28 Suppose you had discussed it at some length with your wife and had agreed that in such an event her kidneys could be removed would you object to being asked? (This was not asked of those answering No to previous question)	18.5%	63.6%	17.9%
	Yes	No	Did not answer
29 In fact should such an event occur the kidneys would need to be removed within half an hour of death. In view of this would you still agree to the removal of her kidneys?	69.6%	20.6%	9.8%
30 If your wife had been so severely injured in an accident and it was clear that she had only a few hours to live would you object to being approached with such a proposition before her death?	42.2%	49.0%	8.8%
31 You probably know that it is possible to keep a body alive even though the person is technically dead. This amounts to keeping the vital parts functioning. Would you object to your wife's body being kept going in this way so that the kidney removed is in as perfect a condition as possible?	39.8%	52.0%	8.2%
32 Do you feel that if someone decides to donate his kidneys when he dies his decision should have to be formally approved by his next of kin?	35.8%	63.4%	0.8%
33 If his next of kin disapproves should the potential donor's wishes be overriding?	69.4%	28.0%	2.6%
34 Do you feel that doctors should have the power to remove kidneys from people who have recently died without consulting their next of kin?	24.8%	74.0%	1.2%
35 Anyone can carry around a kidney donor card which indicates that in the event of their death their kidneys can be removed. Last year a member of Parliament tried to change the law so that anyone who did not want his kidneys removed would need to register his wishes in some specified manner. Would you approve of such a change?	34.2%	65.2%	0.6%
36 Do you believe in some form of life after death?	56.2%	39.0%	4.8%
37 Do you believe people "need" their bodies after death?	3.4%	94.8%	1.8%
38 Have you agreed with your wife how your body is to be disposed of when you die, from whatever cause?	No 65.8%	Burial 10.2%	
	Cremation 22.8%	Donated to research 1.2%	
39 Have you made a will?	Yes 23.2%	No 76.8%	
40 Around 2000 people who could live if they had a kidney transplant operation die each year from kidney failure. The success of this operation is very high but unfortunately, far too few donors come forward offering their kidneys when they die. This has not been a dodge to get kidney donor cards completed but if I were to leave one what do you think is the likelihood that you would actually complete it?	Yes 62.6%	No answer 9.4%	
	No 23.6%	Already have kidney card 4.4%	

Hospital Topics

Surgical treatment of female infertility: value of paradoxical oophorectomy

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Summary

The outcome of surgical treatment for infertility in 111 women has been reviewed. The procedures used, depending on the lesions present, were: myomectomy; tubal implantation, anastomosis, and salpingostomy; division of adhesions; ovarian wedge resection; and "paradoxical" oophorectomy. The results are analysed by comparing pregnancy rates after surgery with those for the total time of exposure. Only for division of adhesions and oophorectomy were statistically significant results obtained. Many of the pregnancies, however, occurred soon after operations that had been preceded by long periods of infertility. With single tube patency, which had been proved at laparotomy, contralateral oophorectomy appeared to be of value. In the light of these observations we suggest that in cases of tubal ectopic gestation salpingo-oophorectomy should be considered in preference to salpingectomy when the opposite tube and ovary are healthy. Wedge resection for the Stein-Leventhal syndrome effectively restored ovulatory activity.

Introduction

Surgery aimed at improving subfertility in women is usually uterine or tubal. Uterine surgery may entail correction of position or removal of fibroids. Tubal surgery aims at restoring tubal patency or freeing adhesions that interfere with tubal function. Occasionally ovarian surgery is performed—for example, wedge resection for the Stein-Leventhal syndrome,^{1,2} and, rarely, contralateral oophorectomy for unilateral tubal patency.^{3,4} There is wide discrepancy in the practice of different gynaecologists in whether or not such surgery is performed. This is largely because for most of the procedures there is an absence of reports indicating consistently worthwhile results.⁵ The methods of analysis used in different series give little statistically acceptable evidence of efficacy. The statistical problems are, of course, considerable, as valid control data are difficult to acquire.

