

LAPAROSCOPIC STERILISATION WITH SILASTIC BANDS: DIFFICULTIES AND COMPLICATIONS

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SUMMARY

Prospective analysis of 80 patients who underwent laparoscopic sterilisation with silastic bands is presented as regards the problems encountered during the laparoscopic procedure and their management and post-operative morbidity. The safety of tubal ring sterilisation after an induced abortion and as an interval procedure is evaluated and compared. Difficulties and complications associated with laparoscopy were similar in both the groups.

Introduction

Female sterilisation is an important option which can help to make every child a wanted child. It is now the leading method of fertility control. The laparoscope has revolutionised female sterilisation for women. It is now a relatively safe, short operation with minimal complications and low mortality. In India, female sterilisation needs to be carried out in large numbers in order to effectively control our population. Laparoscopic technique is an ideal method for large scale female sterilisation as proved by the success of various rural sterilisation camps. However the success of this method depends upon proper training and expertise. The aim of this study was to ascertain the difficulties encountered during laparoscopic sterilisation using silastic bands and the incidence of post-operative morbidity. An attempt was also made in

the study to know whether there is an increase in the morbidity when sterilisation is carried out along with abortion.

Material and Methods

Laparoscopic sterilisation using silastic bands (Chimcon Bands) was carried out as an in-patient procedure on 80 parous women at a teaching hospital in Bombay. The patients in the study were divided into two groups: in one group of 36 patients sterilisation was done as an interval procedure and in the other comprising 44 patients, the sterilisation was carried out along with first trimester abortion. The operations were performed on an indoor basis using general anaesthesia. In the post-abortal sterilisation cases, a suction evacuation of the first trimester pregnancy was performed prior to the laparoscopic sterilisation procedure. The details of the medical termination of pregnancy and laparoscopy are omitted here. The cases were studied and evaluated in the light of the surgical difficulties encoun-

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tered and the operative and post-operative complications and complaints in the two different groups. In 15 cases of a follow-up laparoscopy was done 6 months or longer after the primary sterilisation procedure. Special attention was paid to identify the band itself. The state of the peritoneum, the proximal and distal portions of the fallopian tube, any adhesions to the adnexa or other viscera were also noted.

Results

The socio-demographic characteristics of these women were evaluated. Women in the study group were between 22 to 42 years of age (mean 32.1 years). A majority of these patients came from urban areas, and were not gainfully employed. Parity of these patients ranged from 2 to 8 (mean 3.7). Three-fourths of the women had not used any contraceptive prior to sterilisation.

The surgical difficulties encountered during the actual procedure were grouped with 3 categories according to the following criteria:

Technical failure: defined as a case in which the designated procedure could not be successfully completed. There was no such failure in the series.

Technical difficulty: was defined as any difficulty associated with the equipment or bands.

Surgical difficulty: defined as any difficulty during the procedure which was not due to equipment related problems. The difficulties have been compared in Table I.

Operative complications were defined to include those that occurred during the procedure. The overall complications rate for the post-abort cases (6.8%) was not significantly higher than that for interval cases (5.5%) (Table II).

Post-operative complications and complaints were categorised as immediate and early post-operative. Immediate complications were those occurring after surgery but prior to the patient leaving the hospital. Early post-operative complications were those noted between the discharge and time of first follow-up visit 7-21 days after surgery. Of the total 80

TABLE I

Surgical difficulties	Post-abortion N = 44		Interval N = 36	
	No.	%	No.	%
(A) Technical/equipment related difficulties				
— Lens fogging	3	6.8	1	2.8
— Gas leakage	6	13.6	4	11.1
— Applicator problems	1	2.3	—	—
— Detective bands	10	22.7	9	25.0
— Inadequate application	1	2.3	—	—
— Total procedures*	11	25.0	10	27.7
(B) Procedure related difficulties				
— Adhesions	2	4.5	1	2.8
— Omental interference	2	4.5	3	8.3
— Hydrosalpinx	—	—	1	2.8
— Oedema of tubes	3	6.8	—	—
— Total procedures*	6	13.6	5	13.88

* More than one difficulty was associated with some procedures.

TABLE II

Complications	Post-abortion N = 44		Interval N = 36	
	No.	%	No.	%
— Extraperitoneal gas	2	4.5	1	2.7
— Uterine perforation	1	2.2	—	—
— Cervical laceration	—	—	1	2.7
— Laceration/transection of tube	—	—	1	2.7
— Tear of mesosalpinx	1	2.2	—	—
— Women with one or more complications	3	6.8	2	5.5

TABLE III
Post-operative Complications and Complaints

	Post-abortion N = 30		Interval N = 22	
	No.	%	No.	%
Immediate complications:				
— Pelvic/abdominal pain	3	10.0	1	4.54
Complications after discharge:				
— Fever (more than 30°C) treated with antibiotics	2	6.7	1	4.54
— Incision infection	1	3.3	—	—
Complications 6 months after surgery:				
— Hypertrophied umbilical scar	—	—	1	4.54

patients, 52 came for follow-up. The post-operative complications are given in Table III.

Approximately six months after the initial sterilisation procedure, a follow-up laparoscopy done in 15 cases showed the following findings. Band on the knuckle of tube was well peritonised and covered with minute blood vessels crossing the band in 7 of the post-abortion cases and 6 of the interval cases. The band was partially applied in one interval case and in one post-abortion case it was applied on the round ligament on the right side.

Flimsy adhesions between band and parietal peritoneum and neighbouring structures like ovaries were seen in 3 cases. One case in the interval group showed a hydrosalpinx formation on the proximal part of right tube.

Discussion

The common problems encountered during and after the procedure were analysed in detail and their causes and remedies sought.

Technical problems and their management

Gas leakage, a common problem was due to a faulty rubber gasket which should be replaced from time to time when signs of wear and tear appear.

Defective bands: These contributed, by far, the largest share to technical difficulties. In 10 cases in the post-abortion group and 11 cases in the interval group, one or more bands broke during loading. As regards broken bands, close scrutiny revealed that the cause was one of the followings:

(1) *Incorrect loading technique*: Loading the band too rapidly or slanting the applicator or using fingers instead of the guide to push the band onto the dilator can cause damage to the bands.

(2) *Damaged loading device or applicator*: Surface nicks on the dilator, irregular central hole of the guide, imperfections on the inner tube of the applicator, or incorrect band placement due to defective tension in the spring which controls the movement of the inner tube, can all lead to band breakage. Thus the commonest technical difficulty was defective bands. There were no technical failures in the series.

The safety of laparoscopic tubal ring sterilisation after an induced abortion and as an interval procedure was evaluated and compared. The surgical difficulties and rates of complications were not significantly different for the two groups.

On the basis of this study it does not appear that suction evacuation done prior to laparoscopic sterilisation significantly increases the risks associated with sterilisation procedure.

Laparoscopic silastic band sterilisation is an inexpensive, safe and acceptable method of sterilisation. It can be safely combined with medical termination of pregnancy. It cuts down expenses by minimising hospital stay; and as it does not cause much discomfort, the patient can resume her household duties the very next day. These special advantages, low complication rate, and acceptable failure rate more than compensate for the expertise required and for the expensive equipment needed. Thus freed from the shackles of older sterilisation methods, the women of today can fly away on the wings of this new technology.