

# BACTERIOLOGICAL AND HISTOPATHOLOGICAL STUDY OF FALLOPIAN TUBE

(A study of 100 Cases)

by

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The most simple method of permanent conception control is tubal ligation. It is usually considered that the chances of infection after tubal ligation will increase if performed beyond 24 hours as bacterial invasion of the fallopian tubes occurs progressively after puerperium (Calman and Gibson, 1954). Earlier workers have suggested that optimum time to perform post partum sterilization is from 1 to 2 hours after delivery which means immediately after the period of post partum haemorrhage. This is not always practicable and there is still controversy as regards the histological and bacteriological status of the puerperal fallopian tubes.

Bacteriological status of fallopian tubes has shown the wide range of microorganisms in about half of the studied cases (Pasricha and Ghos, 1966; Mustafa and Pinketon, 1970). The findings of other workers have not been in agreement to these findings as the incidence was only 3.8% in cases of puerperal tubes studied by Rubin and Czernobilsky, 1970). Spore *et al* (1970) reported posi-

tive bacterial culture in only 2% of post sterilization puerperal tubes. Hellman (1949) observed an incidence of 50% of microorganisms in tubes when tubal ligation was done on 8th post partum day in contrast to only .6% when the sterilization was undertaken within 24 hours after delivery.

With this realization the present study was undertaken to evaluate the type and incidence of microorganisms in fallopian tubes at varying periods after delivery and their correlation with histological grade of inflammation in tubes.

## Material and Methods

The study was conducted on 100 patients attending the Obstetrics and Gynaecology Out-door and Urban family welfare centre of Umaid Hospital, attached to Dr. Sampurnanand Medical College, Jodhpur during the period from June 1978 to October 1978. The various modes of sterilization of this study were as follows:

1. Puerperal sterilization	76
2. Vaginal sterilization	4
3. MTP with abdominal sterilization	16
4. Caesarean with sterilization	2
5. D & C with sterilization	2
Total No. of cases	100

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### Bacteriological Study

A portion of fallopian tube was subjected to bacterial culture and another for histopathological examination. Swabs obtained from the luminal contents of tubes were inoculated on the culture media viz., blood agar, McConkey's agar, Thioglycollate broth, glucose broth and dettol broth. Bacterial isolates were systematically followed by sub culture and relevant bio-chemical tests as described by Cruickshank (1975). Direct smears from luminal contents were stained by Gram's and Ziehl Neelson's stain.

### Histological Study

Each segment of fallopian tube was processed and stained with haematoxyline and eosin, silver methamine, Mcmanus periodic acid schiff stain, Zeil-Neelson's and Giemsa's stain wherever necessary. The criteria for typing of salpingitis was made as per Rubin and Czernobilsky (1970).

### Observation

Maximum number of sterilization cases fell in the age group 26-30 years (58 cases) followed by age group 20-25 years (30 cases) and 31-35 years in (18 cases). The maximum sterilization cases were amongst the third para (38 cases). The age and parity status of the 100 cases is shown in Table I.

In present study, the various organisms were isolated in 17 cases. The type of bacteria isolated is shown in Table II, the maximum isolates were staph. aureus, coagulase positive (5), staph. albus, coagulase negative (3). The Pseudomonas aeruginosa and Esch. coli were isolated in same frequency (2).

TABLE II  
Showing Bacterial Flora of Fallopian Tube  
Obtained After Sterilization

S.N.	Type of organism isolated	No. of cases
1.	Staphylococcus aureus (Coagulase positive)	5
2.	Staphylococcus albus (Coagulase negative)	3
3.	Esch. coli	2
4.	Pseudomonas aeruginosa	2
5.	Klebsiella ozanae	2
6.	Alkaligenes faecalis	1
7.	Bacillus subtilis	1
8.	Streptococcus faecalis	1
Total:		17

The histological evidence of salpingitis was observed in 20 cases, out of 100 cases of sterilization studied. Out of these 20 cases the acute salpingitis was seen in 10 cases, subacute in 3 cases and chronic salpingitis in 7 cases.

On evaluating the relationship between varying type of salpingitis and the microbial flora in fallopian tubes, the positive

TABLE I  
Showing Age and Parity Status of 100 Cases

AGE		PARITY	
Age in Years	No. of Patients	No. of Para	No. of Patients
20-25	30	2nd Para	12
26-30	48	3rd Para	38
31-35	18	4th Para	18
36 and above	4	5th Para	20
		6th Para	12

TABLE III  
Showing Histological Salpingitis and their Relation to Bacteria Isolated

S.N.	Type of Salpingitis	No. of cases	No. of cases showing positive bacterial culture
1.	Acute salpingitis	10	10
2.	Sub acute salpingitis	3	—
3.	Chronic salpingitis	7	5

bacterial culture was obtained in maximum cases of acute salpingitis (10 cases) in 2 cases there was no association of salpingitis with bacterial flora. The results are shown in Table III.

#### Discussion

Several authors have reported an extremely wide range of incidences of post sterilization salpingitis in their studies, 25% (Black Shaffer, 1944 and Pristosky and Eastman, 1955), 15.7% (McElein *et al* 1967), 11.2% (Nile and Clerk, 1969), 15.4% (Spore *et al* 1970), 15.2% (Rubin and Czernobilsky, 1970), 15.1% (Nanda and Panda, 1978) and 14% (Agarwal *et al* 1978). However, Hellman (1949) reported very high incidence of 50% of acute salpingitis on 8th puerperal day. In present series, histological evidence of salpingitis was seen in 20% of cases out of which 11% was in puerperal cases within 6 days of post delivery period. This incidence is in accordance to the observations of previous reports as already mentioned. The criteria used for defining the histological grades of salpingitis and their inter-relation was made according to Rubin and Czernobilsky (1970).

In present series, the puerperal sterilization was done in 76 cases (First 6 days after delivery), out of which 11 cases showed puerperal salpingitis and these cases were associated with positive

bacterial culture. In rest 24 cases of sterilization salpingitis was observed in 9 cases, out of which 6 cases were accompanied with positive bacterial culture.

In no fallopian tube mycobacterium tuberculosis, fungus and any other specific pathology could be demonstrated.

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