

## THE LANCET

### Meeting the Need for Female Sterilisation

VOLUNTARY sterilisation is the single most common form of fertility control world wide. 130 million women and 50 million men are sterilised, and more couples use sterilisation than oral contraceptives and intrauterine contraceptive devices combined. In Britain and the USA, male and female sterilisation is used by almost 30% of couples of reproductive age.<sup>1</sup> The mean age when individuals choose sterilisation continues to fall, and if present trends persist in the USA, three out of four couples will choose sterilisation between their last wanted birth and the menopause.<sup>2</sup> Globally, the 1990s are likely to see unprecedented numbers of sterilisation operations.<sup>3</sup> The surgical, managerial, and ethical standards that are set nationally and internationally will be of the utmost importance.

When a surgical procedure is used by tens—or even hundreds—of millions of people, then understanding rare complications and securing small, incremental improvements in technique are essential. However, the study of rare events or small changes requires large numbers of patients. The case-fatality associated with tubal sterilisation in the USA is approximately 4/100 000.<sup>4</sup> In Bangladesh, 21 deaths were reported among 108 875 female sterilisations, a death-to-case rate of 19.3 per 100 000. In turn, 100 000 female sterilisations are estimated to avert over 1000 maternal

deaths in the years between operation and the natural end of fertility for the women concerned.<sup>5</sup>

Among 20 749 female sterilisations in the records of Family Health International, 208 pregnancies were recorded;<sup>6</sup> such pregnancies often end in induced abortions.<sup>7</sup> Approximately one-third of these were luteal phase pregnancies that had gone undetected at the time of surgery. Younger women were more likely and lactating women less likely to have post-sterilisation pregnancies. Early studies of tubal occlusion techniques suggested that failures were more common after mechanical clips than after rings, bipolar cautery, or the Pomeroy technique, but more recent data show little or no difference. Nevertheless, in the USA high-frequency bipolar electrocautery is used in 75% or more of all cases, because of the perception that this technique has the lowest failure rate. Ectopic pregnancies occurred at a rate of 0.64/10 000 operations (7.7/100 pregnancies) and may be more common after cautery than after mechanical occlusion.<sup>8</sup> In Europe and developing countries clips, such as the 'Filshie Clip', are increasingly used.

Just as there are several ways of occluding the fallopian tubes so there are several ways of entering the abdomen. Minilaparotomy, a technique that is increasingly used in developing countries, is safe and cheap, and can be done under local anaesthesia. There is a strong consensus that if a surgeon, especially in a peripheral centre, does not do many operations (eg, two or three a month or even a week), then he or she should use a minilaparotomy technique.

Laparoscopic sterilisation offers convenience to the woman and can be a safe procedure. However, it is more demanding than minilaparotomy, both in the level of surgical skill required and in the equipment used. In Britain, the Marie Stopes clinics do about 300 day-care laparoscopic sterilisations a year, about half under local anaesthesia augmented by sedatives. Partly under the leadership of the US Agency for International Development, laparoscopic techniques have been used in developing countries since the 1970s. In well-equipped urban centres with a high volume of cases they have proved to be a valuable way of offering family planning.

One or two bold spirits have taken laparoscopic sterilisation into rural areas.<sup>9</sup> When the organisational structure is sufficient to counsel and to obtain informed consent from large numbers of women, an astonishing volume of laparoscopic sterilisations have been safely done in so called "sterilisation camps".<sup>10</sup>

1. Potts M. Birth control methods in the United States. *Fam Plann Perspect* 1988; 20: 288-97.  
2. Bumpass LL. The risk of an unwanted birth and the changing content of contraceptive sterilization in the U.S. *Popul Studies* 1988; 41: 347-64.  
3. Kessel E, Mumford S. Potential demand for voluntary female sterilization in the 1980s: the compelling need for a nonsurgical method. *Fertil Steril* 1982; 37: 725-33.  
4. Peterson H, De Sotiano F, Greenspan JR, et al. Mortality risk associated with tubal sterilization in United States hospitals. *Am J Obstet Gynecol* 1982; 143: 125-29.