Partly owing to the Abortion Act 1967 and changing social attitudes there is a great shortage of babies for adoption by infertile couples, so that the demand for surgery that may correct an infertile state is high. This paper analyses the results of such surgery is one unit using a horizontal linear display system along with a statistical technique that compares the number of pregnancies achieved in the total time of exposure to the possibility of conception with the number achieved in the time after surgery.

Patients and methods

The review covers 111 patients operated on in the professorial unit at the Hospital for Women at Leeds during 1964-74. During that time the attitude to surgery for infertility was conservative and such operations were performed only when there were lesions potentially correctable by surgery and in the absence of any other factor reducing fertility detectable on investigations of either the patients or their husbands. No patient was persuaded to have surgery, rather the

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reverse, and a gloomy prospect of the order of 10% in terms of achieving a baby subsequently was quoted. Surgery was embarked on only when the patient requested it in the light of this information.

With the exception of two patients operated on to reverse tubal ligation all had long periods of preoperative infertility (mean $5.2 \pm \text{SD } 3.4$ years). Most patients had primary infertility but 23 presented with secondary infertility, only one of whom had a live child. Many patients had remained under regular surveillance after their operation, and those who had not were contacted by questionnaire. Complete information was available for 83 (75%) of the patients up to the end of 1974, the mean follow-up period being 4.25 ± 2.7 years. The operations performed are listed in table I.

TABLE I—Operations performed on the 111 women

Uterine surgery:	No of women
Myomectomy	16
Tubal surgery:	
Implantation, anastomosis, and salpingostomy	24
Division of adhesions	33
Ovarian surgery:	
Wedge resection	14
Oophorectomy	24

The only uterine procedure performed electively was myomectomy. Correction of retroversion was not done on its own, but shortening of the round ligaments was often carried out at the time of other procedures. Tubal surgery consisted in cornual reimplantation, salpingostomy, division of adhesions, and anastomosis depending on the lesion present. Ovarian wedge resection was usually preferred to medical stimulation in cases of the Stein-Leventhal syndrome. This diagnosis was based on the combination of amenorrhea or oligomenorrhoea, hirsutism, and bilateral ovarian enlargement with fibrotic capsular thickening and multiple follicular cysts.

In patients with unilateral tubal obstruction "paradoxical" oophorectomy was usually carried out based on the suggestion originally made in relation to ectopic pregnancy⁶ that in the presence of a patent tube on one side only the prospect of fertility would be enhanced by removal of the contralateral ovary, resulting in each ovum subsequently being released on the side with a patent tube. A diagnosis of unilateral tubal blockage was accepted only when retrograde dye injection at laparotomy was combined with digital occlusion of the patent tube and dye still failed to pass from the other tube.

The conception rate after surgery (r_1) for each procedure was estimated by $r_1 = n/t$, n being the number of conceptions and t the total time exposed to the possibility of pregnancy for all women in the group after surgery. A standard error was obtained ($r_1/\sqrt{n}$) with the assumption that the chance of conception was more or less constant throughout. With the postulation that surgery had no effect on the chance of conception, conception rates were recalculated for each procedure using the total time of exposure to the possibility of conception before and after surgery (r_2). If the operation had been irrelevant the two rates should be approximately equal, and this was assessed by $z = (r_1 - r_2)/\sqrt{(SE_1^2 + SE_2^2)}$, r_1 and r_2 being the rates compared, and SE_1 and SE_2 being their respective standard errors. If no difference exists between the rates z should be approximately normally distributed.

Ovarian wedge resection was also assessed for its influence on the pattern of menstruation and ovulation.

Results

The results of the different procedures are shown in figs 1-3. Table II gives the conception rates per 100 women-years for each group of procedures after surgery and in the total period of attempted fertility together with the z values for each.

TABLE II—Conception rates ($\pm \text{SE}$) per 100 woman-years

	After surgery	Total time	z	No of women
Myomectomy	16.7 ± 5.3	8.2 ± 2.6	1.5	16
Implantation, anastomosis, and salpingostomy	3.3 ± 1.9	1.5 ± 0.9	0.9	24
Division of adhesions	16.7 ± 3.8	5.6 ± 1.3	2.8	33
Wedge resection	21.4 ± 7.1	8.9 ± 3.0	1.6	14
Oophorectomy	34.9 ± 7.6	11.2 ± 2.4	3.0	24

UTERINE SURGERY

Myomectomy was performed on 16 patients, 13 with primary and three with secondary infertility (fig 1). Subsequently 10 pregnancies occurred in eight women, nine term uterine and one ectopic. In six cases the first pregnancy occurred within two years of the operation after a mean of four years of infertility preoperatively. Two patients stopped trying to conceive after seven and eight years.

