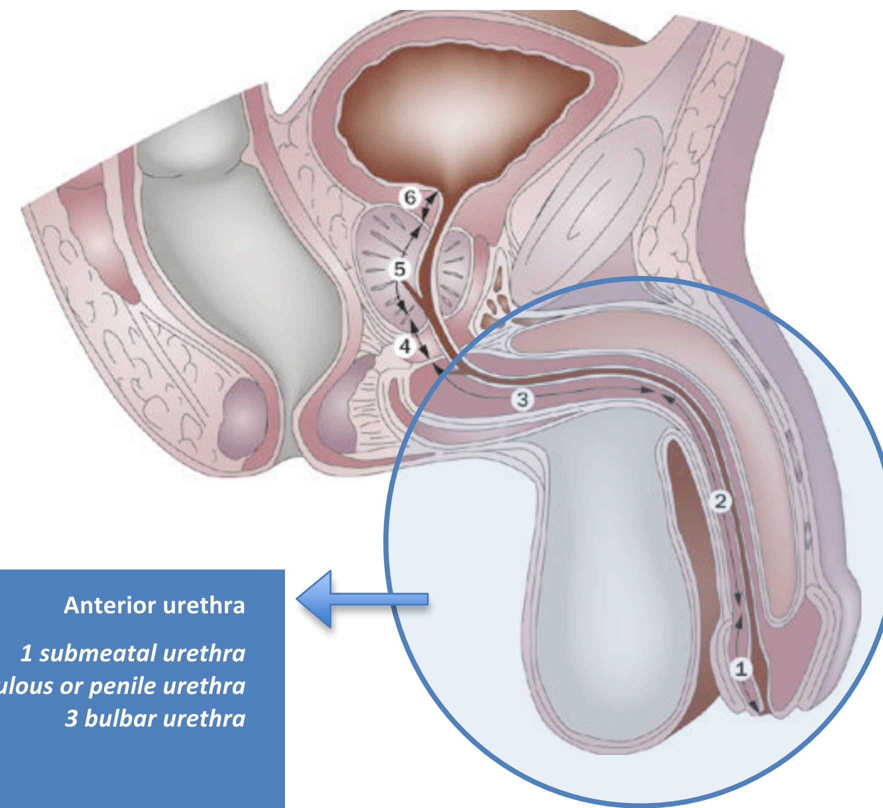
Dorsal inlay buccal mucosal graft urethroplasty
(Asopa technique)

Betsi Cadwaladr University Healthboard

Christian Seipp MD PhD – Consultant Urological Surgeon

Open repair of narrowed urethra offers significant advantages over endoscopic therapy



Anterior urethra

1 submeatal urethra
2 pendulous or penile urethra
3 bulbar urethra

Posterior urethra

4 membranous urethra
5 prostatic urethra
6 bladder neck

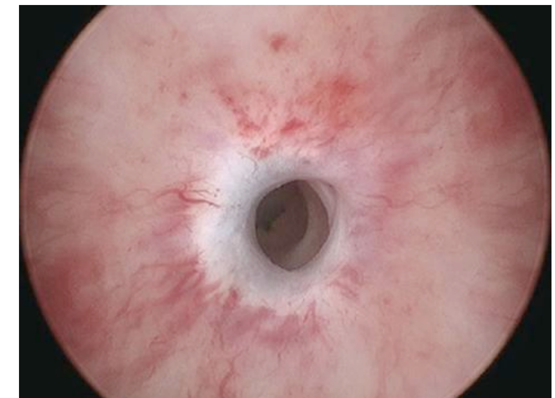
Management of distal anterior urethral urethral strictures

