Introduction

This information leaflet has been written to provide information on injection of Deflux® and includes information on pre-operative and post-operative care.

What is an injection of Deflux® and why has it been advised for my child?

Urine, which is produced in the kidneys, passes into the bladder via the ureters. The ureters normally have a ‘one-way, valve’ which prevents the backflow of urine. Some children have a condition called ‘Vesico-Ureteric Reflux’ (VUR or ‘reflux’) which means that urine back tracks up the ureters towards one or both of the kidneys.

Deflux® is an injectable gel containing a polysaccharide (sugar based) product. Deflux® is injected at the site of the VUR, where the ureters open into the bladder, to prevent the backflow of urine to the kidneys.

Injection of Deflux® may also be referred to as a STING procedure. STING is an abbreviation for ‘Sub ureteral Teflon Injection’; although Teflon is no longer used, the name of the procedure has remained in common use. Alternatively; the injection may be referred to as a ‘HIT’ which is an abbreviation for Hydro-distension Injection Technique.
How is an injection of Deflux® performed?

Injection of Deflux® is performed via a cystoscopy.

Cystoscopy involves a tiny fibre-optic camera inside a narrow tube (called a ‘cystoscope’) being passed down the urethra (the tube which carries urine from the bladder and outside the body). In children cystoscopy is undertaken under general anaesthetic.

The cystoscopy allows your child’s doctor to visually inspect the urethra, the inside of the bladder and the ureters. Minor procedures, such as the injection of Deflux®, can be carried out via the cystoscope and, if required, a biopsy (small piece of tissue) can be taken for testing.

Once your child is anaesthetised the cystoscope is lubricated, inserted into the urethra and gently passed up into the bladder. Sterile saline (salty water) is used to fill the bladder via the cystoscope, and allow a clear view. Once the internal anatomy has been inspected, Deflux® is injected into the ureteral junction (opening where the ureter enters the bladder). The Deflux® acts as a “bulking agent” to prevent the backflow of urine to the kidneys.

What are the benefits of the injection of Deflux®?

The injection of Deflux® can prevent the backflow of urine and so prevent urinary tract infections caused by the reflux and so help to protect the kidneys.

What are the problems, complications and risks of an injection of Deflux®?

- Seeing blood in the urine (called haematuria) and having some discomfort (a stinging sensation) during the passing of urine is common after a cystoscopy. Encouraging your child to drink well helps to ease these symptoms which should resolve after one to two days.

- Some patients (about 1 in 20) get pain in the lower back on the side of the Deflux® injection for about 24 hours after the injection.

- Although antibiotics are given at the time of the procedure, children may develop a urine infection which requires a course of antibiotics.

- Sometimes reflux continues despite the treatment with Deflux® and so repeated injections may be required. It is possible that even with repeated treatments with Deflux® the reflux is not cured.

- Very occasionally (in approximately 1 in 100 patients) too much Deflux® can be injected, which can lead to a blockage in the ureter; this may require a further procedure to correct it.

Your child’s consultant will discuss any specific risks for your child in more detail.
Is there an alternative?

Not all children with VUR require surgical intervention; many can be managed conservatively and be given antibiotics and monitored on an outpatient basis. Preventative measures are the best alternative to Deflux®. To prevent the urine infections children must:

- Drink enough so that their urine is clear in colour during the day. The following table provides advice on how much children of different ages should drink per day:

<table>
<thead>
<tr>
<th>Age</th>
<th>Boys and girls</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age four to eight years</td>
<td>1000 to 1400ml</td>
<td></td>
</tr>
<tr>
<td>Age nine to 13 years</td>
<td>1200 to 2100ml</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1400 to 2300ml</td>
<td></td>
</tr>
<tr>
<td>Age 14 to 18 years</td>
<td>1400 to 2500ml</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2100 to 3200ml</td>
<td></td>
</tr>
</tbody>
</table>

- Pass urine regularly (six to eight times per day).
- Avoid constipation.
- Girls must always ensure they wipe genitalia from front to back to prevent inadvertent contamination of the bladder with bacteria from the back passage.

