

## TUBAL PREGNANCY

(An Epidemiological Study of 357 Cases)\*

by

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It is generally believed that the frequency of ectopic pregnancy has increased in the past two decades (Eastman and Hellman, 1966). The frequency increases with advancing age (Douglas, 1963), but decreases with increasing parity (Eastman and Hellman, 1966). Seasonal variations have been shown by Crawford (1954). Pre-existent pelvic infection is considered to play the most important role in the pathogenesis of ectopic. There is an increased frequency of this condition following the initial ectopic pregnancy. There is a statistically significant increase in the incidence of ectopic in pregnancies following chemotherapy for pelvic tuberculosis, tubal sterilization or I.U.C.D. insertion. Pregnancy following a period of prolonged infertility seems to be particularly susceptible for ectopic implantation.

### Material and Methods

During the period from 1-1-1965 to 30-6-1970, there were 36,492 deliveries in Government Erskine Hospital, Madurai. There were 374 ectopic pregnancies, an incidence of 0.98% of all deliveries. Tubal pregnancy occurred in 357 cases, giving

an incidence of 95% of all ectopic pregnancies. In this study, various epidemiological factors in 357 cases of tubal pregnancy have been reviewed. History of abortion, history suspicious of pelvic infection, history of any previous pelvic or abdominal operations, previous ectopic pregnancy, history of I.U.C.D. insertion and the period of infertility preceding present conception are the important points that were particularly elicited in the history.

### Observations

The frequency of ectopic pregnancy varies considerably among clinics throughout the world, ranging between 0.3 and 2.2% of all pregnancies (Te Linde, 1970). The incidence was 1 in 28 deliveries in Jamaica (Douglas, 1963) and 1 in 60 deliveries in Indianapolis (Donovan, 1956). In India, the incidence varies from 1 in 89 (Mokadam, 1968) to 1 in 249 deliveries (Sunanda Bai, 1968). In Tamil Nadu, the incidence varies considerably even among neighbouring institutions. It was 1 in 44 deliveries in Tanjore (Ananthalakshmi) and 1 in 240 deliveries in Tirunelveli (Palanichamy *et al*, 1974), compared to 1 in 102 deliveries in Madurai. In the present series, the incidence of ectopic pregnancy fluctuates between 0.8% and 1.2%. Maximum number of ectopics were seen in the months of January, June and September, whereas the maximum number of deliveries

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occurred in the months of April, May and June. (Figure 1). The age varied from

The relevant past history has been shown in Table III. Thirty-seven per cent

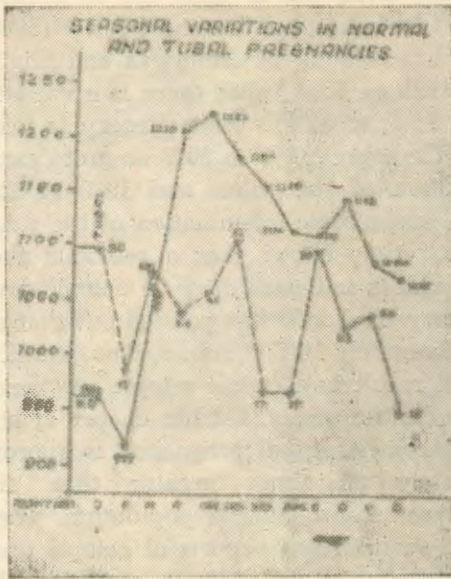


Fig. 1

16 years to 46 years. Seventy-eight per cent of the patients were in the age group between 20 and 34 years (Table I). The

of patients had been infertile for more than 5 years and 9.5% of them were infertile for over 10 years. One patient had conceived 20 years after her last childbirth. History suspicious of pelvic infection was elicited in only 15% of cases. However, in 47.2% there was evidence of inflammation of the pelvis at laparotomy, and in 16.9% the tubes showed

TABLE III  
Previous History

	No. of cases	Per cent
Abortion	52	14.0
Pelvic infection	54	15.0
Previous ectopic	16	4.5
Previous laparotomy*	4	1.12
I.U.C.D. in situ	4	1.12
Infertility:		
5 to 10 years	98	27.5
Over 10 years	34	9.5

\* Excluding previous ectopic pregnancy.

TABLE I  
Age

	Age (Years)					
	15-19	20-24	25-29	30-34	35-39	40 & over
Incidence (%)	15	31	31	16	6	1

gravidity of these patients appears in Table II. In 26% of cases, eccyesis occurred in the first pregnancy. There was a gradual decline in the frequency of eccyesis in successive pregnancies.

microscopic evidence of infection. History of abortion was elicited in 14% only, compared to 23% overall incidence of spontaneous abortions in this institution. Recurrent tubal pregnancy was encoun-

TABLE II  
Gravidity

	Gravidity						
	I	II	III	IV	V	VI	VIII & over
Incidence (%)	26.0	18.5	15.2	13.4	9.4	7.1	10.4

tered in 4.5% and this is  $4\frac{1}{2}$  times higher than the overall incidence of ectopic in this hospital. Four patients (1.12%) had tubal pregnancy with Lippes loop in situ. There was no ectopic pregnancy following tubal sterilization during the period of study.