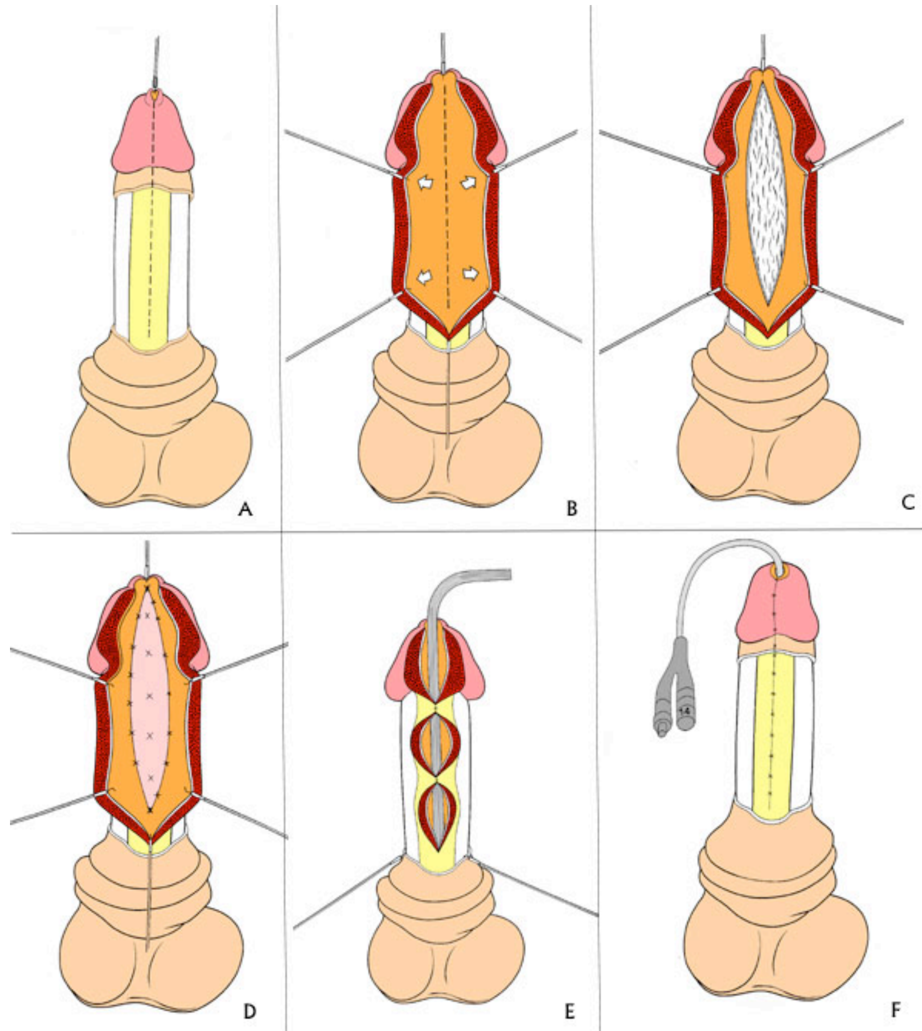
Management of men with anterior urethral stricture disease is a relatively common problem. Anterior urethral strictures can affect patients of all ages and may be congenital or the result of inflammation, injury of skin disease. The symptoms caused by stricture disease include a poor flow and voiding difficulties, an inability to empty the bladder (urinary retention), urinary trace infections and high voiding pressure resulting in damage to the upper urinary tract (renal failure).

A thorough understanding of the urethral anatomy and the cause of the stricture followed by effective treatment are crucial if successful outcomes for the patient are to be achieved.

Historically, urologists viewed open repair as an option that should only be offered to patients who had failed to respond to repeated endoscopic treatment - the so-called “reconstructive ladder”. This dogma has, however, been scrutinized. This traditional approach may subject patients to repeated endoscopic procedures with low success rate (such as dilatation and internal urethrotomy) rather than one potentially curative operation, such as graft or flap urethroplasty.

It also needs to be taken into account that with each endoscopic procedure the extent of scarring increases.





One-stage penile urethroplasty with oral mucosal graft (Asopa technique)

Narrowing of the urethra that cannot be managed endoscopically, may require open surgical repair. Scar tissue causing the narrowing of the water passage may need to be replaced through healthy tissue from other parts of your body. This may be achieved by using penile skin flaps or free grafts of full-thickness skin, bladder or buccal mucosa. The buccal mucosal graft has emerged as the most versatile urethral substitute as it has ideal graft characteristics and can be harvested without significant morbidity. Tissue from inside your mouth (whether it is from your cheek, your lip or your tongue) has become the tissue of choice for reconstructing the urethra.