5. Grimes DA, Peterson HB, Rosenberg MJ, et al. Sterilization attributable deaths in Bangladesh. *Int J Gynaecol Obstet* 1982; 20: 149-54.  
6. Chi I-c, Potts M, Wilkens L. Rare events associated with tubal sterilizations: an international experience. *Obstet Gynecol Survey* 1986; 41: 7-19.  
7. Chi I-c, Laufer L, Arwood R. The history of pregnancies that occur following female sterilization. *Int J Gynaecol Obstet* 1981; 17: 265-67.  
8. Chi I-c, Laufer LE, Arwood RJ. Ectopic pregnancy following female sterilization procedures. *Adv Plann Parent* 1981; 16: 52-58.  
9. Sheth SS, Desai VJ, Pawar A, Pawar V. Laparoscopic female sterilization camps. *Lancet* 1988; ii: 1415-16.  
10. Guillebaud J. Mass laparoscopic sterilization. *Br J Obstet Gynaecol* 1989; 96: 1019-21.

Experience has been most extensive in the Indian subcontinent, where the largest rural populations in need of voluntary family planning still exist and where surgeons such as Mehta<sup>11</sup> have done hundreds of thousands of laparoscopic sterilisations.

The drawbacks of such an approach are that overconfident surgeons or the misuse of equipment (perhaps especially in the present age with risks of human immunodeficiency virus transmission) could increase risks to the women. There is also a danger that inadequate explanations of the consequences and risks of sterilisation will be given to a rural woman. However, with responsible, well-trained operators, the advantages are also obvious.

Voluntary sterilisation of people of either sex is a very important individual and family decision. How an individual is counselled can be just as important and as challenging as how the technology is used. It is part of the ingrained mythology of family planning that India gives, or has given, transistor radios to those who accept sterilisation. In reality this never happened, but some countries do offer money, or a new sari, as reimbursement for travel and work time lost. The only study of such "compensation" happens to be about vasectomies, but it suggests that payments may bring forward an operation that might have occurred later; the offer of money had no systematic influence on postoperative problems, including regret.<sup>12</sup>

Whilst coercion must be unequivocally condemned, so must the still common tendency of some medical services to deny or impede wanted operations. A study in Honduras, in which women were interviewed one year after they requested a tubal ligation, found that more women were pregnant with yet another unintended pregnancy than had been able to obtain the operation, because the service providers erected too many hurdles between the women and the operation.<sup>13</sup> Guidelines are necessary to prevent coercion—individuals must be properly informed about the risks and benefits of the operation and about the advantages and disadvantages of alternative methods of contraception. Thus, a woman may seek a sterilisation because she is misinformed about the oral contraceptive pill, although the recent decision by the Fertility and Maternal Health Drugs Advisory Committee of the US Food and Drug Administration to recommend that healthy women over 40 may continue to use oral contraceptives should encourage more use of reversible methods by older women, both in the USA and elsewhere.

All over the world voluntary sterilisation is a wanted, needed procedure, which is likely to be carried out in unparalleled numbers in the 1990s.

Individuals seeking the operation must be able to make an informed choice. Those providing this service must tread a wise path between too little self control, which can turn an increasingly popular operation into a regretted or even dangerous procedure, and the setting up of too many inflexible controls, which may prevent those who have most to gain, from the point of health and family welfare, from receiving the operation.

11. Mehta PV. A total of 250 136 laparoscopic sterilizations by a single operator. *Br J Obstet Gynaecol* 1989; 96: 1024-34.

12. Thepa S, Abeywickrama D, Wilkins LR. Effects of compensatory payments on vasectomy acceptance: in urban Sri Lanka: a comparison of two economic groups. *Sexual Fam Plann* 1987; 18: 352-60.

13. Janowitz J, Nunez J, Covington DL, Colven C. Why women don't get sterilized: a follow-up of women in Honduras. *Sexual Fam Plann* 1985; 16: 106-12.