

REVIEW OF 350 CASES OF TUBAL LIGATION

by

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Family planning in its true sense refers to the desired number of children at desired intervals. Tube ligation can prevent further childbearing in multiparous women. Due to the fact that these operations can fail to carry out the purpose, many gynaecologists have come to replace the term 'Sterilization' by 'Tubal ligation! This idea appears to have real merit from the medico-legal standpoint. Some of the women of younger age group also undergo this operation after completing their families without proper spacing. This study was taken up to find out the advantages and disadvantages of this common operation.

The present report includes 1,015 cases of tubal ligation done at the B. Y. L. Nair Hospital, Bombay, from 1st January 1963 to 31st December 1966. Nine hundred and ninety-one cases were operated in the obstetrical section and twenty-four cases were operated in the gynaecological section of the department. Out of the latter twenty-four cases, twenty were operated by the vaginal route, two were done by the abdominal route

and in the remaining two cases tubal ligation was done at laparotomy for ectopic gestation. The operations done during the year 1967, 1968 and earlier part of 1969 have not been included in this series as some period of observation is necessary to see if a particular complication occurred in a given case. The total number of deliveries during this period was 10,385, giving an incidence of tubal ligations of 9.9%.

Selection of cases

Parity and the number of living children were the only criteria for selection of these cases. We did not encourage women with two or less than two children to undergo the operation. In this series the women undergoing tubal ligation had on an average about 5 children (5.16) and male children outnumbered the female children. This figure is not encouraging considering the present policy of our Government of discouraging the women from having more than three children. The age of the mother at the time of tubal ligation was not considered at all. The youngest patient was 19 years of age, and the oldest was 40 years, the average age being 28.6 years. Most of the patients were poor and illiterate and did not know their correct ages.

In cases of repeat caesarean sec-

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Received for publication on 18-1-1969.

tions, tube ligation was undertaken at the time of the third section. There was one case of ruptured uterus where the patient was 24 years old and had two living children; here the tubal ligation was done along with suturing of the lower uterine segment tear.

Indications

Indications have been divided into three major groups

- (i) Socio-economic
- ii) Obstetrical
- iii) Medical

Occasionally, all these factors taken together formed the indication.

(i) *Socio-economic*: This was the indication in the majority of the cases (93.3%). Most of the women delivering in this institution belonged to the low economic status. 96.4% of the patients had an income of less than 350 rupees a month and the family had to support usually 9 members (9.2 members statistically). Although this group mentions only socio-economic conditions as an indication, multiparity as a basic indication was taken for granted.

(ii) *Obstetrical*: There were 37 cases of caesarean section who had the tubal ligations. There was one case of rupture of the uterus. As the patient was young, suturing of the tear and tubal ligation was done. Out of 37 cases, 32 patients were being sectioned for the third time, in 2 patients tubal ligation was done at the time of second caesarean section at their own desire and 3 patients were operated for foetal distress (cord prolapse, accidental haemorrhage

etc.) and as they had enough number of living children, tubal ligation was undertaken. It was customary to sterilize at the time of the third section as the patients are usually very apprehensive about the operative delivery every time.

(iii) *Medical*: Nine patients were chosen for tube ligation for medical reasons in this series of 1015 cases. Eight were cases of heart disease where further pregnancy was considered as a definite risk. One was a case of chronic pulmonary tuberculosis.

Operation:

(i) *Method*: Pomeroy's method of tubal ligation was chosen for most of the cases (1010 out of 1015). Aldridge's method was used on two occasions and Madlener's method, bilateral salpingectomy and Irving's method were done in once each.

Pomeroy's method of tubal ligation (or its minor modification) is chosen in this institution as it is technically simple, interferes least with the peritoneal cavity and is supposed to have a reasonably low failure rate.

(ii) *Hospitalization*: The patient was taken up for surgery on the next operation day (i.e. maximum of 3 or 4 days after the delivery). If the patient was severely anaemic, the operation was postponed till a further date, the patient being built up in the meanwhile. The total preoperative (delivery to operation) and postoperative period was about 9 days (3.1 days plus 5.8 days).

(iii) *Anaesthesia*: Eight hundred and thirty-one cases were operated under spinal anaesthesia (81.8%)

and 143 were operated under local field block (14%). There is an increasing tendency to operate under local infiltration anaesthesia as this has hardly any complications if properly administrated.

Fifteen cases developed headache following spinal anaesthesia, lasting for a variable period from 2 to 6 days irrespective of the line of the treatment. Eight patients with spinal anaesthesia had an appreciable fall of blood pressure requiring resuscitation with vasopressors. There was no case of meningitis or paresis following spinal anaesthesia. Backache as a complication has been described in the follow-up.

