Reversal of Vasectomy: Vasovasostomy

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SUMMARY: The increasing popularity of bilateral vasectomy as a method of contraception has resulted in an increased request for reversal (vasovasostomy). The technique is described and the results presented. The implications of these results to the Serviceman in particular and the current advice regarding vasectomy counselling is discussed.

Introduction

With the concern of long term usage of oral contraceptives, bilateral vasectomy has become an increasingly popular method of contraception. This has resulted in an increased request for reversal particularly with the report of excellent results obtained at specialised centres. The Andrology Clinic at Queen Elizabeth Military Hospital in Woolwich was established in 1983 to deal with male infertility and contraception. Since this date following full counselling, 20 attempts at reversal by vasovasostomy have been performed.

The method used is discussed and the results presented.

Patients

Twenty soldiers aged between 30-41 years and in whom a bilateral vasectomy had been carried out for contraceptive purposes have undergone unilateral vasovasostomy since December 1983. Five patients are lost to follow-up.

The youngest at the time of vasectomy was 23 years and the oldest 34 years. The interval between vasectomy and reversal varied between 3 years and 11 years (Table 1).

Table 1

Age at Vasectomy Years	Age at Reversal Years	Interval between Vasectomy & Reversal Years
23-34 years Mean = (27.4)	30-41 years Mean = (35.2)	3-11 years Mean = (6.4)

Eleven of the twenty cases of vasectomy had been performed on men under the age of 30 years outside the Army. Of the 20 reversals performed 16 were associated with divorce and remarriage, 2 resulted from a change of mind, 1 followed the death of a spouse and in 1 the reason is unknown.

Method

The technique of end-to-end anastomosis of the divided vas over a nylon splint, using fine interrupted

sutures was used in the majority of cases. Under general anaesthesia only one vas was approached through a small vertical scrotal incision and the ends proximal to and distal from the testis were defined. Each end was mobilised to allow apposition without tension and the ends cut back until a normal lumen could be identified. Frequently a milky ooze was visible from the testicular vas lumen. If there was any difficulty due to tethering or in securing apposition then the other vas was explored.

Using low power magnification spectacles (x 3.5), a No. 1 monofilament nylon on a straight needle was passed down the lumen of the proximal vas to emerge through the wall. The other end of the nylon was threaded up the distal vas for some 10 cms. The two ends were then accurately anastomosed with four interrupted sutures of 6.0 nylon, inserted through the muscle wall of the vas only. The accuracy of placement is greatly enhanced by the use of the magnifying spectacles. Once the anastomosis was completed the splint was removed and the scrotal skin sutured. A scrotal support and bedrest for 48 hours was usual. No antibiotics were routinely used. Drainage was not usually required.

Results

Twenty operations for vasovasostomy have been performed in the 2 year period of the study. Five of these patients were unavailable for review because they had left the forces. Seminal analysis was undertaken at 2 months postoperatively and at various times thereafter.

Of the 15 cases in the review group, eleven (73%) produced sperm counts greater than 5 million/ml (range 5-25 million/ml). Only four (26.6%) had achieved a pregnancy at follow-up 6-12 months later. There was no significant difference between the vasectomy/reversal interval in this successful group (3 years-8 years) and/or in the group of failures (3-11 years).

Discussion

There have been many reports of conventional (end-to-end) vasovasostomy¹. The best series attain a 53% pregnancy rate and 88% reappearance of sperm in ejaculate². Indeed, using a microsurgical technique, pregnancy rates of 71% have been obtained³.

The results of this study did not attain this pregnancy rate and various factors may be attributed to this.

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- 1 **Technique.** Operations were performed, using the same technique, by Consultant and Senior Registrars in Urology. The results were not operator dependent. The conventional technique, although technically not difficult, is described by the protagonists of microsurgical techniques as a crude procedure often creating partially obstructed lumens and even fistulate. A more precise technique is therefore required. Unilateral vasovasostomy only was performed. Improved results would be expected if both sides were attempted².
- 2 **Age.** The poorer results obtained in this study may be attributed to the age at reversal. The majority (85%) undergoing reversal were over 35 years of age, and by this age the natural fertility of the man or his new partner would be expected to have diminished¹.
- 3 **Vasectomy technique.** The majority of general surgeons would consider vasectomy to be an irreversible procedure and to avoid the risk of recanalisation, the vas may be mobilised and stripped of its coverings for 2–3 cms before a section is excised for confirmatory histology. The gap so created and more importantly the loss of nerve and blood supply to the vas secondary to the dissection, may affect the contractibility and hence the success of any reversal procedure.
- 4 **Immunological.** Seventy per cent of vasectomised men develop auto-antibodies to spermatozoa⁴. This is secondary to sperm leakage occurring within the epididymis or at the vas end itself, and is associated with granuloma formation. In the past the marked discrepancy between the number of patients in whom sperm returns and those who achieve pregnancies has

been attributed to the appearance of these sperm-agglutinating-and-immobilising antibodies in the semen. Indeed it has been found that the chances of success are much better if reversal is performed within two years of vasectomy and that there is much less chance of pregnancy seven years post vasectomy¹.

The policy concerning vasectomy in most Service Hospitals is not to perform the procedure in men below the age of 30 years unless there are exceptional circumstances. The reason for this is that various emotional and service factors result in a higher incidence of marital disharmony within this younger age group. This study would appear to vindicate this policy in that 11 of the 15 were under 30 years of age at the time of their vasectomy.

The success of vasectomy reversal, as assessed by a pregnancy, is achieved in approximately 1 in 4 patients in this unit and this low rate is attributed physically to the fact that the patients are in an older age group. In the light of these results it is recommended that referring Medical Officers should emphasise to the patient that the statement on the current consent form for vasectomy (MRO Form 111) concerning the irreversibility of vasectomy is applicable in the majority of cases.

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