Micro-surgical vasectomy reversal

Mr Jas Kalsi
Consultant Urological surgeon

Male infertility can be a tragic and frustrating situation for couples wishing to conceive a child. For 6-12 percent of men that eventually regret the decision to have a vasectomy, help can be found in the hands of experienced micro-surgeons such as Mr Jas Kalsi. Using state–of–the–art microsurgical technology, patients can be sure they are receiving some of the most effective male infertility care currently available.

Mr Jas Kalsi – Consultant Urological Surgeon is highly trained and experienced in male reproductive medicine and surgery.

Mr Kalsi's approach to problem solving is sensitive and friendly. He is highly skilled at performing microsurgical vasectomy reversals. He routinely performs both vaso-vasostomy and epididymo-vasostomy. His meticulous microsurgical technique results in successful vasectomy reversals, including cases of previous failed reversals. He is among a very limited group of micro surgeons who can perform reconnection to the epididymis in cases where this is necessary. He also performs minimally invasive sperm retrieval for those couples choosing in-vitro fertility or for whom vasectomy reversal is not an appropriate option.

Mr Kalsi graduated from University College and Middlesex School of Medicine with Honours. He completed his Urology training on the Imperial higher surgical scheme and completed his Fellowship in Andrology and Male Reproductive Medicine and Surgery at The Institute of Urology, University College London.

He has also authored several peer reviewed journal articles and several chapters regarding treatments for male infertility. He is also a media spokesperson on male health issues.

As a sub-specialist, Mr Kalsi also treats a wide range of other problems related to male infertility. He provides the comprehensive evaluation and care that men in infertile couples deserve and require. The process begins with a thorough physical examination, accompanied by a medical and fertility history. The inability to father a child can be caused by a number of conditions, including chronic disease, injuries, childhood illnesses, congenital conditions, hormone deficiencies, smoking and other lifestyle choices, medications and pelvic surgery involving structures such as the prostate gland and reproductive organs.

Vasectomy Reversal Statistics

Before deciding to have a vasectomy reversal, it is a good idea to understand the facts. Here are a few key vasectomy reversal statistics:

- Microsurgical vasectomy reversals (performed with an operating microscope) are the most effective form of vasectomy reversals
- 75 to 97 percent of microsurgery reverse vasectomies are successful
- The less time between vasectomy and vasectomy reversal, the greater the chances for success
- If no re-connection is possible due to the degree of fibrosis or the length of the defect then a sperm retrieval procedure is advisable at the same time.
- Vasectomy reversal is two to three times less expensive than other fertilization options (such as in–vitro fertilization or intra-cytoplasmic sperm injection)
- The female partner's age, health and lifestyle can also affect future fertility.
- The cost of a vasectomy reversal is significantly less than the cost of in-vitro fertility and sperm retrieval surgery.

- Vasectomy reversals are requested by approximately 6-12% of those who undergo a vasectomy.
- Certain medications can also affect sperm function fertility. Smoking reduces sperm function in some men because some of the toxic chemicals in cigarette smoke get concentrated in the testicles, damaging the sperm.
- Exposure to high heat may also reduce fertility.
- It can take from six to eighteen months to become pregnant after vasectomy reversal, sometimes far earlier and even further down as has been noted in exceptional cases.

The Importance of an Experienced Surgeon

One of the best ways to improve your opportunity for success is to select a highly skilled and experienced vasectomy reversal surgeon. A reversal of vasectomy can be an incredibly precise procedure and requires great expertise. Prior to choosing a doctor, it is always a good idea to look into the credentials and experience of the surgeon that will be performing your procedure.

This procedure involves rejoining of the previously separated tubes with microsurgical techniques and fine sutures. This may either re-joining of the vas to the vas or the vas to the epididymis.

These procedures may lead to the presence of ejaculated sperm, but the results are variable and depend on site of re-anastomosis, the experience and skill of the operator, and the duration of obstruction.

The appearance of spermatozoa after re-anastomosis for vasectomy reversal can be over 90 percent, with pregnancy in over 50 percent. The success rate depends upon the duration between vasectomy and the reversal procedure; in general, the longer after vasectomy, the poorer the pregnancy rate.

What are the alternatives to this procedure?
If your vasectomy was performed more than 19 years ago, assisted conception may be a better option but will involve your partner also requiring medical input to retrieve eggs. Sperm will also need to be retrieved from either the epididymis or the testicle and this is best done with micro-surgery.
The complications of sperm retrieval include haematoma of the scrotum (<5%), infection (1%) and shrinkage of the testicle (<5%). There is a 5-30% risk of multiple pregnancies following assisted conception. Overall, the pregnancy rate is approximately 25-30% but this may require several cycles of treatment.
Assisted conception is performed by specialist Fertility Centres. We can advise you of these on request

Before the procedure
It is important to establish whether your partner is ovulating before vasectomy reversal is undertaken.
You will usually be admitted on the same day as your surgery. You will normally receive an appointment for pre-assessment to assess your general fitness, to screen for the carriage of MRSA and to perform some baseline investigations.

