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Clinical Problems

Vasectomy

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Vasectomy as a method of contraception must be considered from two different aspects—the problem of the population explosion and the personal one of the married couple. The global problem of population control is scarcely recognized, even in those countries with a rapidly increasing population. The greatest single obstacle to the economic and social advancement of the majority in the developing world is rampant population growth. In India, where over 8 million men have already had a vasectomy, a million new lives are added to the population every month. The Philippine Islands currently have a population of 37 million; at the present rate of growth

these islands would have to support over 100 million people in 35 years' time unless some form of population control is instituted. Sixteen centuries were required to double the world population after the birth of Christ, but the present population will double in 35 years. A child born today in a world of 3 billion people will expect to see an increase to 15 billion, and his grandchild will live in a world of 60 billion.¹

Predicting population changes is a favourite sport of professional demographers. The population of North America, with a growth rate of 1.1% per year, could double in the next 63 years. Latin America could double its population in 24 years. Europe has an average growth rate of 0.8%, which gives a doubling time of 88 years. The populations of France, Switzerland, and the Netherlands could double in 60-80 years; those of Italy in 100 years; United Kingdom 117 years; Czechoslovakia, Austria, and Ireland 140 years; West Germany 175 years; and East Germany 700 years. The population of the Soviet Union could double in 70 years. If the world's population

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doubling time is taken as 35 years the number of people on this planet would be a billion billion in a thousand years from now—or 1,700 people per square yard (2,030 per square metre) of the earth's surface.²

These figures, fantastic as they seem, can be expressed in even simpler language. If a population doubles in 35 years amenities such as houses, schools, water supply, sewage disposal, prisons, and hospitals will have to double at the same rate in order merely to maintain the present standards. Since this doubling rate is predominantly one affecting the less affluent countries the increase in the population is the greatest single factor in economic retardation. The realization of this problem focuses a need for an appraisal of vasectomy, not merely as a method of contraception for a married couple but as a possible method of population control.

Of the various methods of contraception only the condom, vasectomy, and coitus interruptus involve the male partner. Diaphragms, caps, coils, the "pill," and tubal ligation affect the female partner; each of these methods has disadvantages as well as advantages. Unlike tubal ligation, vasectomy once performed and confirmed with two negative sperm tests is safe and reliable. There have been no reports in the literature of pregnancies occurring after two negative sperm counts. Assessment of the couple is the most important factor in the decision to submit a man to vasectomy; this decision is not made any easier when the operation is publicized adversely in the daily and Sunday newspapers.

Discussion with the Patient

In the mind of the public, vasectomy has until recently been confused with castration. Frequently such questions as "will I become fat or lose my interest in sex?" indicate that the patient is contemplating endocrine deprivation rather than mechanical blockage. It is essential to stress that with the modern operation nothing is removed and that all parts will remain, albeit with a different alignment. For the peace of mind of the couple it can be emphasized that since nothing is removed the possibility of reversal in case of family disaster is at least a theoretical possibility. There are few surgeons who are prepared to operate without seeing the husband and the wife together. When distance or family difficulties preclude this reliance must be placed on the couple's own doctor, who is then responsible for completion of the consent form. One possible source of postoperative problems is the lack of time given to discussion before proceeding with the operation.

Selection for Vasectomy

Normally only married men are eligible for this operation, though single men with a hereditary disability can be considered. Unless there are strong medical reasons a couple without children should rarely be considered. When both partners have been previously married and already have families neither may wish to start a third family. In a personal series (D.M.W.) the average age of the male partner was 36 and that of the female partner 34. The family size averaged 3.6 children, with a maximum of 8. Though the medical reasons were extremely varied the most common was either that the wife was unable to take the pill or that the husband was not prepared to allow his wife to continue with it. It is interesting that in this latter circumstance it is the man who has taken the initiative in seeking vasectomy.

Contraindications

The major contraindication to vasectomy is an unstable marriage. Where there are problems of incompatibility any

question of vasectomy must be abandoned. Especial care must be taken over an elderly man and a young wife. In all circumstances the couple's own doctor, unless influenced by religion or other reasons, is the best judge of the need for vasectomy. Few surgeons would be prepared to operate without discussion and reassurance of the patient himself.

Reversibility

When this operation was first used as a method of contraception in Britain in 1966 a small section of the vas was excised, but on occasions recanalization occurred.³ Wider excision of the vas, removing 6-8 cm, though less likely to be followed by recanalization makes the possibility of reconstruction negligible. Looping the vas back on itself, as described by Rolnick,⁴ left a nodule of avascular tissue which at times became painful. It became necessary to devise a method whereby spontaneous recanalization would be impossible yet a minimal length of the vas would be destroyed. One of us (P.R.) therefore developed a technique to achieve these ends.

