ANALYSIS OF TUBAL FACTOR IN 386 CASES OF INFERTILITY

P. K. SHAH, O. D. BATWAR, V. R. BADHWAR and P. R. VAIDYA

SUMMARY

A retrospective study was carried out for a period of 6 years from 1983 at our institution, to analyse tubal factors in infertility cases assessed by diagnostic laparoscopy. A total of 860 cases of infertility were subjected to diagnostic laparoscopy, out of which 336 i.e. 39.07% were found to be having tubal pathology. Out of these 336 cases, 246 (73.21%) cases had primary infertility whereas 90 (26.69%) had secondary infertility. 55.7% of primary infertility cases and 60% cases of secondary infertility with tubal factor were in age group of 21-25 years. Bilateral tubal block was observed in 36.99% of primary infertility and 32.22% of secondary infertility cases. Unilateral tubal patency was observed in 51.63% of primary infertility cases and 56.66% of secondary infertility cases.

Hydrosalpinx was found in 28.46% and 22.22% cases unilaterally in primary and secondary infertility respectively. 8.88% cases of secondary infertility were found to be having absent tube on one side following previous laparotomy. Tubo-ovarian mass was seen 4.47% and 15.55% of cases in primary and secondary infertility cases respectively. Peritubal adhesions were found in 37.8% and 15.55% cases of primary and secondary infertility respectively. The rest of the pathology is discussed in details.

INTRODUCTION

Since Kalk in 1929 developed laparoscopy as an effective diagnostic procedure, it has been widely used all over the world to visualize pelvic organs particularly in cases of infertility. In this retrospective study an attempt is made to analyse cases of infertility where tubal factor was found to be the cause of it. The pelvic infection involving the Fallopian tubes was found to be the most significant pathology in these cases.

Dept. of Obstet. and Gynec. L.T.M.M. College, Sion, Bombay.

Accepted for publication : 10-11-90.

MATERIAL AND METHOD

A total of 860 cases of infertility were subjected to diagnostic laparoscopy during a

TABLE I

Age distribution

Age (Years)	Prim. infertility No. of cases	%	Sec. infertility No. of cases	%
<20	19	7.72	1	1.11
21-25	737	55.69	54	60.00
26-30	73	29.67	21	23.33
>31	17	6.91	14	15.55

period of six years between 1983 to 1986 at L.T.M. Medical College and L.T.M.G. Hospital, Sion, Bombay. Out of 860 cases, 336 i.e. 39.07% were found to be having tubal factor as the pathology for infertility during diagnostic laparoscopy. The routine and special investigations were carried out in all the cases for both the partners, before subjecting the patient to diagnostic laparoscopy and chromopertubation.

OBSERVATIONS

Out of total 336 cases having tubal factor as the underlying pathology for infertility, 246 (73.21%) cases had primary infertility whereas 90 (26.79%) cases had secondary infertility. The age of the patients ranged from 17 years to 34 years with the majority of patients between 21-25 years age group. Table I shows age distribution.

Table II shows period of infertility in different cases of infertility with tubal factor.

Maximum number of patients i.e. 78.86% and 70% in primary and secondary infertility respectively came within five years of infertile period.

Table III shows results of chromopertubation in various cases on laparoscopy.

51.63% of cases with primary and 56.66% cases with secondary infertility had

TABLE II

Period of infertility

Period of infertility in years	Primary infertility No. of cases	%	Secondary infertility No. of cases	%
<5	194	78.86	63	70
6-10	43	17.48	24	26.66
>11	9	3.66	3	3.33
	246		90	

TABLE III

Tubal patency

	Patency infertility		Secondary infertility	
	No. of cases	%	No. of cases	%
Unilateral block	127	51.63	51	56.66
Bilateral block	91	36.99	29	32.22
Patent tubes with peritubal adhesions	20	8.13	7	7.77
Not done/could not be performed	8	3.25	3	3.33
	246		90	

unilaterally patent tubes. Bilateral tubal block was seen in 36.99% and 32.22% cases of primary and secondary infertility cases respectively. Bilaterally patent tubes with tubal adhesions either on one or both the sides were seen in 8.13% and 7.77% cases of primary and secondary infertility cases respectively. Tubal patency test could not be performed in cases of Mullerian agenesis, acute inflammation and some cases of genital Koch's diagnosed at the time of laparoscopy.

Table IV shows various tubal pathologies.

TABLE IV

Various Tubal pathologies

	Prim. infertility		Second infertility	
	No. of cases	%	No. of cases	%
Uni. Cornual Block	12	4.88	23	25.55
Bilat. Cornual Block	52	21.14	12	13.33
Uni. Fimbrial Block	103	41.87	24	26.66
Peritubal adhesions with block	73	29.67	7	7.77
Bil. Fimbrial Block	20	8.13	12	13.33
Peritubal adhesions with spill +	20	8.13	7	7.77
Dense pelvic adhesions with block	9	3.65	3	3.33
Unilat. Hydrosalpinx	70	28.46	18	19.99

