

Sterilization Failures and Their Causes

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Summary

This is a prospective study of 78 cases of failure of previous sterilization. The patients reporting for failure of previous sterilization were asked to procure copy of original operation notes if available. Out of 78 cases, 63 patients opted for MTP and re-sterilization. Re-sterilization was done in 66 cases by applying rings through laparoscope. In 36% cases there was unilateral or bilateral absence of rings. In 21 cases (30%) rings were found either on round ligament or mesosalpinx. Therefore, failure to be as minimal as possible the client should be properly counseled, the surgeon must be optimally trained, equipment and all accessories should be in proper state of working.

Introduction

As we all know sterilization is a simple, safe, widely accepted, permanent, effective methods of contraception. Still there are some chances of failure 0.2-2.0%, this point is to be highlighted and stressed during counseling otherwise the surgeon may face legal threats from clients. Many doctors are facing these problems in our state, some sterilization failures are preventable but many are not. Failure rate is known to vary as per technique as well as experience of the surgeon. Pregnancy following sterilization could be due to the following reasons – luteal phase pregnancy, fistula, spontaneous recanalization of tubes, faulty surgical technique and errors in identifying the fallopian tubes.

Material and Method

This study is a prospective study of 78 clients who attended family planning outdoor, during Jan 95-Dec 99 in Dept. of Obst. & Gyn. KGMC for failure of sterilization. The clients for repeat sterilization were given incentives in the same way as for first sterilization.

Prior to each repeat sterilization procedure copy of original operation note if available was obtained.

The acceptance of repeat sterilization and the method depended upon the choice of the client. The pregnancy outcome and finding at repeat sterilization were studied. This study includes 78 cases of sterilization failure seen during Jan 95-Dec 99.

Observations

This study includes the patients on whom previous tubectomy was done in this hospital as well as in other centers. Therefore, it is not possible to calculate the exact failure rate as denominator is not known. During the same period i.e. Jan 95-Dec 99 a total of 4642 sterilizations were done in the Dept. of Obs. & Gyn., KGMC. Therefore, the incidence of failure is about 0.79%, this failure rate may not be true because our patients of failure might have gone to other places.

Out of total 78 patients, 70 were Hindus, 7 Muslim and 1 Sikh. More than 50% belonged to the age

group of 26-30 years and 3 patients were above 40 years of age. (Table I)

Table I: Showing Age

Age	No. of Cases	Percentage (%)
20-25	10	12.8
26-30	41	52.5
31-35	22	28.2
36-40	2	2.5
>40	3	3.8

Sixty seven percent were residing in urban areas and about 18% came from neighboring districts, KGMC being the referral Hospital.

Most of the patients (46%) were illiterate and only 5 had University education. The educated patients have reported failure in first trimester of pregnancy. Those patients who had reported pregnancy in the 2nd trimester were either illiterate or had only primary education (Table II).

Table II: Showing Literacy

Education	No. of Cases	Percentage (%)
Illiterate	36	46.1
Primary	10	12.8
Middle	20	25.6
Inter	7	8.9
University	5	6.4

Sixty percent patients had 2 or 3 children and 7 patients had more than 6 children, one each had 8 and 10 children.

Most of the patients, (46%) had their last child 1-3 years of age and 23% of 5 years age (Table III).

Table III: Showing Age of Last Child

Age	No. of Cases	Percentage (%)
3-6 months	1	1.2
6-12 months	6	7.6
12 - 24 months	19	24.3
24 - 36 months	17	21.7
3 - 5 years	17	24.3
>5 years	18	23

About 47% of patients had tubectomy in the Medical college and 20% in the district hospital. Sterilization surgery is considered to be the most simple surgery, hence it is performed by residents. In addition to this, Medical college has been recognized as a training centre for government sponsored doctors. (Table IV).

Table IV: Showing Place of Tubectomy

Place	No. of Operations	Percentage (%)
Camp	3	3.8
District Hospital	16	20.5
PHC	3	3.8
Medical College	37	47.4
Others (Maternity Homes, FPAI)	19	24.3

Six patients had failure of tubectomy done during caesarean section and only 1 patient had failure of post-natal ligation by pomeroys technique and rest (90%) had laproscopic ligation by rings. (Table V).

