NICE guidance

Transurethral water jet ablation for lower urinary tract symptoms caused by benign prostatic hyperplasia

Interventional procedures guidance
Published: 19 September 2018
nice.org.uk/guidance/ipg629

Your responsibility

This guidance represents the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take this guidance fully into account. However, the guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Commissioners and/or providers have a responsibility to implement the guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

1 Recommendations

1.1 The evidence on transurethral water jet ablation for lower urinary tract symptoms caused by benign prostatic hyperplasia raises no major safety concerns. The evidence on efficacy is limited in quantity. Therefore, this

procedure should only be used with special arrangements for clinical governance, consent, and audit or research.

1.2 Clinicians wishing to do transurethral water jet ablation for lower urinary tract symptoms caused by benign prostatic hyperplasia should:

- Inform the clinical governance leads in their NHS trusts.
- Ensure that patients understand the uncertainty about the procedure's efficacy and provide them with clear written information to support shared decision-making. In addition, the use of NICE's information for the public is recommended.
- Audit and review clinical outcomes of all patients having transurethral water jet ablation for lower urinary tract symptoms caused by benign prostatic hyperplasia. NICE has identified relevant audit criteria and has developed an audit tool (which is for use at local discretion).

1.3 The procedure should only be done by clinicians who have been trained in the technique.

1.4 NICE encourages further research into transurethral water jet ablation for lower urinary tract symptoms caused by benign prostatic hyperplasia and may update the guidance on publication of further evidence. Further research should report long-term follow-up and include reintervention rates.

2 The condition, current treatments and procedure

The condition

2.1 Benign prostatic hyperplasia is a common condition that affects older men. Stromal and epithelial cells increase in number, causing the prostate to get bigger. It often happens in the periurethral region of the prostate, with large discrete nodules compressing the urethra. Symptoms include hesitancy during urination, interrupted or decreased urine stream (volume and flow rate), nocturia, incomplete voiding and urinary retention.

Current treatments

2.2 Mild symptoms are usually managed conservatively. Drugs may also be used,

such as alpha blockers and 5-alpha-reductase inhibitors. If other treatments have not worked, there are a range of surgical options that may be considered. These include transurethral resection of the prostate, transurethral vaporisation, holmium laser enucleation, insertion of prostatic urethral lift implants, prostate artery embolisation or prostatectomy (see NICE's clinical guidance on lower urinary tract symptoms in men). Potential complications of some of these procedures include bleeding, infection, urethral strictures, incontinence and sexual dysfunction.

The procedure

2.3 Transurethral water jet ablation for lower urinary tract symptoms caused by benign prostatic hyperplasia uses a specialised system that combines image guidance and robotics for the targeted heat-free removal of prostate tissue. The procedure is usually done with the patient under general or spinal anaesthesia. Transrectal ultrasound is used throughout the procedure. A handpiece with an integrated cystoscope and ablation probe is inserted through the urethra and into the bladder. Positioning is confirmed by using visual markers on a computer screen, and the surgeon is able to plan the depth and angle of resection using the system software. Once the surgical mapping is complete, a high-speed jet of saline is delivered to the prostate at various flow rates, according to the depth of penetration needed. The ablated tissue is aspirated through ports in the handpiece and can be used for histological analysis. Haemostasis can be achieved by cautery or by inflating a Foley balloon catheter inside the prostatic cavity. The average resection time is typically about 3 to 5 minutes. After the procedure, a 3-way Foley catheter is placed under traction and continuous bladder irrigation is started. Traction is removed a few hours after the procedure and irrigation is progressively decreased. The catheter is removed before the patient is discharged from hospital, usually the day after the procedure.

2.4 The possible advantages of the procedure include a reduction in resection time compared with other endoscopic methods, and the potential to preserve sexual function. The procedure is heat-free, which removes the risk of complications arising from thermal injury.

3 Committee considerations

The evidence

3.1 To inform the committee, NICE did a rapid review of the published literature on the efficacy and safety of this procedure. This comprised a comprehensive literature search and detailed review of the evidence from 8 sources, which was discussed by the committee. The evidence included 1 randomised controlled trial (reported in 3 separate studies), 1 prospective single arm trial, 3 case series and 1 additional study that reported pooled results from the randomised controlled trial and the single arm trial. This evidence is presented in table 2 of the interventional procedures overview. Other relevant literature is in the appendix of the overview.

3.2 The specialist advisers and the committee considered the key efficacy outcomes to be: improvement in lower urinary tract symptoms and quality of life, improved urinary flow rate and preservation of sexual function.

3.3 The specialist advisers and the committee considered the key safety outcomes to be: bleeding, incontinence, injury to adjacent organs.

3.4 Five commentaries from patients who had experience of this procedure were received, which were discussed by the committee.

Committee comments

3.5 It is possible to collect tissue for histological analysis during this procedure.

3.6 The committee noted that in the 1 randomised trial included in the evidence review, patients who had this procedure were more likely to preserve their existing sexual function compared with patients who had transurethral resection of the prostate.

ISBN: 978-1-4731-3091-3

Endorsing organisation

This guidance has been endorsed by Healthcare Improvement Scotland.

Accreditation