Percutaneous insertion of a nephrostomy tube: procedure-specific information

What is the evidence base for this information?
This leaflet includes advice from consensus panels, the British Association of Urological Surgeons, the Department of Health and evidence-based sources; it is, therefore, a reflection of best practice in the UK. It is intended to supplement any advice you may already have been given by your GP or other healthcare professionals. Alternative treatments are outlined below and can be discussed in more detail with your Urologist or Specialist Nurse.

What does the procedure involve?
A nephrostomy tube is a tube which is placed through the back to drain the kidney. It is usually placed because the kidney is blocked. This is typically inserted under local anaesthetic using ultrasound and/or xray guidance in the radiology (xray) department. The procedure involves insertion of a small tube into the kidney (usually under local anaesthetic) which then allows urine to drain from the kidney into a collecting bag outside the body.

What are the alternatives to this procedure?
No treatment (observation only) or insertion of an internal stent under general anaesthetic.

What should I expect before the procedure?
You will usually be admitted on the day of your surgery unless the tube insertion is being performed during an emergency admission.
If your admission is not an emergency, you may receive an appointment for pre-assessment, approximately 14 days before your admission, to assess your general fitness, to screen for the carriage of MRSA and to perform some baseline investigations. After admission, you will be seen by members of the medical team which may include the Consultant, Specialist Registrar, House Officer and your named nurse.
You will be asked not to eat for 4 hours before surgery but can drink up to the time of the procedure and, immediately before the procedure, you will be given an injection of antibiotics to prevent infection.
If you have any allergies, you must let your doctor know. If you have previously reacted to intravenous contrast medium (the dye used for kidney X-rays and CT scan), you must tell your doctor about this.
Please be sure to inform your Urologist in advance of your surgery if you have any of the following:

- an artificial heart valve
- a coronary artery stent
- a heart pacemaker or defibrillator
- an artificial joint
- an artificial blood vessel graft
- a neurosurgical shunt
- any other implanted foreign body
- a prescription for Warfarin, Aspirin or Clopidogrel (Plavix®)
- a previous or current MRSA infection
- high risk of variant CJD (if you have received a corneal transplant, a neurosurgical dural transplant or previous injections of human-derived growth hormone)

**What happens during the procedure?**

You will lie on an X-ray table, generally flat on your stomach, or nearly flat. You may need to have a needle put into a vein in your arm as the radiologist may give you some intravenous painkillers.

The procedure will be performed by a specially-trained doctor called a radiologist. The radiologist will use either X-rays or ultrasound to decide on the most suitable point for inserting the fine catheter. You skin will then be anaesthetised with local anaesthetic and a fine needle inserted into the kidney.

Once the radiologist is sure that the needle is in a satisfactory position, a guidewire is placed into the kidney, through the needle, which then enables the plastic catheter to be positioned correctly. The catheter is fixed to the skin of your back and attached to a drainage bag.

The procedure will normally take 30 minutes or so but, occasionally, it may take longer.

**What happens immediately after the procedure?**

Once you return to the ward, the nurses will perform some routine observations of your pulse, temperature and blood pressure. You will generally stay in bed for a few hours until you feel comfortable.

There may be some ache around the exit point of the tube from the back. You should avoid making sudden movements, once you are mobile, to ensure that the tube does not get pulled or become displaced.

The tube will be connected to a bag which is usually strapped onto the thigh. The urine drains into this bag, and you will be shown how to empty this bag. If drainage stops, or you have significant pain in the kidney area, then you should let your doctor know, as the tube may be blocked.

The bag needs to be emptied fairly frequently so that it does not become too heavy.

The nurses will monitor your urine output carefully during this period.
Are there any side-effects?
Most procedures have a potential for side-effects. You should be reassured that, although all these complications are well-recognised, the majority of patients do not suffer any problems after a urological procedure.

Please use the check boxes to tick off individual items when you are happy that they have been discussed to your satisfaction:

Common (greater than 1 in 10)
- Minor bleeding from the kidney (visible in the urine drainage bag)
- Short-lived discomfort in the kidney and at the insertion site

Occasional (between 1 in 10 and 1 in 50)
- Leakage of urine around the catheter inside the abdomen
- Blockage of the drainage tube
- Generalised infection (septicaemia) following insertion

Rare (less than 1 in 50)
- Significant bleeding inside the abdomen requiring surgical drainage
- Displacement of the drainage tube
- Failure to place the tube satisfactorily in the kidney requiring alternative treatment (e.g. surgical insertion of a drainage tube)
- Inadvertent damage to adjacent organs (e.g. stomach, bowel)

