

Study of Failed Laparoscopic Sterilization By Fallope Ring Application From An Industrial Hospital

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Summary

This study presents analysis of 105 failure cases of laparoscopic sterilization by fallope ring application conducted during 5-year period from 1993 to 1998. Total number of sterilisations done were 12788. Out of the 105 failure cases, 75 (0.586%) were from a tertiary care industrial hospital, while 30 (0.234%) were sterilizations done outside in the camps conducted by the district Government hospitals.

Introduction

Voluntary female sterilization by laparoscopic fallope ring application is quick, safe and most effective outpatient permanent sterilization procedure done under local anaesthesia, enabling the woman to resume normal activity in a short time. It gives better cosmetic results. Success of the method depends on proper technique and expertise. Pregnancy after laparoscopic sterilization has been reported in literature (Chi et al, 1980; Hughes, 1977).

Material and Methods:

A five year study was conducted during 1991 and 1998 at Jawaharlal Nehru Hospital & Research Centre, Bhilai Nagar, M.P., which is a tertiary care hospital. Out of 12788 cases sterilised 105 failures were reported. Luteal phase pregnancies were excluded from the present study. Age, parity, sterilization-conception interval, outcome of pregnancy, causes of failures were analysed.

Observations and Results

Retrospective analysis of sterilization failures according to the age revealed maximum failures (75 cases; 71.42%) in the age group 20-25 years and only 5 failures (0.47%) in patients aged more than 31 years (Table-I).

Sixty (57.14%) pregnancies occurred in women with less than 3 children, while 35 (33.33%) pregnancies occurred in women with 3 children. Women aged 30 or more than 30 years with 4 or more than 4 children showed the least number of failures (9.52%) indicating decrease in fertility potential with advancing age (Table I). Pregnancy occurrence was the highest (57.14%) when the sterilization-conception interval was the lowest (less than 1 year) as shown in the Table II. Only 17 women (16.19%) conceived more than 2 years after the sterilization (Table I). Eighty nine patients (84.76%) reported within the first trimester of pregnancy while 13 (12.38%) reported in 2nd trimester and had undergone

medical termination of pregnancy (MTP) (Table II). Two patients (1.90%) came later than 20 weeks of gestation and were advised to continue pregnancy. One case of ectopic pregnancy was reported in the present series (Table II).

Table – I
Age, Parity, Sterilization – Conception Interval

Characteristic	Number	Percentage
Age (Years)		
20-25	75	71.43
26-30	25	23.81
> 31	5	4.76
Parity (Children)		
< 3	60	57.15
3	35	33.33
≥ 4	10	9.52
Sterilization – conception Interval (Years)		
1	60	57.15
1-2	28	26.66
> 2	17	16.19

Table – II
Analysis of Failures

Causes	Number	Percentage
Ring not seen in close tubal Proximity	15	14.29
Unilateral application of ring	18	17.15
Incomplete tubal occlusion	21	20.00
Ring on mesosalpingeal fold	19	18.09
Ring on round ligament	18	17.14
Ring on ovarian ligament	14	13.33

Out of 105 failures, technique failures occurred in 54 (51.425) cases, while operating surgeon related failures occurred in 51 (48.57%) cases. Operator related failure causes included band on round ligament in 18 (17.14%) patients; on mesosalpinx in 19 (18.095) and on round ligament in 14 (13.33%) (Table II).

Table – III
Repeat Sterilization

Procedure	Number	Percentage
MTP + Laparoscopic sterilization	84	80.00
MTP + abdominal ligation	18	17.15
a) Patient desired	10	9.52
b) Surgeon decided due to technique failure	8	7.63
Pregnancy continued	2	1.90
Ectopic pregnancy	1	0.95

Eighty four (80%) of the total 105 failure case had undergone MTP and repeat laparoscopic ring application (Table III) with one or two rings on each side ensuring good loop of the ring. Ten (9.52) out of the total failure cases had undergone abdominal ligation (Table III). Eight (7.62%) patients due to their husbands' unwillingness for vasectomy were subjected to abdominal ligation by surgeon as their fallopian tubes were fibrosed and thick at the time of repeat laparoscopy after MTP (Table III). Two (1.90%) patients continued pregnancy and underwent ligation after delivery (Table III). One (0.95%) patient with ectopic pregnancy underwent laparotomy, salpingectomy on the affected side and contralateral tubal ligation.

Discussion:

Laparoscopic sterilization has gained universal acceptance as a safe and effective method of permanent contraception.

International studies reported failure rates between 0.2% to 2.63% following laparoscopic sterilization (Bhuwandiwal et al, 1982; Chi et al, 1980; Stovall et al, 1990; Vessey et al, 1983; Yoon et al, 1977), while Indian workers Parikh (1987), and Mukherjee and Gupta (1992) reported very high failure rates of 1.2% and 2.79% respectively. On the contrary, Mehta (1989) and Gupta and Dube (1993) reported very low failure rates of 0.1% and 0.17% respectively indicating the differences in skills, and training of the surgeons and available facilities. In the present study, the most common cause of failure was incorrect technique by inexperienced surgeon. Wrong structural identification and application of ring on round ligament or ovarian ligament contributed to 51 (48.57%) failures, while ring was not visible on both tubes in 15 (14.28%) failed cases. To reduce failure rates, careful inspection of the pelvic structures before and after band application is necessary (Khandwala, 1993; Yoon et al, 1977; Venkataraman et al, 1997). The site and accuracy of band application may be doubly checked. Yoon et al's (1977) three grasp technique should be practiced to reduce oedema and ensure complete occlusion of the tubes. Poor quality of the ring, which breaks after application should be avoided (Kore et al, 1996) and rings should be mounted on the applicator just before the procedure.

Hughes (1977) reported 73% of failures within 2 years of the primary procedure while corresponding figure in our study is 86.25%. The present study suggests that periodic follow-up for 2 years will enable the surgeons to pick up failure cases at an earlier date. Follow-up can be done at delayed intervals 2 years after the primary procedure as failure rate is very much minimal at the time.

Conclusion:

Sterilization surgery, being one of the permanent population control procedures, should be done meticulously.

Proper screening of the patients in the family planning camps, improved skills of the surgeon, and use of tested quality of rings can reduce failure rate, thus preventing defamation of National family welfare programme. Sterilization failures should motivate surgeons to introspect and reduce the incidence to the least possible.

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