Technique

The surgery is carried out under general anesthesia. The diseased urethra is exposed either through an incision around the head of the penis or through a midline incision along penis, scrotum or perineum. The urethra is opened longitudinally over the strictured segment. The dorsal surface of the urethra is being incised in the midline. Using sharp dissection, the margins of the incised urethra are spread resulting in an elliptical gap.

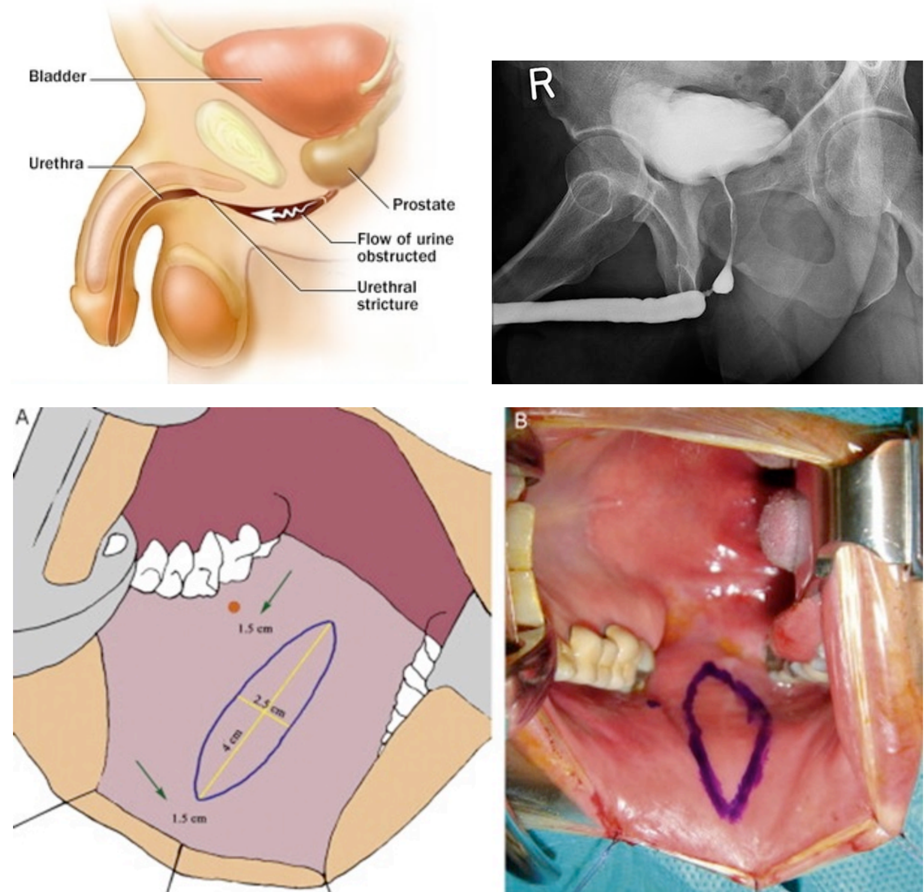
Buccal mucosa is harvested from the cheek or lower lip. The graft is being quilted onto the corporal body of the penis and subsequently sutured to the cut edges of the urethra.

Urethra and wound will subsequently be closed in several layers. A catheter is left in place for 2-3 weeks.

What are possible complications?