The Procedure
Either a full general anaesthetic (where you will be asleep throughout the procedure) or a spinal anaesthetic (where you are awake but unable to feel anything from the waist down) will be used. All methods minimise pain; your anaesthetist will explain the pros and cons of each type of anaesthetic to you.
The operation is normally performed through a small incision in the front of the scrotum with the ends of the tubes being re-joined using microsurgical techniques. If it is not possible to re-join the divided ends,
it may still be possible to join the upper end to the sperm-carrying mechanism (epididymis) although the results of this procedure are not as good as those from re-joining the vasa themselves. If no re-connection is possible it is advisable to have a sperm retrieval procedure at the same time.

Side-effects associated with vasectomy reversal
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 the procedure.

Common (greater than 1 in 10)
A small amount of scrotal bruising
No guarantee that sperm will return to the semen (this more likely with increasing age)
Although sperm may return, pregnancy is not always achieved
If storing sperm, check that the appropriate forms have been signed
Miscarriage rate of 15-20%; this is no greater than the risk in the normal population
Blood in the semen for the first few ejaculations

Occasional (between 1 in 10 and 1 in 50)
Bleeding requiring further surgery
Chronic testicular pain (5%) or sperm granuloma (painful nodule at the operation site)
5% of reversals (1 in 20) stricture off each year after the procedure, resulting in no sperms being ejaculated

Rare (less than 1 in 50)
Rarely, inflammation or infection of the testes or epididymis requiring antibiotics
Inability to perform the procedure on one or both sides, Under these circumstances it is advisable to perform a sperm retrieval procedure at the same time.

Post-operative Care
Before discharge from the hospital, you should be given advice about your recovery at home.
You are advised not to do any heavy lifting for 2 weeks and not to ejaculate for 6 weeks.
A follow up appointment will be arranged for you in 4 weeks to assess the wound and scrotum.
Over the first few days, the scrotum and groins invariably become a little uncomfortable and bruised. It is not unusual, after a few days, for the wound to appear swollen and slightly weepy. If you are at all worried about this, you should contact your GP or specialist. The skin sutures do not need to be removed and will usually drop out after a couple of weeks; occasionally, they may take slightly longer to disappear.

You will be asked to produce two sperm counts 12 weeks after the operation. On average, sperms take 2-6 months to appear in the semen, although this may take as long as a year. If sperms are not present in the first two samples, however, they are unlikely to appear at a later date. The average post-operative time to conception is 12 months.
Even if sperms are produced in the semen, you may still not be able to produce a pregnancy, either because the sperms are of poor quality or because you have formed antibodies to your own sperms.
Unfortunately, in some men who get positive sperm counts, the tubes may block off at a later stage so that pregnancy is not possible; it may, however, be possible to repeat the operation at a later date if this occurs.
Vasectomy reversal is not normally available on the NHS and usually needs to be performed privately. The total cost for the procedure (package price) can be obtained upon request and will not normally be covered by any private medical insurance you may have.
The chances of success are shown in the table below [1]:

Interval (years)	Patency rate	Pregnancy rate
< 3	**97%**	**75%**
3-8	**88%**	**50-55%**
9-14	**79%**	**40-45%**
15-19	**70%**	**30%**
> 19	**40%**	**< 10%**

Sperm Retrieval

Several assisted reproductive techniques can be combined to use sperm from men who have obstructive azoospermia to fertilize ova of their partners and achieve pregnancy. Spermatozoa obtained by microsurgical aspiration from the epididymis (MESA) [2] or from the testes by microsurgery (m-TESE) [3-4] can be used with eggs aspirated from the female partner for in vitro fertilization [2] or ICSI [3,4]. The fertilization rate of microsurgical sperm aspiration or m-TESE together with ICSI, despite very poor epididymal/testicular sperm quality, is approximately 50 percent, and the pregnancy rate is about 20- 40 percent per cycle Thus, men previously classified as sterile can now be fertile.

Cost-Effectiveness

In patients seeking fertility treatment after a previous vasectomy, surgical re-anastomosis appears to be preferable to assisted reproductive techniques. Two studies have reported that vasectomy reversal was found to be more successful and cost-effective than microsurgical epididymal sperm aspiration (MESA) followed by IVF or ICSI [5,6]. In one analysis based upon expected costs and results in the USA, the cost of vasectomy reversal was $25,475 with a delivery rate of 47 percent; the respective values for ICSI were $72,521 and 33 percent. In contrast, for epididymal obstruction, the results of surgical anastomosis were not as good as those with sperm retrieval and ICSI. Therefore, all options will be discussed with the couple to allow an informed decision to be made [7].

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