Hospital-acquired infection (overall risk for Addenbrooke’s)
- Colonisation with MRSA (0.02%, 1 in 5,000)
- Clostridium difficile bowel infection (0.04%; 1 in 2,500)
- MRSA bloodstream infection (0.01%; 1 in 10,000)

(These rates may be greater in high-risk patients e.g. with long-term drainage tubes, after removal of the bladder for cancer, after previous infections, after prolonged hospitalisation or after multiple admissions)

What should I expect when I get home?
There may be some ache around the exit point of the tube from the back. Often the skin here looks red, but if it starts to discharge fluid or pus then you need to let your doctor know.
The tube will be connected to a bag which is usually strapped onto the thigh. The urine drains into this bag, and you will be shown how to empty this bag. If drainage stops, or you have significant pain in the kidney area, then you should let your doctor know, as the tube may be blocked.
The drain can also occasionally leak or become dislodged. If this happens, you will need to seek medical advice, and in the appendix on the back of this information sheet are some simple steps which your doctor or nurse can go through to try and correct these problems. If they are unable to do this, then you will need to be seen by the on-call urology team.
When you leave hospital, you will be given a “draft” discharge summary of your admission. This holds important information about your inpatient stay and your operation. If, in the first few weeks after your discharge, you need to call your GP for any reason or to attend another hospital, please take this summary with you to allow the doctors to see details of your treatment. This is particularly important if you need to consult another doctor within a few days of your discharge.

Usually the tube is placed as a temporary measure until the cause of the blockage to the kidney can be relieved. How long this will take will depend upon the cause of the blockage, and the kind of surgery you will require.

Keep the skin around the nephrostomy tube clean and, to prevent infection, place a sterile dressing around the site where the tube leaves your skin. Dressings should be changed at least twice a week, especially if they get wet. You may shower or bathe 48 hours after the tube has been inserted but try to keep the tube site itself dry. You can protect the skin with plastic wrap during showering or bathing. After 14 days, you may shower without any protection for the tube. Swimming is not recommended as long as the tube is in place.

**What else should I look out for?**

If you experience a high temperature, back pain, redness or swelling around the tube, leakage of urine from the drainage site, poor (or absent) drainage or if the tube falls out, you should contact your doctor immediately. In the appendix on the back of this information sheet are some simple steps which your doctor or nurse can go through to try and correct some of these problems. If they are unable to do this, then you will need to be seen by the on-call urology team.

**Are there any other important points?**

Any subsequent follow-up or treatment will be arranged by your urologist before your discharge.

If your tube needs to be removed at any stage, this must be performed in hospital and you should contact your urologist or Specialist Nurse.

**Appendix: for use by medical and nursing staff. None of the steps outlined here should be undertaken by patients.**

See figures 1 and 2 below.

A: Drain – the plastic tube that exits the patient’s skin.
B: Soft connector – a 25cm clear tube with a small blue tap.
C: Green connector – a short green connector.
D: Catheter bag – the bag into which the fluid drains.
E: Drain fix – the adhesive dressing that holds the drain to the skin.

Most drains are connected as in figure 1 using the soft connector (B) and green connector (C) to connect the drain (A) to the bag (D). Sometimes the drain (A) is connected directly via the green connector (C) to the bag (D) as in figure 2. The method in figure 2 can also be used if the soft connector breaks or leaks. Note there are a few different kinds of drain fix (E).
Clinical Equipment list

1.1 Blocked drain
- 20ml syringe
- 20ml sterile saline
- sterile gloves

1.2 Leaking drain
- soft connector
- green connector
- catheter bag
- adhesive dressing/drain fix eg Tegaderm
- gauze swabs
- sterile gloves
Blocked drain

If the drain has stopped draining it may be blocked or dislodged.
1. Ensure that the blue tap on the soft connector is open (parallel to the drain tube) and not closed (at right angles to the drain tube).
2. Check that tubing is not twisted or kinked.
3. Using a sterile technique flush 10-20ml of sterile saline into the drain and aspirate, either via the blue tap (B) on the soft connector or directly into the drain (A).
If you are unable to flush or aspirate the drain contact the On-call urology team for further advice.