(iv) *Incision*: A transverse incision on the lower abdominal wall along one of the natural creases is better than a vertical one. This incision was made in 34.2% of the cases in the present series. In 1966, 171 tube ligations out of 201 were done through a transverse incision. It may be stated here that the two post-operative incisional herniae occurred with midline incisions only.

(v) *Postoperative complications*: There were 18 cases who had a post-operative rise of temperature of about 99°F. Distension was noted in four patients. Six patients had stitch abscesses and in seventeen patients the wound gave way. Only in two cases resuturing was necessary. In all the other patients the wounds healed after local dressing. Fifteen patients had headache and eight had fall of blood pressure and needed resuscitation with vasopressors. This was probably due to the spinal anaesthesia used in these cases.

Follow-up:

All the patients in this series were sent a post-card requesting them to come for a follow-up. Three hundred and fifty patients attended for the check up (35%). Two hundred and eighty-six cards were returned as the patients were not traced at the address given. Four patients wrote back and explained their inability to attend. We were ignorant about the whereabouts of the other patients. The patients' attitude towards the operation and their impressions were personally discussed. The symptoms were analysed to correlate them with the operation. A thorough clinical examination was made with special attention to the scar, bimanual examination and per speculum examination in every patient who attended.

In the present study, menstrual abnormalities, backache and leucorrhoea were the chief complaints of the patients.

(i) *Menstrual irregularities*: Menstrual irregularities were noted in 98 cases, i.e. 28%. Polymenorrhoea, dysmenorrhoea and menorrhagia were the more common disturbances. Most of the authors (Adatia; Chakravarty; Bisney *et al.*) mention menorrhagia as a common complication. There was no palpable pelvic pathology in 95 out of 98 cases. Two cases had tubo-ovarian masses and one had a bulky uterus. These menstrual irregularities occurred in the age group between 27 to 32 years (average 30.2 years). One significant fact probably evolves from the present observation that dysfunctional uterine bleeding tends to occur at or about 40 years of age, whereas

in the post-tubal ligation cases, it had occurred at a younger age group (around 30 years).

It is difficult to conclude that these changes could have occurred as a result of interference with the ovarian blood supply which ultimately gives rise to cortical hyperplasia and hyper-estrogenism. The hypothalamus could also be equally responsible for this. Other causes like malnutrition, lactational irregularities or other medical diseases contracted recently cannot be ruled out. Collins *et al* (1950) have shown that the ligation of the ovarian vessels and even the inferior vena cava does not severely interfere with the ovulatory function in most people.

(ii) *Backache*: This was complained of by 92 patients (out of 350) and on further inquiry it was found to have been present even prior to tubal ligation in 41 patients. Out of 51 patients who blamed the operation for their backache, 47 patients were given spinal anaesthesia. This factor was not further investigated with radiological studies.

(iii) *Leucorrhoea*: Sixty patients had leucorrhoea. Erosion of cervix was found in 16 cases; biopsy was taken in 4 cases and was negative for malignancy.

(iv) *Other symptoms*: There were only 2 patients who attributed their recent obesity to the operation. This figure is significantly low to have any statistical importance; however, obesity could occur because of the absence of any fear of unwanted pregnancy and labour and their complications. There were 4 cases with some psychic disturbances. Out of these, 2 patients had gaping of the wound

that caused prolonged hospitalisation (30 days, 46 days) and they seemed to attribute all the troubles to the operation. One patient had 2 daughters and she was operated at her own will and now she had psychological disturbances. No cause could be found for psychic changes in one case. One patient had dyspareunia (deep).

(v) *Findings on check up*: Two patients had incisional hernia. Incidentally both the scars were midline vertical scars. One was already repaired in another hospital and the second patient was advised to undergo repair.

In about 60% of the cases the uterus was retroverted; there were 2 cases of tubo-ovarian masses and 3 cases of second degree prolapse.

There was no case of failure in 350 patients who attended for follow-up. There was no case of ectopic pregnancy or of intestinal obstruction.

Conclusions & Summary

1. A detailed statistical analysis of 1,015 cases of tubal ligation operations carried out at B.Y.L. Nair Ch. Hospital, Bombay, during the period from January 1963 to December 1966 has been given.

2. A careful follow-up was planned; 35% of the patients responded by attending for follow-up. A thorough history was taken and a careful examination was done.

3. The indications for the operation have been discussed; the commonest indication was socio-economic (93.3%).

4. The complications and side-effects in the present series have been mentioned and discussed.

5. There was no pregnancy reported in the patients attending the follow-up. (350 cases).

6. The over-all observation study indicated that the operation is simple and safe. It has no significant untoward side-effects and can be performed any time.

Acknowledgement

Our thanks are due to Dr. T. H. Rindani, M.D., F.A.Sc., F.A.M.S., D.Sc., the Dean, B.Y.L. Nair Ch. Hospital and T. N. Medical College, Bombay, for allowing the hospital data to be utilised for this publication.

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