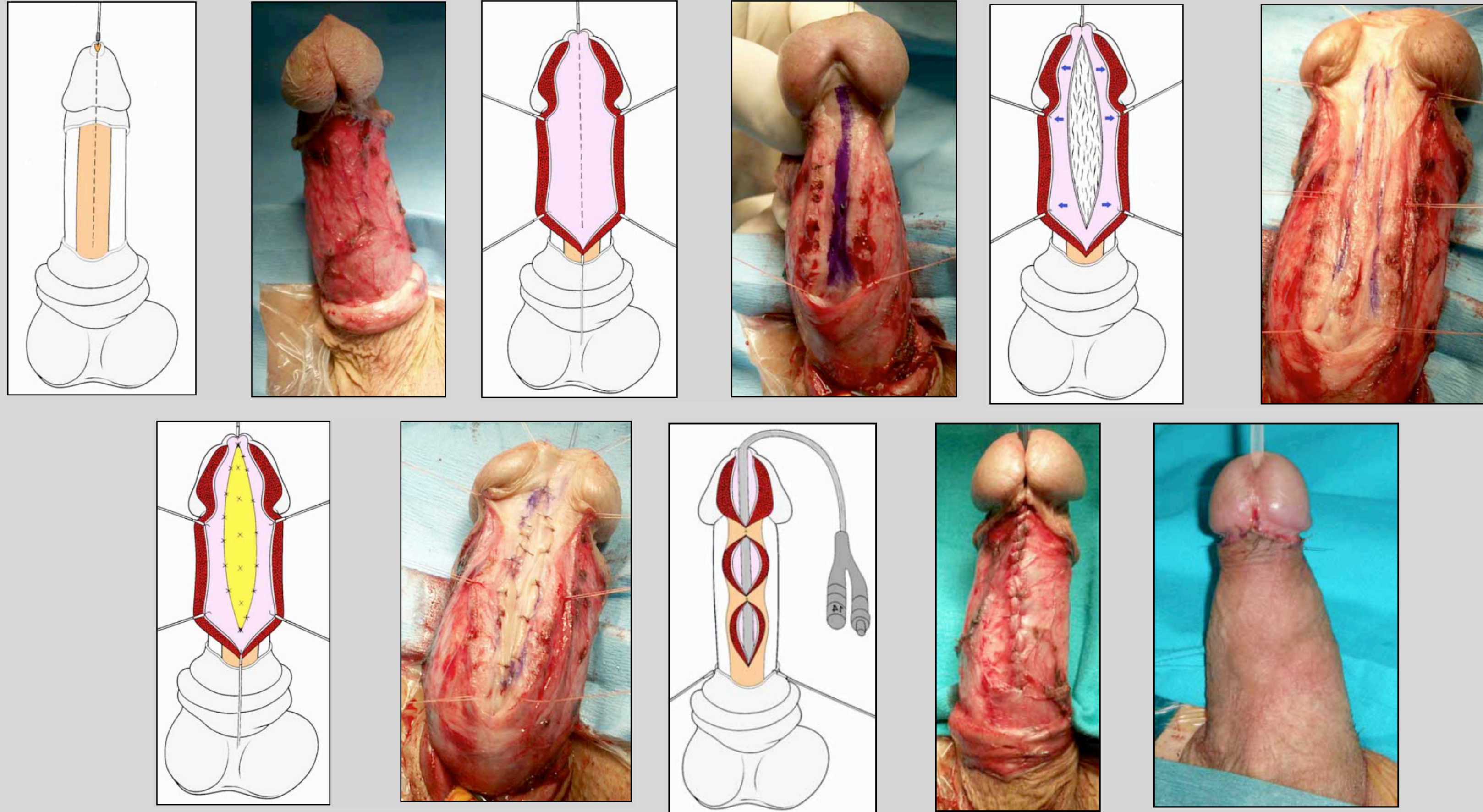
Possible complications and the risk of getting them are shown below. Some are self-limiting or reversible, others are not. The impact can vary a lot from patient to patient, - you should ask your surgeon's advice:

Urinary tract infection requiring antibiotics	10-20%
Swelling and bruising of wound	10-20%
Discomfort/numbness in mouth	10-20%
Recurrent stricture formation	10-20%
Dribbling after urination due to "bagginess" of graft	10-20%
Wound infection requiring antibiotics	2-10%
Failure of urethra to join completely = fistula	2-10%
Lost, altered or bent erections due to scarring	2-10%
Shortening of penis	2-10%
Delayed bleeding requiring further surgery	0.4-2%
Wound breakdown requiring further surgery	0.4-2%
Persistence of suture material requiring removal	0.4-2%
Spraying of urine	0.4-2%
Anaesthetic or cardiovascular problems (chest infection, DVT, PE, stroke, MI, death etc.)	0.4-2%



