# Sterilisation for men
## is vasectomy for everyone?

**Men should consider vasectomy as an irreversible procedure producing permanent sterility and should be aware that although they may not want to father children at the moment they may wish to do so in the future.**

**DAVID ENDE**
MB BS, PhD, FRACS

Dr David Ende is a VMO Urologist, St Vincent's Hospital, Sydney, NSW.

There are various forms of contraception available for men and women but, as yet, no male 'pill'. The options for men, therefore, are using condoms or undergoing sterilisation. As a single procedure, male sterilisation by vasectomy is less morbid and cheaper than female sterilisation by tubal ligation. However, more female sterilisations are performed, even though tubal ligation has a higher mortality (related to the anaesthesia required). Vasectomy is the next most cost effective form of contraception after the intrauterine device. The surgery is also indicated for the prevention of recurrent epididymo-orchitis because it prevents the reflux of urine from the prostatic urethra into the epididymis.

While vasectomy is a simple procedure that can be performed easily on an outpatient basis under local anaesthesia, it requires considerable discussion and a clear understanding of many issues on the part of the patient.

## An irreversible procedure

Vasectomy should be considered an irreversible procedure producing permanent sterilisation. Men without children and younger men should be fully informed of the consequences of the surgery. Although there are no specific cut-off ages below or above which vasectomy should not be performed, clearly younger men should be made fully aware that their future circumstances might change considerably. Unmarried men and men in unstable relationships also need specific counselling.

It is also important for both partners to be comfortable with the decision for the man to undergo a sterilisation procedure and, if possible, both partners should be present at each consultation.

Patients who do not consider vasectomy permanent or who think that reversal is guaranteed should be advised against the procedure.

## Contraindications

Specific contraindications to vasectomy relate to local scrotal conditions. These include local or systemic infection, undiagnosed scrotal masses or an inability to palpate the vas deferens. In this last situation, consideration should be given to absence of the vas that may be associated with other urological congenital abnormalities, such as an absent ipsilateral kidney.

**IN SUMMARY**

- **Vasectomy is a simple and effective form of contraception that can be performed on an outpatient basis under either local or general anaesthetic.**
- **It should be considered by patients as an irreversible procedure producing permanent sterility. Although reversal is possible, fertility and subsequent pregnancy are not guaranteed.**
- **Sterility does not occur immediately and may take many months to be achieved. Patients should be counselled about this, and should undergo postvasectomy testing for sterility.**
- **Most men undergoing vasectomy experience no significant side effects.**

## The vasectomy procedure: the basic steps

Figure 1. The vas and surrounding coverings are delivered through a small incision. The vas is controlled using special forceps – a vas clamp.

Figure 2. The vessels are stipped from the vas and a short segment can then be excised.

Figure 3 (left). One end of the divided vas is left free in the scrotum, and the other end is buried beneath fascia of the perivasal sheath to reduce the risk of recanalisation.

Vasectomy should be deferred in patients taking anticoagulants or who have a coagulopathy. The presence of a large hydrocele, a varicocele or hernia, or previous scrotal surgery may make the procedure more difficult and require a different technique.

## Informed consent

The issue of consent is obviously extremely important and considerable time should be taken to discuss particular aspects. Men must understand that sterility is not immediate and that up to 15 or 20 emissions may be required before all living sperm in the distal vas are cleared. Couples must, therefore, use other forms of contraception until semen analysis confirms azoospermia.

Failure of sterilisation can occur. In very rare cases, the vas may be missed and another structure ligated instead. Ligation of the vas twice on one side, leaving the contralateral vas untouched, has been reported; the incidence of this has been found to correlate directly with the experience of the surgeon.

Recanalisation can also occur, in either the short or longer term. Some techniques, such as cautery to the end of the vas associated with the interposition of adjacent fascia between the two ends of the vas, are associated with a lower failure rate in this respect. Late recanalisation (up to 12 years after vasectomy) has been reported, but is extremely rare.

## Postprocedure pain and other complaints

Postvasectomy pain syndrome is well described and can occur over months to years, sometimes posing significant problems for patients. The pain, which may be a dull ache or a more severe pain, is usually associated with back pressure and congestive epididymitis.[1] Most men experience some discomfort following vasectomy, but most cases settle and do not require further treatment. About 1% of patients, however, experience severe pain and require intervention such as excision of a sperm granuloma or opening of the proximal end of the vas. Noninvasive measures to control pain include the use of anti-inflammatory medication, a scrotal support or a spermatic cord block. Vas reversal and epididymectomy have also been used in some cases of chronic unremitting pain.

Fewer than 5% of sperm granulomas, which occur due to the extravasation of sperm at the testicular end of the vas, are associated with pain and may require excision. Bleeding and wound infection occur in fewer than 3% of cases.