2. Leaking drain
If the drain is leaking, first establish where the problem is by removing the external dressings and inspecting the drain tubing and connections. If you do not have a spare drain fix, try not to remove it unless it is dirty or it is no longer sticking to the patient.
If fluid is leaking around the tube (A) at the skin entry site, attempt flushing as for a blocked drain above. If this does not solve the problem contact the On-call urology team.
If the drain tube (A) exiting the skin is leaking or broken contact the On-call urology team.
If the soft connector (B), green connector (C) or urine bag (D) is leaking or missing simply replace with a new one, connecting as in figure 1 above.
If a soft connector is not available, the catheter bag can be attached directly to the drain using the green connector figure 2 above.

3. Replacement of long term drains
Please note that long term nephrostomy should be routinely changed every three months to prevent complications.

Driving after surgery
It is your responsibility to ensure that you are fit to drive following your surgery. You do not normally need to notify the DVLA unless you have a medical condition that will last for longer than 3 months after your surgery and may affect your ability to drive. You should, however, check with your insurance company before returning to driving. Your doctors will be happy to provide you with advice on request.

Is there any research being carried out in this field at Addenbrooke’s Hospital?
There is no specific research in this area at the moment but all operative procedures performed in the department are subject to rigorous audit at a monthly Audit & Clinical Governance meeting.
Who can I contact for more help or information?

**Oncology Nurses**
- Uro-Oncology Nurse Specialist
  01223 586748
- Bladder cancer Nurse Practitioner (haematuria, chemotherapy & BCG)
  01223 274608
- Prostate cancer Nurse Practitioner
  01223 247608 or 216897 or bleep 154-548
- Surgical Care Practitioner
  01223 348590 or 256157 or bleep 154-134

**Non-Oncology Nurses**
- Urology Nurse Practitioner (incontinence, urodynamics, catheter patients)
  01223 274608 or 586748
- Urology Nurse Practitioner (stoma care)
  01223 349800

**Patient Advice & Liaison Centre (PALS)**
- Telephone
  +44 (0)1223 216756 or 257257
  +44 (0)1223 274432 or 274431
- PatientLine
  *801 (from patient bedside telephones only)
- E mail
  pals@addenbrookes.nhs.uk
- Mail
  PALS, Box No 53
  Addenbrooke's Hospital
  Hills Road, Cambridge, CB2 2QQ

**Chaplaincy and Multi-Faith Community**
- Telephone
  +44 (0)1223 217769
- E mail
  derek.fraser@addenbrookes.nhs.uk
- Mail
  The Chaplaincy, Box No 105
  Addenbrooke's Hospital
  Hills Road, Cambridge, CB2 2QQ

**MINICOM System ("type" system for the hard of hearing)**
- Telephone
  +44 (0)1223 274604

**Access Office (travel, parking & security information)**
- Telephone
  +44 (0)1223 586969
What should I do with this form?

Thank you for taking the trouble to read this information sheet. If you wish to sign it and retain a copy for your own records, please do so below.

If you would like a copy of this form to be filed in your hospital records for future reference, please let your Urologist or Specialist Nurse know. If you do, however, decide to proceed with the scheduled procedure, you will be asked to sign a separate consent form which will be filed in your hospital notes and you will, in addition, be provided with a copy of the form if you wish.

I have read this information sheet and I accept the information it provides.

Signature............................................Date..............................................

How can I get information in alternative formats?

Please ask if you require this information in other languages, large print or audio format: 01223 216032 or patient.information@addenbrookes.nhs.uk

Polish Informacje te można otrzymać w innych językach, w wersji dużym drukiem lub audio. Zamówienia prosimy składać pod numerem: 01223 216032 lub wysyłając e-mail: patient.information@addenbrookes.nhs.uk

Portuguese Se precisar desta informação num outro idioma, em impressão de letras grandes ou formato áudio por favor telefone para o 01223 216032 ou envie uma mensagem para: patient.information@addenbrookes.nhs.uk

Russian Если вам требуется эта информация на другом языке, крупным шрифтом или в аудиоформате, пожалуйста, обращайтесь по телефону 01223 216032 или на вебсайте patient.information@addenbrookes.nhs.uk

Cantonese 若你需要此信息的其他語言版本、大字體版或音頻格式，請致電 01223 216032 或發郵件到：patient.information@addenbrookes.nhs.uk

Turkish Bu bilgiyi diğer dillerde veya büyük baskıla ya da sesli formatta isterseniz lütfen su numaradan kontak kurun: 01223 216032 veya asagidaki adrese e-posta gönderin: patient.information@addenbrookes.nhs.uk
Addenbrooke’s is smoke-free. You cannot smoke anywhere on the site. Smoking increases the severity of some urological diseases and increases the risk of post-operative complications. For advice on quitting, contact your GP or the NHS smoking helpline free on 0800 169 0 169