The Cross-over Technique

The vasa are identified and exposed on each side of the scrotum. If the vas is traced downwards towards the epididymis it becomes convoluted, and this appearance is absolutely characteristic. It is not necessary to send every vas away for histological confirmation provided the convoluted portion has been

FIG. 1—Exposure of both vasa; the lower end of the vasa is convoluted.

FIG. 2—The right vas is sectioned high, the left vas sectioned low. Curved forceps are used on the upper portion, straight forceps are used on the lower portion.

FIG. 3—Transposition of the long ends of the vasa to the opposite scrotal compartment.

FIG. 4—Inadvertent cross-union resulting from failure to identify the ends correctly. Recanalization to the opposite vas may occur.

identified. When in doubt histological confirmation is essential. After a 6-7 cm length of both vasa has been exposed curved artery forceps are used to mark the upper ends and straight forceps are used to mark the lower ends. The vas is divided high on one side and low on the other. The long ends are then drawn through to the opposite side by means of forceps thrust through the scrotal raphe. It is essential that all ends are carefully identified less confusion results. The upper ends are tied together on one side of the scrotum and the lower ends are tied on the opposite side (Figs. 1-3). Inadvertent cross-union could result in recanalization of the vasa unless care is taken to identify correctly the ends of the vas at the time of ligature (Fig. 4). The advantage of this technique is that recanalization between the upper and lower vasa cannot occur, since both the upper ends are in the opposite side of the scrotum to the lower ends. Recanalization when it occurs can be both embarrassing and expensive for the surgeon. Since none of the vas has been removed with the cross-over technique the patient can be reassured that reversibility is at least possible.

Local or General Anaesthesia

Use of local or general anaesthesia is a matter of individual choice. Achieving local anaesthesia is not as simple as has been made out, since this may be painful, and handling the vas occasionally causes a sharp drop in blood pressure and even fainting. Not everyone is indifferent to injections into the scrotum, nor do others enjoy watching the procedure. The cross-over technique under a local anaesthetic would be too time-consuming, and because of the extra manipulation there would be additional discomfort. A vasectomy under local anaesthesia carries an appreciable risk of postoperative haematoma formation, a complication which is apt to occur if the patient goes home immediately after the operation. At least three to four hours' rest after vasectomy is desirable whether the operation is done under local or general anaesthesia. As described in the *Guardian* of 27 January 1971, patients under local anaesthesia can be both observant and critical, even when there is no discomfort. General anaesthesia adds to the expense, since even when carried out under the N.H.S. an extra doctor is required. There are, however, many advantages—the patient does not see the operation being performed, possibly a small point but an important one in sensitive patients; there is no discomfort associated with the procedure; and there are no unpleasant memories afterwards. The incidence of haematoma formation is reduced under a general anaesthetic and the cross-over technique is possible.

Persistent Sperm

It was an unpleasant surprise for some surgeons to discover that not merely could spermatozoa be detected several months after vasectomy but also that these were viable. It is essential that full contraceptive techniques are continued until two ejaculates with negative sperm counts are obtained, with at least a month's interval between the tests. If spermatozoa can be detected a year after vasectomy there may have been recanalization, the vas may not have been correctly identified before section, or there may have been a third vas present.^{5 6}

Collection of Ejaculate

In some instances the ejaculate is collected fresh in a side room of the laboratory. Not all men find this easy, and since the freshness is not essential for the evaluation of sterility (though it may be essential to determine the motility) many men prefer to collect the specimen at home. The presence of one spermatozoon must be taken as positive, since if there is one there may be others, and in a court of law the question "How many spermatozoa are required for one pregnancy" could be damning unless there was complete azoospermia.

National Health Service or Private Arrangement

The previous Minister of Health, Mr. Richard Crossman, stated that vasectomy was available on the N.H.S. on medical grounds in the interests of the health of either the husband or the wife. What these grounds are have never really been clarified. When a doctor knowing the background of the couple feels that such a step is justified for medical reasons no surgeon would ignore such a request. At the present time when there are no grounds apart from purely social or economic ones the arrangements must be made privately.

Late Effect of Vasectomy

It has recently been suggested that psychosexual problems will arise after vasectomy.^{7 8} In the last 500 patients seen by us two were referred back because of psychosexual problems. This may reflect careful selection by the private doctor before referral.

Animal experiments have suggested that there is a feedback mechanism in the testicles whereby the activity of the germinal layer of cells is reduced and the testosterone metabolism can be altered.⁹ This process, if it occurs in men, must be reversible because pregnancies have resulted after successful reanastomosis of the vasa.

Vasectomy has a place in controlling pregnancy. It is an operation which can be applied on a large scale for population control, since once the patient becomes sperm free no further intervention or supervision is required. For the feckless, the inept, or the merely forgetful vasectomy may well be the most reliable method of contraception. One factor, in view of the population explosion and the modern ideas of society, is that whereas irresponsible and promiscuous copulation may be acceptable there is a responsibility to society for procreation.

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