FIG 1—Results of uterine surgery (myomectomy). Horizontal lines represent patients; dashed lines indicate incomplete follow-up. S = Secondary infertility. M = Pregnancy achieved.

TUBAL SURGERY

Bilateral tubal blockage

Twenty-two women, 16 with primary and six with secondary infertility, were operated on for bilateral tubal blockage presumed to be due to previous pelvic inflammatory disease; nine underwent tubal implantation and 13 salpingostomy. Only two of these patients became pregnant, achieving three term pregnancies (fig 2). Tubal reanastomosis was performed on two other women who had previously undergone surgical sterilisation by tubal ligation with loss of a portion of the tube. These are indicated on fig 2 with no preoperative infertility. No pregnancy is known to have occurred in either.

FIG 2—Results of tubal surgery. Key to symbols as in fig 1.

Division of adhesions and salpingolysis

In 33 patients, 24 with primary and nine with secondary infertility, the tubes were not blocked but there was anatomical distortion produced by peritubal adhesions; the operative procedure involved dividing these. Usually the adhesions were presumed to be secondary to inflammation but in 12 cases the cause was endometriosis. Subsequently 19 pregnancies occurred in 14 women, 10 within two years of the operation (fig 2). Sixteen of these pregnancies resulted in live births, two in early abortions (eight weeks), and one was a tubal

ectopic gestation. Two women became pregnant 12 and 18 months after surgery after 16 years of preoperative infertility. In one patient pelvic tuberculosis was found at operation, and after medical treatment she had an ectopic pregnancy followed by an abortion. Four patients with endometriosis each achieved a full-term pregnancy after surgery. Six patients stopped trying to conceive after a mean of 3.5 years.

OVARIAN SURGERY

Wedge resection

Wedge resection of the ovaries for the Stein-Leventhal syndrome was performed on 14 occasions; 13 patients had primary and one secondary infertility (fig 3). Subsequently nine pregnancies occurred in six women, several soon after the operation. One patient who was operated on at the age of 36 after 18 years of secondary infertility achieved four term pregnancies within six years, the last ending with caesarean section and tubal ligation. Three women were operated on after less than two years of infertility, but each of these had long-standing oligomenorrhoea or amenorrhoea. When the condition was diagnosed before fertility was desired surgery was postponed until the patient wanted a child.

FIG 3—Results of ovarian surgery. Dotted lines before surgery indicate when condition was diagnosed before family was desired. Key to other symbols as in fig 1.

TABLE III—Estimated number of menses a year in 14 women before and after wedge resection, and time after surgery pregnancy was achieved

No of menses		Time after operation pregnancy achieved
Before operation	After operation	
5	12	4 months
0	13	2 months
2	13	4 months
0.3	10	7 months
5	12	2 years
0	12	3 years
5	13	
3	10	
8	10	
0	13	
0	12*	
1	0	
4	8*†	
5	6†	

*Reverted to oligomenorrhoea.

†Probably anovulatory.

Table III shows the influence of wedge resection on the menstrual cycle. The mean number of menses yearly before the operation was $2.7 \pm \text{SD } 2.9$ and afterwards 10.3 ± 2.2 . These figures are corrected to allow for the absence of ovulation/menstruation during any pregnancy. Of the 14 women, 13 had an increase in the frequency of menses after surgery and one did not. If surgery had no effect, then, 50% of the changes should have been increases and 50% decreases. Thus the number of women improving should have followed a binomial

distribution with a probability of 1/2. On this hypothesis, observations as extreme as or more extreme than 13 increases and one decrease would occur with a probability of 0.028. The hypothesis may be rejected at the 5% level and the conclusion drawn that wedge resection increases the frequency of the menses.

