with dissolvable stitches over the JJ stent. At the end of the operation, a drain (tube) is then placed near the join and the skin incisions closed.

Pyeloplasty video (1:22 mins) <https://www.youtube.com/watch?v=To6u8mz9Nn0>

### What are the alternatives?

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Laparoscopic, robotic or open pyeloplasty  
Insertion of JJ stent (changed every 12 months)  
Nephrectomy (removal of burnt out kidney)  
Observation (no blockage or burnt out kidney with no symptoms)

## What are the risks of surgery?

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### Common (>10%)

Frequency, urgency and blood in the urine (especially with stent)  
Back pain when passing urine (pressure transmitted to kidney through stent)

### Occasional (1-5%)

Infection  
Anastomotic leak or scarring - longer catheterisation or further surgery  
Development of a hernia in the wound sites

### Rare (<1%)

Conversion from laparoscopic or robotic to open surgery  
Damage to surrounding organs (bowel, liver, spleen or major vessels)  
Anaesthetic or cardiorespiratory problems requiring intensive care  
Chest infection, clots in the legs and lung, stroke, heart attack, death

## What should I do before surgery?

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- Do not eat, drink, or chew gum for 6 hours before surgery
- If you are on blood thinning medication, discuss this with Dr Ooi

## What should I expect after surgery?

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The usual hospital stay is 2 nights. Sips of fluid are provided initially, followed by light diet. The nurses will assist with daily activities and remove the urinary catheter the following morning. The abdominal drain will be removed prior to discharge and the JJ stent will remain inside to protect the anastomosis for 6 weeks.

## Discharge information

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Drink 2L of fluid each day and eat a normal diet. Do not lift anything >5kg or perform strenuous work for 4-6 weeks. It is normal to see amounts of blood in the urine intermittently and experience pelvic or back discomfort during physical activities or when passing urine (pressure transmitted to the kidney through the JJ stent). These symptoms will resolve once the stent is removed. If simple pain killers are not enough, ask Dr Ooi for other medications to relieve the symptoms. Please contact Dr Ooi's rooms, the hospital, ward or nurse manager if you have any concerns, such as excessive pain, bleeding, difficulty emptying your bladder, wound infection, fever or feel unwell. General advice is also available on our website in the Procedures section.

Dr Ooi will call or see you 2 weeks after surgery to check your progress. A flexible cystoscopy will be arranged as a day procedure under local anaesthetic to remove the stent 6 weeks after surgery. Nuclear scans are performed 3 and 12 months post-operatively to ensure that the kidney is no longer obstructed.