

FAILURE OF LAPAROSCOPIC STERILIZATION A CRITICAL ANALYSIS OF 50 CASES

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SUMMARY

50 cases of failure following laparoscopic sterilization were evaluated at LTMG Hospital, Sion, Bombay. In 33 patients sterilization was done by single puncture technique. Misidentification was the cause in 11 cases, while in 14 cases it was because of superficial occlusion.

INTRODUCTION

The increasing popularity of voluntary female sterilization during the last decade has been chiefly due to the use of the laparoscopic method, which is quick, highly effective, and a safe outpatient procedure, enabling the woman to resume normal activity in a short time. The laparoscopic mechanical occlusion of the tube by silastic bands has been the commonest method of sterilization in recent years. However, success of the method depends on proper technique and expertise. In inexperienced and unskilled hands it may not only be associated

with complications but also will have higher failures. Pregnancy after laparoscopic sterilization has also been reported in literature, by Hughes G.J. (1977) and Chi et al (1980).

A sterilization failure is a setback to the family planning programme of the hospital and the nation and can be a demotivation factor for many other patients.

MATERIAL AND METHODS

A critical analysis of 50 patients of failed laparoscopic sterilization was carried out over a period of 3 years at LTMG Hospital, Sion, Bombay. Patients with previous laparoscopic sterilization presenting with ectopic pregnancy were not included in

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this series. All patients were analysed as regards to type, timing, place of surgery, experience of doctor and other procedure related factors. The possible causes of failure were evaluated during repeat sterilization procedure. The factors responsible for failure have been discussed.

OBSERVATION AND RESULTS

A retrospective analysis of 50 patients of failure of sterilization who had undergone laparoscopic ligation by silastic bands was undertaken. As all the sterilization procedures were not done at our hospital an institutional incidence of failure could not be calculated.

In the present study 19 patients had undergone interval sterilization, in 31 patients Medical Termination of pregnancy was performed concurrently with the sterilization. The oedematous tubes associated with pregnancy, abnormal position - posterior displacement of tubes, and an increase in the size of the uterus may lead to incorrect application of the bands, thus contributing to higher failures of sterilization, when done along with MTP.

A total of 12 patients had been operated upon in teaching institutes (tertiary centres) (Table I) while in 5 patients ligation was done in laparoscopy camps.

Table I
PLACE OF PREVIOUS LAPAROSCOPIC LIGATION

1.	Teaching Institute	12
2.	Peripheral Hospital	11
3.	Private Hospital	13
4.	Maternity Homes	09
5.	Ligation Camps	05

Table II
QUALIFICATION OF THE OPERATING SURGEON

1.	Qualified degree holder with laparoscopic training	02
2.	Resident doctors	20
3.	Medical officers *	06
4.	Private practitioners *	07
5.	Qualifications not known	15

* Includes both Qualified & Unqualified

In 33 patients, the procedure was done by single puncture laparoscope. In 17 patients double puncture technique was used.

In 23 patients proper general anaesthesia was given. In the rest of the 27 patients, the procedure was done under sedation and local anaesthesia.

The experience and skill of the surgeon performing the ligation has a bearing on the success of the procedure. There were only two cases of failure when sterilization was done by qualified personnel with adequate experience and training in laparoscopy. In 15 patients, proper data regarding qualification of doctor who had performed the ligation could not be obtained. (Table II)

All the patients of failure presented with amenorrhoea, the duration of gestation at

admission is listed in Table III.

Table IV shows interval between sterilization and failure; the majority coming within one year of sterilization.

In the present series of 50 patients, 41 underwent Medical Termination of pregnancy followed by tubal ligation by minilaparotomy. 9 patients opted for continuation of pregnancy and subsequently underwent puerperal sterilization.

In 43 of these patients, a Modified Pomeroy's method was adopted, while in 7 cases total / partial salpingectomy was performed. During the repeat surgery an attempt was made to determine the cause of the failure of previous surgery. (Table V) In 18 patients there was an absence of silastic band on at least one of the tubes.