#### *Comments*

It is felt that the frequency of ecyesis has increased due to expanding use of antibiotics in the treatment of salpingitis. Our observations have not shown any progressive increase in the frequency of this complication. Over 90% of cases have been seen in the age group between 20 and 40 years. Crawford (1954) Wagh and Patel (1968) and Patel (1968) found the maximum incidence between 26 and 30 years. Our observations favourably agree with these reports. In this series, one fourth of the patients were nulliparas, compared to 6.6% in Webster's series and 45.3% in Patel's series. The incidence of ectopic showed a gradual decline in the subsequent pregnancies, and this favourably agrees with Eastman and Hellman (1966). Grant (1962) observed that 2.4 per cent pregnancies in women attending the sterility clinic were ectopic. In Paranjothi's series (1962), 16.25% gave history of prologped infertility. Schiffer (1963) in an analysis of 268 cases showed direct relationship between ectopic and infertility. Our observations also show that pregnancies following a prolonged period of infertility are susceptible for this complication. Crawford (1954) found maximum number of ectopics in the month of May. In our series, the maximum number of cases were seen in the months of January, June and September. It is probable that ectopic pregnancies are prevalent in certain seasons of the year, though it is difficult to explain the

reasons.

There is a divergence of opinion as to what proportion of cases can be attributed to salpingitis. Bone and Greene (1962), in a review of the American and English literature, found that there is a variation of 0.5% to 82.4% when history is taken as the source; 8% to 50% on gross examination of the tubes and 19% to 95% on microscopic examination of the tubes. Our study shows that a previous abortion does not predispose to ectopic pregnancy. Te Linde has pointed out that approximately 10% of subsequent gestations will result in a repeat ectopic pregnancy. He further states that her chance of having another tubal pregnancy is approximately 20 times greater than that of women in general population. There are several case reports of ectopic pregnancies with I.U.C.D. in situ and this problem has been discussed in detail by Tietze (1970). There are also reports of ectopic pregnancy following tubal sterilization (Shaw, 1962 and Mokadam, 1969). In this study, there was no ectopic pregnancy following tubal sterilization.

#### *Summary*

The various epidemiological factors in 357 cases of tubal pregnancies have been reviewed. There was a significant decline in the incidence of ectopic in successive pregnancies. One fourth of the patients were nulliparas. One third of the patients conceived after a prolonged period of infertility. In 16.9% microscopic evidence of salpingitis was present. Tubal pregnancy was recurrent in 4.5%. In four cases, tubal pregnancy occurred with I.U.C.D. in situ.

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#### References

1. Ananthalakshmi, S.: Unpublished data.
2. Bone, N. L. and Greene, R. R.: Amer. J. Obst. & Gynec., 82: 1166, 1961.
3. Crawford, J. D.: Amer. J. Obst. & Gynec., 67: 568, 1954.
4. Donovan, W. H.: Obst. & Gynec., 7: 694, 1956.
5. Douglas, C. P.: Brit. Med. J., 2: 838, 1963.
6. Eastman, N. J. and Hellman, L. M.: William's Obstetrics, ed. 13, N.Y., 1966, American Publishing Co. Pvt. Ltd., pp. 541.
7. Grant, A.: Cli. Obst. & Gynec., 5: 861, 1962.
8. Mokaqam, N.: J. Obst. & Gynec. India, 18: 353, 1968.
9. Palanichamy, G., Rajam Authilingom and Ananthalakshmi, S.: In press.
10. Paranjothi, D.: J. Obst. & Gynec. India, 12: 459, 1962.
11. Patel, L.: J. Obst. & Gynec. India, 18: 388, 1968.
12. Schiffer, M. A.: Amer. J. Obst. & Gynec., 86: 264, 1963.
13. Shaw, W. G.: Amer. J. Obst. & Gynec., 84: 72, 1962.
14. Siegler, A., Zeichner, S., Rubenstein, I., Wallace, E. Z. and Carter, A. C.: Amer. J. Obst. & Gynec.
15. Sunanda Bai, K.: J. Obst. & Gynec. India, 18: 382, 1968.
16. Te Linde, R. W.: Operative Gynaecology, ed. 4, Philadelphia, 1970, Lippincott Company, pp. 323.
17. Tietze: Ninth Progressive Report of the Co-operative Statistical Programme, Population Council Publication Studies in Family Planning, July 1970.
18. Wagh, K. V. and Patel, S.: J. Obst. & Gynec. India, 18: 370, 1968.
19. Webster, H. D., Jr., Barclay, D. L. and Fischer, C. K.: Amer. J. Obst. & Gynec., 92: 23, 1965.