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(Accepted 28 January 1982)

SHORT REPORTS

Incidence of pregnancy after laparoscopy and hydrotubation

Many doctors experienced in managing infertility have observed that pregnancy may ensue soon after tests of tubal patency. Rubin¹ reported an 18% incidence of pregnancy after gas insufflation, while hysterosalpingography has been credited with incidences of 25-40%.² Laparoscopy and dye hydrotubation may also have a therapeutic effect in addition to being a diagnostic procedure. We conducted a retrospective study of conceptions that occurred before and after laparoscopy based on life-table analysis.

Patients, methods, and results

A total of 172 women (median age 27 years) presented to one infertility clinic over two years; 101 (59%) presented with primary infertility and 71 (41%) with secondary infertility. All had been trying to conceive for more than one year (median two years).

At the first visit a full history was obtained and clinical examination carried out on both partners; a postcoital test was then done at mid cycle. Men with obvious semen abnormalities, women with obvious menstrual or endocrine abnormalities, and spontaneous defectors were excluded from the study. The remainder were put on a waiting list for laparoscopy and followed up for spontaneous conception in the waiting period (median duration seven months). Patients with obvious tubal abnormalities on laparoscopy were excluded. The remainder were followed up for one to 24 months, which terminated in either pregnancy or further investigations. The time available for conception both before and after laparoscopy thus varied between patients.

If hydrotubation did not affect the probability of conception some of the subfertile women presenting to a clinic would conceive spontaneously and the remainder, who would undergo laparoscopy, would therefore form a group with relatively lower fertility. If a greater incidence of conception was found in the group who underwent laparoscopy this would suggest that hydrotubation promoted fertility.

Each month after presentation or laparoscopy the number of women who had conceived and the number who had withdrawn from follow-up were noted. The number who were available for conception each month and the number of expected pregnancies if the risks of pregnancy were equal in the two groups were calculated. The expected number of pregnancies was

Details of patients excluded from study, and those followed up before and after laparoscopy

	Before (n = 172)	After (n = 65; 63 + 2*)
Patients excluded:		
Laparoscopy elsewhere	2*	
Spontaneous defectors	35 (20%)	9 (13%)
Immediate surgery/hormone treatment	3	
Already pregnant at postcoital test	6	
Partner had problem	42	
Others	3	
Total No for follow-up	81	38
Spontaneous conceptions	17 (21%)	25 (66%)
Delayed surgery/hormone treatment	1	10
Other		3
Laparoscopy	63	

compared with the observed number using life-table analysis with the standard method of Mantel.³ We followed Haybittle and Freedman⁴ in omitting the continuity correction, as the number of months for which the women were at risk varied considerably.

Of the 172 women, 81 were available for follow-up in the group awaiting laparoscopy. Sixty-five underwent laparoscopy, of whom 38 were available for follow-up (table). The incidence of conception in the two groups was compared using a single-sided normal deviate test; this gave $Z=4.77$, $p<0.001$. Thus it was unlikely that the proportion conceiving after laparoscopy was less than or equal to that conceiving before laparoscopy. This was not, however, a reliable comparison as the number of months for which the women were at risk varied considerably. Life-table analysis, which takes into account the number of months at risk, showed that although the observed number of conceptions after laparoscopy was 25, the expected number was 13.27, and that variance was 8.34. The standard normal deviate was 4.07. The probability of a value as high as this (one sided) is <0.001 . The apparent increase in fertility after laparoscopy was therefore unlikely to be due to chance. By comparing the number of non-attenders in the two groups ($\chi^2=1.64$, $df=1$, $p>0.10$), it seemed unlikely that the apparent increase in fertility after laparoscopy could be explained on the basis of an excess of unreported pregnancies in the women awaiting laparoscopy.

Comment

In the absence of any obvious abnormality spontaneous conception in an infertile woman is difficult to explain. Leeton and Selwood⁵ found that in patients undergoing laparoscopy those with multiple tubal tortuosities had a higher incidence of conception and attributed this to minimal tubal obstruction, which could be alleviated by tubal insufflation. We think the reason for a higher incidence of conception after laparoscopy is due to removal of minor obstruction such as fine intralimbal adhesions or inspissated mucous plugs.

We thank Dr Richard Kerr-Wilson, Mrs Monica Green, and Mrs Joan Searle for their help in collecting the relevant data for this study.

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(Accepted 28 December 1981)

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