Two of the six patients who achieved a pregnancy after wedge resection had had clomiphene treatment for three and six months, before surgery, ovulation having been induced on two and four occasions respectively. Both patients, however, again developed amenorrhoea on stopping treatment and opted for wedge resection, achieving pregnancies two and seven months later.

Two of the eight patients who did not achieve a pregnancy after the operation reverted to oligomenorrhoea three and four years after surgery. Three patients were subsequently treated with clomiphene. One with anovulatory cycles after surgery achieved two term pregnancies after eight and 15 courses of treatment respectively. The only patient whose menses were not influenced by wedge resection never achieved a pregnancy despite two years of intensive medical treatment (18 cycles). One patient whose menstrual pattern reverted to oligomenorrhoea had had six courses of clomiphene. Put another way, 14 operations were followed by nine pregnancies in six women, while after 56 cycles of clomiphene two pregnancies occurred in one of five women treated.

Oophorectomy

In 24 patients, 21 with primary and three with secondary infertility, there was only unilateral tubal patency, confirmed by retrograde injection at laparotomy. In each of these cases contralateral oophorectomy was performed. If the tube had not been removed previously it was removed with the ovary, but purely for surgical convenience. Subsequently 21 pregnancies occurred in 16 women (67%)—16 term, three abortions, and two ectopic. The mean period of infertility before the operation in those who subsequently achieved a pregnancy was $5.1 \pm \text{SD } 3.6$ years, and the mean time to the first pregnancy after operation was 1.2 ± 1.0 years. Five pregnancies occurred within three months of the operation and 14 within two years (fig 3).

Discussion

Our approach to tubal surgery for infertility was similar to that of Cox,⁵ operating only when persuaded by the patient to do so and offering a poor prospect of success. His figure of a 14% pregnancy rate and others of less than 10%⁷ and 15%⁸ are broadly in keeping with our own. In many reports only the number of pregnancies achieved is given rather than the number of patients achieving pregnancy, which is indicated here and is the more relevant and lower figure. The need for repeated patency tests to prove tubal blockage has been emphasised⁴ and, as indicated, for unilateral blockage proof can be obtained only at the time of laparotomy.

An exception to the generally poor prospects for surgery exists in relation to the reversion of deliberate sterilisation, of which there were only two cases in this series. In another series 18 out of 25 women operated on for reversal of sterilisation achieved successful pregnancies,⁹ while in a collected series 39% of end-to-end anastomoses were followed by pregnancy.¹⁰ The reason is that tubal blockage by disease is nearly always due to inflammation that damages the rest of the tubal lining, so that even if patency is restored there is still serious functional impairment.

The group of patients on whom tubal implantation, anastomosis, and salpingostomy was performed could be regarded as sterile, and, with the exception of the occasional patient in whom patency tests repeatedly gave false-negative results, pregnancy could not be expected to occur without surgery. In the other categories, however, the infertility state was a relative one. Only for oophorectomy and division of adhesions does a statistical test for significance at the 5% level reject the hypothesis implicit in our statistical approach that surgery did not influence the chance of pregnancy, manifest by approximate equality of the two rates (table II).

These results must be viewed in the light of the element of self-selection that occurs with any group of patients who present

with infertility and who have a cause possibly remediable by surgery. A perfect statistical model for the study of these infertility data does not exist; in most reports only the overall incidence of pregnancy is reported. Our approach may be open to certain criticism, but the test applied is a conservative one in that the comparison is not between two groups of patients managed differently and observed for the same length of time but consists in adding a prolonged spell of total infertility to the relatively short phase after the operation to give a figure for comparison. For example, the mean time of infertility before surgery in the two groups in which significance was shown was $6.8 \pm \text{SD } 3.5$ years for division of adhesions and 5.3 ± 3.3 years for oophorectomy, while the respective postoperative follow-up periods were only 4.0 ± 2.7 and 3.4 ± 2.2 years. It follows that a relatively large increase in fertility was required to give significance. At the very least the standardised values for z in table II give an index of comparative efficacy, though it must be remembered that the groups differed in the pathological conditions present.