	Prim. infertility		Second infertility	
	No. of cases	%	No. of cases	%
Bilat. Hydrosalpinx	13	5.28	9	9.99
Tuberculosis	10	4.07	5	5.55
Patency test not done	8	3.25	3	3.33
Tuboovarian mass	11	4.47	4	4.44
Thickened tubes	13	5.28	4	4.44
Endometriosis	3	1.22	–	–
Mullerian agenesis	3	1.22	–	–
Salpingectomy/S.O.	–	–	8	8.88

DISCUSSION

Before twenty years the only means of assessing tubal factor was blind Rubin's patency test and hysterosalpingography. With the advent of diagnostic laparoscopy, we can assess the tubal factor in infertility to a great extent. The exact site of tubal block can be determined in addition to tubal adhesions and tubal kinking which can not be diagnosed on bimanual examination. 36.83% of the primary infertility patients and 46.88% of the secondary infertility patients were found to be having tubal pathology. Table V shows the incidence of tubal factor in cases of primary and secondary infertility by various workers.

Majority of patients i.e. 78.86% of primary infertility and 70% of secondary infertility came within 5 years of infertile period. Unilateral block was found in 51.63% and 56.66% cases of primary and secondary infertility respectively. Mackey et al (1971) and Wahby et al (1966) have shown 50% and 23% conception rate in cases of unilateral patency. In 20 (8.13%) cases of primary and 7 (7.77%) cases

TABLE V

Percentage of tubal factor in infertility various studies

Author		Primary Infertility	Secondary Infertility
Ambiye et al	(1981)	53.34	61.1
Bhatnagar et al	(1984)	17.17	25.00
Mehra et al	(1984)	–48–	
Rajan	(1984)	–25–	
Sholapurkar et al	(1985)	19.8	33.3
Sud et al	(1987)	46.66	60.55
Present series		36.83	46.88

of secondary infertility, although the tubes were involved in adhesions, the dye was seen in the pouch of Douglas. In such cases, infertility may have been due to kinking of the tube and/or interference in ovum transport.

119 (48.37%) and 39 (43.33%) cases showed obvious pathology like hydrosalpinx, tuberculosis, T.O. Masses in primary infertility and secondary infertility groups respectively. Most of these cases were missed on clinical examination. Endometriosis was found in 3 (1.22%) cases of primary infertility. Rajan (1984) detected endometriosis in 14.81% cases. Evidence of tuberculosis was found in 10 (4.07%) cases of primary and 5 (5.55%) cases of secondary infertility. Rajan (1984) found tuberculosis in only 1.23% cases. Sathe et al (1979) reported incidence of tuberculosis as 3.32% while Anjaneyulu (1959) quoted the figure of 0.76%. Schafer (1976) reported tuberculosis in infertile patients between 5-10%.

Pelvic adhesions ranging from flimsy ones to dense were found in 102 (41.46%) cases of primary and 17 (18.18%) cases of secondary infertility. Pelvic infection seeems to be common in younger age group, leading to infertility. In U.S.A. 5% of women attending Gynaecological clinics were found to be having gonorrhoea. Thus pelvic inflammatory disease appears to be the largest single factor responsible for infertility.

Thus for assessment of tubal factor in infertility, the diagnostic laparoscopy with chromopertubation is very helpful. It also in addition to being helpful in detecting patency of the tube, breaks small endosalpingeal adhesions. The false negative results due to cornual spasm during hysterosalpingography can be avoided during laparoscopy under general anaesthesia. Thus Siegler's statement that endoscopic observation is usually three times more accurate than clinical findings, still holds true. With the availability of salpingoscopy and Chlamydial culture from pouch of Douglas there is a bright future to pin point pathology in cases of infertility due to tubal factor.

ACKNOWLEDGEMENT

We are thankful to the Dean Dr. S. V. Nadkarni, for allowing us the use of hospital records.

REFERENCES

1. *Ambiye, V. R., Sarogi, R. M. and Rawal, M. Y. : J. Obstet. and Gynec. India, 31: 623, 1981.*
2. *Anjaneyulu R. : J. Obstet. Gynec. India, 10: 43, 1959.*
3. *Bhatnagar, B., Ramesh, S. and Shekhawat, U. : J. Obstet. Gynec. India, 34: 1087, 1984.*
4. *Mackey, R. A., Glass, R. H., Olson, L. and Vidya, R. A. :, Fertil. Steril., 22: 504, 1971.*
5. *Mehra, S., Mehra, M. K. and Tyagi, R. : J. Obstet. Gynec. India. 31: 230, 1981.*
6. *Rajan, R. : J. Obstet. Gynec. India, 34: 881, 1984.*
7. *Sathe, A. V., Vaidya, P. R., Deshmukh, M. A. and Motashaw, N. D. : J. Obstet. Gynec. India, 29: 198, 1979.*
8. *Schaefer, G. : Clin. Obstet. Gynec. 19: 223, 1976.*
9. *Sholapurkar, M. L,, Sardesai, S. P. and Nalgirkar, A. J. : J. Obstet. Gynec. India, 35: 571, 1985.*
10. *Sud, K., Malan, R., Saxena, P. and Thakur, K. : J. Obstet. Gynec. India, 37: 156, 1987.*
11. *Wahby, O., Sobero, A. J. and Epstein, J. A. : Fertil. Steril. 17: 520, 1966.*