Details of the operation

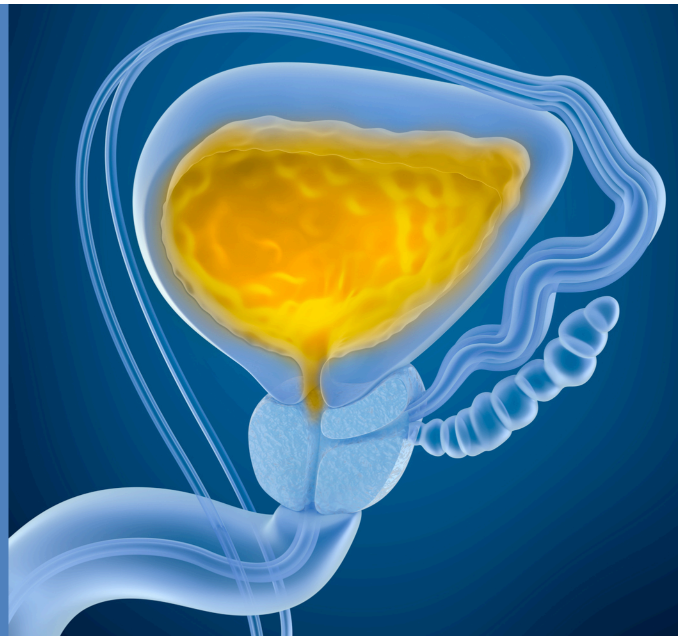
The surgery is carried out under general anaesthetic and you will receive an injection of antibiotics before the procedure. The incision will either be around your penis where the head joins the shaft or in your perineum between the back of your scrotum and your anus. If you still have your foreskin, we may advise you to have a circumcision. We will strip back the skin covering the shaft of the penis to expose its full length, or we will pull the penis out through the perineal incision. We free your urethra from the two erectile cylinders inside the shaft of your penis and open it along the full length of the stricture. A strip of the lining from inside your mouth (buccal mucosa) will be taken and sewn onto the healthy tissue overlying the erectile cylinders. We then sew the cut edges of your urethra directly on to the edges of the graft, which widens your urethra. We will stich the skin back in place either around the head of your penis or in your perineum. Your mouth wound will heal very quickly, - the defect is usually stitched with absorbable sutures. The skin of your penis will also be closed with absorbable sutures, which should disappear within two or three weeks. There will be a firm bandage left in place for 24 hours. We will put a catheter into your bladder, which needs to remain for two to three weeks. The procedure takes about 2-3 hours to complete. You should expect to be in hospital for one night, - occasionally the surgery can be carried out as day case surgery but you will need to attend for a wound check the following morning.



What can I expect when I get home?

Before you are sent home you will receive detailed advice about your recovery. As you will be discharged with a catheter, we will also show you how to look after it at home. We will usually review your wound the following morning and then arrange further follow-up appointments in clinic as required. You will also receive a date for an X-ray examination, usually two to three weeks after your surgery. We will then carry out imaging tests to make sure your urethra and wound have healed before you will be allowed to pass urine normally again.

Antibiotics, tablets and mouthwash will be dispensed from our hospital pharmacy. We will give you advice about what to look out for when you get home. Your surgeon or nurse will also provide you with a detailed leaflet and contact details on how to receive advice and help after your surgery in case that should be necessary.



Betsi Cadwaladr University Healthboard

Department of Urology – Christian Seipp MD PhD, Consultant Urological Surgeon

Female Urology, Andrology & Reconstructive Genito-Urethral Surgery

Wrexham Maelor Hospital – Croesnewydd Road – Wrexham LL13 7TD – Tel.: 01978 31 8243