In the past, vasectomy has been linked to various conditions including prostate cancer, testis cancer, autoimmune diseases and ischaemic heart disease. However, no causal effect has ever been proven. Also, there are no proven adverse affects associated with the procedure.

## The procedure

Vasectomy can be performed under either local or general anaesthesia; patients having general anaesthesia are discharged on the same day. The procedure is outlined in the box on this page.

Patients should rest for 24 to 48 hours after the procedure and avoid heavy work and sexual intercourse for about one week. Scrotal support may help to reduce testicular discomfort. Prior to discharge, patients must be reminded to undertake other forms of contraception until sterility has been proven by testing.

## Postvasectomy testing

The distal vas must be emptied to clear the ejaculate of sperm; this takes between 11 and 20 ejaculations in 80% of men. About 80% of men are azoospermic after three months.

There is no clear consensus as to the best means to test for sterility. Some clinicians advocate two sperm counts 12 to 16 weeks after vasectomy, while others recommend only one test. A fresh sperm sample should be provided in a sterile jar – it should be noted that condoms should not be used for the collection as the presence of spermicide or lubricant may affect the result.

The presence of nonmotile sperm at very low concentrations is not reported as azoospermia by laboratories, although it is extremely doubtful that a pregnancy could be achieved in this setting. A repeat specimen should be collected a few weeks later, after several further ejaculations.

The presence of motile sperm usually means sterilisation failure due to a missed vas. Early recanalisation may occur within three months and some clinicians advocate not testing within this time. In a large study, the risk of pregnancy in the presence of a few nonmotile sperm was calculated to be less than the risk of pregnancy due to sterilisation failure because of late recanalisation, the risk of which patients had already accepted prior to the procedure.[1] This study proposed that if the sperm concentration was less than 10,000 per mL and no motile sperm were seen after seven months, a 'special clearance' on the basis of persistent nonmotile sperm could be given to resume unprotected intercourse. Evidence based recommendations on the approved protocol for testing to confirm sterility after vasectomy – the ASERNIP-S protocol – are given in the box on this page.[2]

## Conclusion

Vasectomy is a simple and effective form of contraception with few side effects but is not necessarily the best contraceptive option for all men. It should be considered an irreversible procedure producing permanent sterility. Men without children and younger men, as well as those who are unmarried or in unstable relationships, should be especially aware of this as they may want to have children in the future. Specific contraindications to the procedure include local or systemic infection, undiagnosed scrotal masses and an impalpable vas deferens. Post vasectomy testing for sterility is essential. MT

### The ASERNIP-S protocol for postvasectomy testing and follow up*

Evidence based recommendations for testing after vasectomy to confirm sterility have been published by the Australian Safety and Efficacy Register of New International Procedures – Surgical (ASERNIP-S), a program of the Royal Australasian College of Surgeons that conducts systematic literature reviews of surgical procedures. These recommendations are listed below.[2]

- Postvasectomy testing occurs with only one azoospermic test at three months and after a minimum of 20 ejaculations (an earlier test cannot be recommended on the poor evidence available).
- If the semen sample is azoospermic at the three-month test (i.e. the test is negative), the patient can be considered sterile and no further follow up is necessary.
- If the semen sample contains sperm at the three-month test (i.e. the test is positive), further tests are required.
- If motile sperm are present, the vasectomy is probably a failure and another test one month later will confirm this (and a decision can be made about re-vasectomy).
- If nonmotile sperm are present, further tests should be performed monthly until either an azoospermic sample is provided or 'special clearance' (due to persistent nonmotile sperm) can be given. Special clearance could be given when the patient has provided two samples in a row containing <10,000 sperm/mL (nonmotile) at least seven months postvasectomy.
- Approximately 80% of patients will be cleared after one test and the remaining 20% can continue follow up until cleared, as described above.
- Vasectomy failures will be detected at the three-month test, and hence histological testing of the vas deferens is not necessary (however, it may be useful in a training situation).

* Reproduced with permission from the ASERNIP-S Consumer summary 'Post-vasectomy testing to confirm sterility'.[2] The full report is on the publications page of the ASERNIP-S website (www.surgeons.org/asernip-s/publications.htm).

## References


1. Philip T, Guillebaud J, Budd D. Complications of vasectomy: review of 16,000 patients. Br J Urol 1984; 56: 745-748.
2. ASERNIP–S Consumer summary: Post-vasectomy testing to confirm sterility. Available from: www.surgeons.org/Content/NavigationMenu/Research/ASERNIPS/ASERNIPSConsumerInformation/Post_vasectomy_testi.htm



**DECLARATION OF INTEREST: None.**