

Urology

10.1 Cystourethroscopy

Key points

Cystourethroscopy is an endoscopic examination of the urethra and bladder.

Indicated for the investigation of haematuria and irritative lower urinary tract symptoms, biopsy and diathermy to lesions, insertion and removal of stents, removal of stones and follow up of patients with previous bladder carcinoma.¹

Procedural considerations

- Pre-procedure – blood tests to assess renal function.
- Assessment of risk factors for bleeding, e.g. aspirin, warfarin.
- Day-case procedure.
- A recent review concludes no need for prophylactic antibiotics (but only low to moderate evidence).²
- Cystoscope may be flexible or rigid. Flexible cystoscopy is usually done under local anaesthetic, whereas rigid cystoscopy requires a general anaesthetic.
- Local anaesthesia (2% lignocaine gel), however, recent evidence does not show significant reduction in pain in men undergoing flexible cystoscopy with the use of lignocaine gel.³

Postoperative considerations

- Depending on indication for procedure a catheter may be inserted at conclusion.
- Patient must pass urine before being discharged.

CONSENT FORM

Name of procedure: Cystourethroscopy +/- biopsy +/- insertion/removal of stents +/- removal of stones

Benefits:

Examination of lower urinary tract and bladder

Risks:

General:

Discomfort

Specific:

Bleeding – post-procedure mild haematuria is common

Urinary tract infection – uncommon

Urethral stricture – very rare

Urinary retention – uncommon

Epididymitis – rare⁴

Perforation – very rare

Procedure involves: Local/general anaesthesia

References

- 1 Reynard J, Brewster S, Biers S. *Oxford Handbook of Urology*. Oxford: Oxford University Press; 2005.
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10.2 Operative treatment of testicular torsion

Key points

Testicular torsion is a surgical emergency where arterial inflow to, and venous outflow from, the testicle is impeded due to the spermatic cord becoming twisted on its axis. The testis is therefore at risk of ischaemia and infarction. For prepubertal and adolescent boys, exploration is performed with attempted salvage of the ipsilateral testis. If torsion is confirmed, contralateral orchidopexy is recommended. The recommendations for neonates with an acute scrotum remain controversial, due to the low testicular salvage rate and low contralateral incidence of torsion.

Procedural considerations

- Pre-procedure – all efforts should be focused on arranging for surgical exploration as soon as possible. Surgery should not be delayed by performing imaging studies and/or laboratory studies.
- General anaesthesia.
- Paramedian, transverse or midline scrotal incision. If the diagnosis of torsion is confirmed, the testicle is detorsioned and the viability assessed. An orchidectomy (if not viable) or orchidopexy (if viable) is performed. A contralateral orchidopexy is also performed as the testicular deformity (bell clapper) predisposing to torsion, is generally bilateral. The tunica vaginalis is everted and a few sutures are passed through the dartos and tunica albuginea.

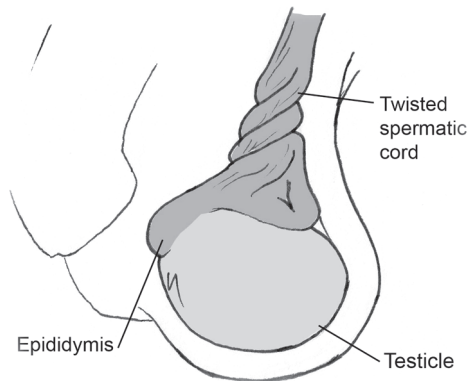


FIGURE 10.1 Testicular torsion.

Postoperative considerations

- Mobilise as comfortable.

Additional considerations

Alternative treatments:

- No treatment – this will lead to loss of testis. Rates of 55%–80% of testicular loss have been reported, mainly due to delay in treatment.^{1,2}
- Medical therapy – manual untwisting using the ‘open book’ method can immediately relieve symptoms. However, this is a difficult procedure (thus not often performed), is only a temporary measure until definitive surgery can be performed, and does not obviate the need for surgery – 100% testicular salvage rates have been reported, converting an acute emergency into an urgent or elective case.³

CONSENT FORM

Name of procedure: Testicular exploration +/- salvage and orchidopexy

Benefits:

- Salvage of testicle
- Prevention of recurrent torsion

Risks:

General:

- Infection – abscess formation in 30% of testes in animal models, with use of non-absorbable sutures⁶
- Bleeding/haematoma
- Adverse scarring

Specific:

Testicular atrophy – directly related to time elapsed since onset of symptoms, in adolescents.

If surgery performed within 4–6 hours: salvage rates approximately 90%. At 12 hours 50%, after 24 hours 10%⁴

Perinatal – <5% salvage rate

Recurrence

Rare but may occur many years later⁵

There is a higher incidence of recurrent torsion after fixation using absorbable sutures.⁶

Lower rate of adhesion formation and thus recurrence with eversion of tunica vaginalis during fixation.⁶

Impaired testicular function/subfertility

Significant subfertility exists in patients following unilateral testicular torsion, implying bilateral testicular disease. Experimental data suggesting a possible ischaemia-reperfusion injury damaging the blood-testes barrier. Evidence in humans is sparse.⁷

Procedure involves: General anaesthesia

Key publications

Tryfonas G, Violaki A, Tsikopoulos G, *et al.* Late postoperative results in males treated for testicular torsion during childhood. *J Pediatr Surg.* 1994; **29**(4): 553–6.⁸

- Retrospective review of 75 patients who were treated for testicular torsion.
- Operative detorsion with bilateral orchidopexy in 64 cases.