However, for children with recurrent or severe episodes of urinary tract infection secondary to reflux, treatment or surgery is usually required because of the need to protect the kidneys.

The injection of Deflux® is the least invasive treatment.

The alternative operative treatment for VUR is called ‘re-implantation of ureter’ which is an operation to alter the position of the ureter as it enters the bladder. Re-implantation of ureters is an open (not key hole), relatively complex operation with a much slower recovery time necessitating a number of days in hospital. A separate leaflet is available on re-implantation of ureters; please ask if you would like a copy.

Before admission to hospital

- Scans and investigations
  Your child will have undergone different scans (such as ultrasound scans and nuclear medicine scans which identify the function of the kidneys) and investigations (such as blood tests).

- Preoperative assessment
  You will be asked to complete a ‘health screening questionnaire’ when your child is added to the waiting list; this will be completed immediately after your appointment if your child was seen in one of our clinics at Addenbrookes, or over the telephone if your child was reviewed in one of our outlying clinics.
Depending on the severity of your child’s VUR and any other underlying conditions your child may need to be seen by an anaesthetist and might need some blood tests.

- **Purchasing suitable painkillers**
  It is important that you purchase some children’s pain killers such as Paracetamol (e.g. Calpol) and Ibuprofen before admission to hospital so that you have these available at home after discharge. It is unlikely that your child will need ‘stronger’ pain killers but if these are required they will be supplied via the hospital.

- **If your child becomes unwell**
  If your child has a cold, cough, vomiting illness or illness such as chicken pox the operation will need to be postponed to avoid complications. Please telephone us (the telephone number is provided at the end of this leaflet) to discuss this situation prior to coming to hospital.

- **Starvation times**
  Your child will not be able to eat and drink before the operation. Specific advice about this will be given in the confirmation letter sent by post.

- **Urine test**
  A urine specimen should be taken to your GP for testing one week prior to the procedure to ensure your child does not have a urine infection.

**What happens when my child is admitted to hospital?**

You will be asked to bring your child to one of our children’s wards. When you arrive, you will be seen by the nursing staff plus a doctor and an anaesthetist (if not seen by these persons at the preoperative assessment clinic).

You will be able to be present while your child goes to sleep and may also be present in the recovery area when your child wakes up.

**For how long will my child stay in hospital and can I stay with him/her?**

Most children will be able to go home on the same day as the procedure after drinking, eating and passing urine.

If your child does need to stay overnight a bed will be provided for a parent to stay with their child.

**How do I look after my child at home?**

- Encourage plenty of fluids (water or weak squash) as outlined in the table above.
- If your child develops a fever, increased pain, any difficulty passing urine or any other signs of a urine infection you should contact your GP/nurse specialist.
Follow-up

Your child will have an ultrasound scan approximately six weeks after discharge and a Nuclear Medicine kidney function scan (MAG 3 scan) after approximately three months. Information leaflets related to these specific scans are available; please ask if you would like one. You will then be seen in the outpatient clinic with the results of these scans.

Chaperoning:
During your child’s hospital visits they will need to be examined to help diagnose and to plan care. Examination, which may take place before, during and after treatment, is performed by trained members of staff and will always be explained to you beforehand. A chaperone is a separate member of staff who is present during the examination. The role of the chaperone is to provide practical assistance with the examination and to provide support to the child, family member/carer and to the person examining.

Who shall I contact for further advice or with any queries, concerns or questions?

For clinical queries:
The clinical nurse specialists: (Monday to Friday 08:00 to 18:00)
Telephone: 01223 586973
Email: paedsnst@addenbrookes.nhs.uk

The ward you were on:………………………………………

For booking enquiries:
The booking coordinators: 01223 256276 or 01223 348188

We are a smoke-free site: smoking will not be allowed anywhere on the hospital site. For advice and support in quitting, contact your GP or the free NHS stop smoking helpline on 0800 169 0 169.

Other formats:
If you would like this information in another language or audio, please contact Interpreting services on telephone: 01223 348043, or email: interpreting@addenbrookes.nhs.uk For Large Print information please contact the patient information team: patient.info@addenbrookes.nhs.uk