Of greatest interest was the observation that what may be termed "paradoxical" oophorectomy in patients with unilateral tubal occlusion was associated with the most significant improvement in fertility rates. Since Jeffcoate⁶ propounded the principle that the fertility of a woman with only one functional tube would be improved by making her ovulate on each occasion from the ovary alongside the patent tube by the simple process of removing the opposite ovary there has been a general reluctance to apply it in practice. This has been in part due to a lack of statistical support for the basic logic, which our data provide. Another element has been what amounts to an emotional reluctance to remove healthy ovarian tissue. It may be argued that the sole remaining ovary may not function adequately but, in fact, the generous reserve of follicles is quite adequate for one ovary to accept and respond to the monthly gonadotrophic stimulus for a full reproductive lifespan. Another argument is that the sole remaining ovary may become diseased, needing removal. This is, of course, a risk but the disease would almost invariably be malignant, in which case pelvic clearance would be indicated whether one or two ovaries were present, whereas benign lesions may be treated by cystectomy, conserving functional ovarian tissue.

The exact factor by which unilateral oophorectomy will improve fertility will depend on the frequency with which ova that have undergone transperitoneal migration achieve fertilisation. The finding that one in five tubal ectopic gestations have the corpus luteum on the contralateral ovary¹¹ gives some indication of the order of influence that may be expected. Possibly when both ovaries are present some women ovulate in most cycles on the same ovary. The fact that several of our patients became pregnant so soon after oophorectomies that had been preceded by long periods of infertility suggests that this may have been happening in some of them.

Our data are, of course, relevant not only to the management of infertility but also to conditions that entail removing a single tube, such as tubal pregnancy. If the contralateral tube and ovary are apparently healthy salpingo-oophorectomy should be considered in preference to salpingectomy. Another possible benefit of contralateral oophorectomy with unilateral tubal patency is that it may reduce the risk of ectopic gestation, as an ovum that has undergone transperitoneal migration is possibly more apt to be implanted in the tube. These data give no information on this point but one study does suggest that this is the case.¹²

It is important to appreciate that the demonstration of unilateral tubal patency by one of the usual tests cannot be regarded as evidence that the opposite tube is blocked, even if it occurs repeatedly. This can be proved only if retrograde injection is done with the abdomen open. When medium passes through one tube this is occluded digitally and the injection pressure is raised further. Only if this fails to produce dye passage may blockage be presumed.

With regard to the Stein-Leventhal syndrome, it is impossible to be dogmatic on what is the best treatment.^{13 14} Our data, however, indicate that wedge resection is certainly effective in restoring ovulatory activity in a high proportion of patients but that, as with clomiphene-induced ovulation, the pregnancy rate is low. Our policy is to individualise, but despite the fact that our unit includes a regular service for medical stimulation of ovulation surgery is frequently chosen.

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What is the correct procedure in a case of an overdose where the victim leaves a note or notes nearby, but is still alive? Should such a note be included in the items, such as medication remnants, which one would ordinarily send by the ambulance to the relevant hospital, or are the police, if involved, empowered to keep such notes?

A patient who takes an overdose of drugs in an attempt to commit suicide does not commit a criminal offence. When a doctor treats such a patient he will normally take into his possession any material which will help him, and his hospital colleagues, to diagnose the patient's physical and mental state and meet his consequent clinical needs. While the patient is alive, the doctor owes the patient a legal duty of professional secrecy which extends not only to information about clinical findings but also to the existence and nature of drugs, notes of clinical significance, blood samples taken for clinical purposes, and so forth. Only with the consent of the patient or on the order of a court should the doctor part with any such clinical material. If the patient dies, his next of kin's wishes should be taken into consideration but

a note should normally be volunteered, and certainly handed over on request, to a police officer acting as coroner's officer. If the police officer is investigating whether a crime has been committed (as in a "suicide pact" case), legal advice should be sought by the doctor before he decides whether to hand over the note.

A patient suffers from recurring blepharitis which responds temporarily to a five-day course of chloramphenicol drops. How often can this treatment safely be repeated?

Provided that the patient does not become allergic to chloramphenicol, repeated courses of treatment are unlikely to have any ill effect. Frequent recurrences of blepharitis suggest an underlying cause such as seborrhoea of the scalp or concomitant infection in the nasal passages.