- Orchidectomies performed in 11 cases.
- 25 patients were re-examined 1 to 12 years after the surgery.
- Testicular atrophy correlated with duration of symptoms and operative finding.
- If torsion lasted more than 24 hours and viability of the testis was questionable, subsequent atrophy resulted.

References

- 1 Chapman RH, Walton AJ. Torsion of the testis and its appendages. *Br Med J*. 1972; **1**(5793): 164–6.
- 2 Bennett S, Nicholson MS, Little TM. Torsion of the testis: why is the prognosis so poor? *Br Med J (Clin Res Ed)*. 1987; **294**: 824.
- 3 Cattolica EV. Preoperative manual detorsion of the torsed spermatic cord. *J Urol*. 1985; **133**(5): 803–5.
- 4 Davenport M. ABC of general surgery in children: acute problems of the scrotum. *BMJ*. 1996; **312**: 435–7.
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- 7 Koşar A, Küpeli B, Alçigir G, *et al*. Immunologic aspect of testicular torsion: detection of antisperm antibodies in contralateral testicle. *Eur Urol*. 1999; **36**(6): 640–4.
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10.3 Male sterilisation: vasectomy

Key points

This is a form of male contraception. It involves an operation to occlude the vas deferens bilaterally with the intention of permanent birth control. A vasectomy does not affect sex drive, erectile function, or ejaculation. The semen, however, will not contain sperm. The procedure should be considered permanent but in certain cases can be reversed although with no guarantee that fertility will be restored.

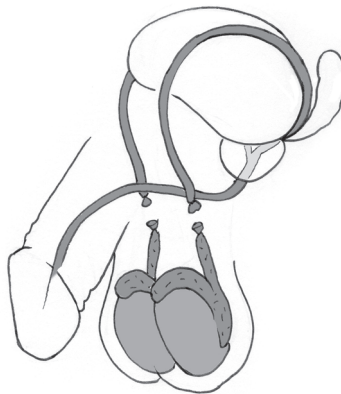


FIGURE 10.2 Vasectomy.

Procedural considerations

- Day-case under LA (GA is also an option).
- 10–15 minutes.
- Conventional vasectomy: either one midline or two small scrotal skin incisions are made in the scrotum and each vas deferens is pulled out, cut, and a small section removed. The ends of the vas deferens are then tied or diathermied and replaced. The skin incisions are then closed with sutures or steri strips.
- ‘No scalpel’ method: a sharp haemostat is used to open the skin at a single point rather than with a scalpel. This method uses a vasal nerve block which is thought to provide better anaesthesia.^{1,2}
- ‘Vas-Clip’ method: this method clips the vas deferens instead of cutting it.

Postoperative considerations

- Simple analgesia for tender scrotum for a few days.
- Supportive and disposable underwear for a few days.
- Return to work within 2 days usually.
- No heavy lifting or strenuous exercise for 1 week.
- Contraceptive effects are not immediate because viable sperm must be cleared from the vas deferens. Therefore, alternative methods of contraception must be used until semen is clear of sperm.
- Semen test after 8 weeks and retested several weeks later if there is sperm in the semen.
- Continued testing until semen is clear of sperm.

Additional considerations

- The commonest requests for reversal are remarriage after divorce or after the death of a partner, the death of a child, a desire for more children, or psychological problems related to the vasectomy.³
- The total failure rate of condoms is approximately 1%.⁴

CONSENT FORM

Name of procedure: Male sterilisation/vasectomy

Benefits:

Permanent contraception

Risks:

General:

Bleeding: 2% with conventional and 0.1% with no-scalpel method^{2,5}

Infection: 3.5% with conventional and 0.9% with no-scalpel method^{2,5}

Specific:

Irreversible

Delay in contraceptive effect – not effective until semen sample clear

Failure – rejoining of vas deferens and fertility restoration: 0.2%–0.4% but can be up to 5%⁸

Chronic testicular pain – up to 33% occasional testicular discomfort, 2% have significant pain⁷

Granuloma due to leakage of sperm – 15%–40% but only 2%–3% are symptomatic⁶

‘Full’ feeling due to filling of epididymis with stored sperm

Procedure involves: Local anaesthesia (general anaesthesia is an option)

Key publications

Cook LA, Van Vliet H, Lopez LM, *et al.* Vasectomy occlusion techniques for male sterilisation. *Cochrane Database Syst Rev.* 2007; 2: CD003991.⁹

- Of the six studies meeting the inclusion criteria.
 - No difference in failure rates for clips vs. conventional vasectomy technique – one trial.
 - No difference in time to reach azoospermia between vasectomy and vas irrigation – three trials.
 - However the authors conclude that the above studies were of low quality and underpowered, thus the results cannot be accepted without further studies.
 - Comparison of fascial interposition vs. no fascial intervention showed a lower failure rate in the fascial interposition group. This group also had more surgical difficulties – one trial.
 - An intra-vas device had a lower success rate than no-scalpel vasectomy – 1 trial.

References

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