

BACTERIOLOGY OF FALLOPIAN TUBES IN RELATION TO PUERPERAL AND NON-PUERPERAL STERILIZATION

by

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Introduction

Female sterilization by tubal ligation has become increasingly popular in recent years. Pinkerton *et al*, (1962) reported bacterial invasion of endocervix during first 24 hours after delivery in 33% and by the end of first week in 73% of puerperal women and that the organisms reach uterine cavity during first 24 hours in 17% and by the end of first week in 36% of these women. De Lee and Greenhill (1941) were of the opinion that one can expect the presence of organisms in the fallopian tubes as they are present in the uterus after delivery. Franz (1900), Douglas and Rhee (1934), Holmstrom and Murata (1948) and Calman and Gibson (1954) reported that majority of afebrile women harbour "potentially pathogenic bacteria" inside the uterine cavity during puerperium. Considering the presence of microorganisms in the uterine cavity as 36% at the end of first week in comparison to only 17% at the end of 24 hours, one can presume that chances of presence of organisms in the fallopian tubes would increase if sterilization is done 24-48 hours after delivery. But Pinkerton

et al, (1970) reported that neither the day of delivery nor the method of delivery has any relation to tubal infection.

Non-puerperal fallopian tubes can also harbour bacteria as shown by studies of Pasricha and Ghosh (1966). In their study of 32 non-puerperal fallopian tubes, organisms could be isolated in 11 cases (34.5%).

The present study was undertaken in an attempt to discover the bacteriological and histopathological condition of the fallopian tubes during puerperium and non-puerperal state and relationship, if any, of this with subsequent sepsis after tubectomy.

Material and Method

During the ten months, May 1972 to March 1973, 2256 women were delivered in J. L. N. Zenana Hospital, Ajmer. Two hundred of these women aged 22-40 years underwent puerperal tubal ligation. The Pomeroy operation was performed. At the medial end of fallopian tube near the ligated loop the cut end of the tube was reinforced by a linen stitch in order to have more safety. Part of each excised tube was sent for bacteriological and part for histological study. Fifty non-puerperal patients underwent tubectomy by the vaginal route. In these cases vaginal swab

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from the posterior fornix was also sent for bacteriological study.

Observations

Out of 200 cases of puerperal sterilization studied, 62 had micro-organisms isolated from one or both tubes (Gr. A), the commonest organism being staphylococci (coagulase-ve) in 40 cases, staphylococci (coagulase + ve)—in 15 cases and colliform in 7 cases. In the remaining 138 cases (Gr. B) the tubes were sterile on culture. There was no histological evidence of salpingitis in any case.

Out of 50 cases of vaginal tubectomy studied, micro-organisms were isolated in 11, out of which 9 cases (18%) Gr. A showed culture of *B. Coli* and staphylococcus (coagulase-ve) in both vaginal swab and fallopian tubes. In two cases (4%) (Gr. A) vaginal swab showed culture of *B. Coli* and staphylococcus (coagulase—ve), while the fallopian tubes were sterile. In 39 cases (78%) culture was sterile in both vaginal swab and fallopian tubes. The indication for vaginal tubectomy (54%) was mostly medical termination of pregnancy. In 19 cases (38%) tubectomy was done along with dilatation and curettage for incomplete abortion. In 4 cases (8%) it was done along with cervical cauterisation or curettings for F.U.B.

TABLE I
Mode of Delivery

Mode of delivery	Number of patients	
	Gr. A. Culture positive	Gr. B. Culture negative
Normal	56 (90.3%)	116 (84.1%)
Forceps.	4 (6.4%)	14 (10.1%)
Caesarean section.	2 (3.3%)	8 (5.8%)

TABLE II
Delivery Sterilization Interval

No. of days between delivery and sterilization	No. of patients	
	Gr. A.	Gr. B.
0 (Caesarean section)	2 (3.2%)	8 (6%)
1	5 (8%)	8 (6%)
2	7 (11.3%)	12 (9%)
3	30 (48.4%)	69 (49%)
4	10 (16.1%)	16 (12%)
More than 4	8 (13.0%)	25 (18%)

Tables I and II do not show any significant difference between mode of delivery and tubal infection and there is no correlation between the delivery and sterilization interval.

TABLE III
Vaginal Sterilization

Along with vaginal tubectomy	No. of cases	
	Gr. A	Gr. B
1. Medical termination of pregnancy	-	27 (69%)
2. Incomplete abortion	10 (91%)	9 (23%)
3. Erosion cervix or F.U.B.	1 (9%)	3 (8%)

It is evident that there was evidence of tubal bacterial invasion in about 50% cases of incomplete abortion.

Postoperative Morbidity

There was no maternal death. The record of 100.4 F. temperature on one occasion at any time following the operation was taken as an indication of pelvic infection in the absence of any other obvious cause. Two puerperal patients (3%) of Gr. A and 5 puerperal patients (4%) of Gr. B. developed mild postoperative sepsis. This difference is not statistically significant.

Out of vaginal tubectomies, two patients of Gr. A and none from Gr. B develop-

ed pelvic sepsis. These two cases were of incomplete abortion, who later on gave history of some intrauterine manipulation for induction of abortion. The pelvic sepsis was cured by antibiotic and anti-inflammatory therapy in all cases.

Discussion

Prystowsky and Eastman (1955) reported a series of 1830 puerperal sterilizations. The Pomeroy operation was used in 80% of their patients, 76% of their operation was done within 48 hours of delivery and 43% of their patients had a postoperative temperature of 100.4°F. or more. This is much higher than the incidence of 3.5% in our study. Pelvic sepsis was reported by Lu and Chun (1967) of 2%, by Mclein *et al* (1967) of 2%, by Black and Sclare (1968) of 10% and by Pinkerton *et al* (1970) of 6%. Mclein *et al* (1967) found histological evidence of salpingitis in 15.7% of 902 tubal sterilizations, 89% of which were done in the puerperium, although their incidence of postoperative pyrexia was only 2%. August (1955) found histological evidence of salpingitis in 7% of 606 patients. None of the patients in the present study showed histological evidence of salpingitis, although pyrexia was noted in 3% in Gr. A, 4% in Group B.

Pasricha and Ghosh (1966) reported presence of organisms in the fallopian tubes of 34.5% non-puerperal cases, while only 22% of non-puerperal cases in our study showed evidence of presence.

Summary

1. 31% of puerperal women harbour-

ed micro-organisms in their fallopian tubes.

2. Organisms found were staphylococci coagulase —ve, staphylococci coagulase + ve and colliform group of organism.

3. In most patients the organisms were present in both tubes, but occasionally in one tube only.

4. The presence of micro-organisms in fallopian tubes in early puerperium does not seem to be related to mode of delivery nor does it significantly increase the incidence of post-sterilization pyrexia.

5. About 50% of non-puerperal women who had incomplete abortion harboured micro-organisms in their fallopian tubes.

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