Table III
PERIOD OF GESTATION AT PRESENTATION

Gestation in weeks	Number
< 8	11
8 - 12	17
13 - 20	16
> 20	06

Table IV
STERILIZATION FAILURE INTERVAL

Interval (Mnths)	Number
< 3	02
3 - 6	12
7 - 12	16
13 - 24	13
> 24	07

Table V
PROBABLE CAUSES OF FAILURE

1. Misidentification of tube	11
Application on round ligament	07
Ovarian lig.	01
Mesosalpinx	03
2. Absence of band on one side	07
3. Superficial application	14
4. Proper application (Probable Fistula / Recanalization)	18

While the band was found on the round ligament in 7 cases, in 1 patient it was seen on the Ovarian ligament. In 3 cases the band was found hanging on the mesosalpinx. In 1 case two bands were applied on the same tube, the other side being totally intact, indicating that the other tube was completely overlooked. Similar cases of overlooking of one tube has been reported by Yoon et al (1977) and Corson & Bologness (1972) Non application of band on one side may be due to adhesion or abnormal position of tubes. There was superficial application of the band not taking the entire lumen in 14 cases. In the remaining cases the band must have probably slipped off due to loss of memory or got broken due to poor quality.

In 18 cases we could not find out the cause for failure as there was correct application of the band on both sides. Failure was probably due to recanalisation or the formation of a tubo peritoneal fistula, or probably luteal phase pregnancy.

DISCUSSION AND CONCLUSION

Failure following sterilization is disruptive and emotionally upsetting to the

woman. The negative impact of the failure to the woman who is determined to terminate her fecundity by sterilization is disastrous, so also it is to the society. Hence all cases of failure need to be reviewed.

Though single puncture technique is simpler and faster it has the disadvantage of a restricted field of vision, which may lead to improper application of bands. Though we had higher failure with single puncture done under sedation - L.A. as compared to double puncture procedure, a long term prospective study is required to evaluate and compare the two techniques.

The place of the procedure & the skill / expertise involved has a definite bearing on the success of the procedure. In the majority of cases of failure in this series sterilization has been performed by unqualified persons. Surprisingly, in 12 cases sterilization has been performed in teaching institutes mostly by resident doctors. This is probably because ligation is considered a minor procedure and adequate supervision has not been given by seniors.

The correct technique, site of occluding the tube is also important. Ideally the tube should be picked up 3 cms. from the uterotubal

junction and a occluded loop should be no less than 2 cms. containing both lumens (Yoon 1977). The vertical groove seen in between is adequate proof of including the entire lumen.

The commonest cause of failure of laparoscopic sterilization are :

1) Mis-identification of tube - application of band on the round ligament is the commonest mistake, 7 cases in this series. The main cause of misidentification could probably be improper visualization resulting from inadequate pneumoperitoneum, clouding of telescope, defective light or failure to elevate the uterine fundus properly.

2) Improper application of rings resulting in slipping of or partial occlusion of one wall. This happens when band is applied near or at the ampullary end.

3) Poor quality ring resulting in loss of memory or breaking off.

4) Spontaneous rejoining of the tube, tuboperitoneal fistula. Brenner et al (1976) explained failure on the basis pressure necrosis due to close approximation of 2 segments of the tubes below the ring resulting in fistula formation with or without recanalisation. While Thompson et al (1975) hypothesized that conception took place

prior to complete fibrosis in lumen which takes 3 months or more.

5) Lastly, luteal phase pregnancies due to unreliable menstrual data, irregular cycles and improper screening, though criticised by Konar H (1987) and Bhiwandiwalla (1982) as impractical and non cost-effective for large scale sterilization as in camps, routine presterilization D & C in every case to avoid luteal phase pregnancy can be recommended in hospital practice.

As majority of the reasons for failure are avoidable, proper screening of patients, improved skill of surgeons and use of tested quality of rings can greatly reduce failures in laparoscopic sterilization.

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