Table V: Showing Type of Sterilization

Type of Sterilization	No. of Cases	Percentage (%)
Interval Lap	60	76.9
MTP & Lap	11	14.1
LSCS	6	7.6
PNC	1	1.2

Ten patients had pregnancy within 6 months of sterilization and 1 each had pregnancy after 6, 7 and 10 years of sterilization. The shortest interval noticed was less than 3 months. (Table VI).

Table VI: Showing Interval Between Sterilization and Pregnancy

Duration	No. of Cases	Percentage (%)
Upto 3 months	5	6.4
3-6 months	5	6.4
6-12 months	11	14.1
1 year	18	23.0
2 year	16	20.5
3-5 years	20	25.6
6, 7 & 10 years	3	3.8

Outcome of Pregnancy

Sixty-three patients opted for MTP and re-sterilization, 62 by laproscopy and 1 by mini-lap. Out of these 63 patients 48 had MTP by suction evacuation and 15 had midtrimester abortion by hypertonic saline or emcredyl.

Findings at Re-Sterilization

Out of 71 cases of failure of primary laproscopic ligation, repeat laproscopic ligation was done in 61 cases. There were 6 failure of Pomeroy's tubectomy done during LSCS. Out of these 6 cases, 3 patients showed recanalization of tubes. One case of Pomeroy's tubectomy done during postnatal period had failure more than 4 years later. MTP was done but her nausea and vomiting persisted, therefore USG was done and she was

diagnosed as a case of Bicornis Bicolis.

Findings at re-sterilization (66 cases)

1. Ring absent on both sides.	04	Technical failure (36%)
2. Ring absent on one side	20	
3. Ring on round ligament	12	Surgical error (30%)
4. Ring on mesosalpinx	09	
5. Incomplete occlusion of one or both tubes,	06	
6. Recanalization of tubes. (3 lscs, 3 Lap)	06	
7. Extensive adhesions	02	
8. Bicornis Bicolis uterus	01	
9. Indeterminate	07	

The re-sterilization findings in 66 cases indicate that in 24 cases (36%) either there was bilateral or unilateral absence of rings i.e. technical failure. These cases were done either in the camp or other hospitals. It may be because of early part of career of service provider or ring might have slipped of due to its poor quality. In 21 cases, (30%) rings were found either on Round Ligaments or mesosalpinx. In 6 cases, tubes were recanalized, 3 cases following LSCS & 3 following laproscopic ligations. In 7 cases the cause could not be determined as the proximal and distal stumps of the tubes were wide apart. ? Fistula

Discussion

Wrong identification of tubes during surgery (30%) was the main reason for the failure of sterilization. This is also reported by Dongaonkar et al (1992). Parikh (1987) & Goyal (1985).

Out of 10 patients who had pregnancy as early as 3-6 months following sterilization, in 4 cases one or both tubes were recanalized. (2 following LSCS & 2 following laproscopic ligation). Eight cases in which failure occurred within in 1-3 years had unilateral or bilateral absence of rings & one patient who had bilateral absence of ring had failure after 3 years. This may be an incidental finding or may be due to relative infertility of lactational irregularity. According to Soderstorm (1985), those cases where procedure has been negligently or incompletely performed, pregnancy usually ensues

within 3-6 months following the procedure. In those cases where recanalization occurs to be the underlying cause of failure, usually a number of years 2-5 following the procedure before pregnancy results.

The collaborative review of Sterilization CREST study points to a first year probability of pregnancy of 5.5 for every 1000 procedure & a 10yr cumulative pregnancy of 18.5 per 1000 procedures, and sterilization failure is more likely if women are young when the procedure is performed because young women are more fertile than older women.

Studies of interval laproscopic procedure using bands have shown failure rate of 0.5% at 24 months (Bhiwandiwalla ET al 1982) and 1.3% at 36 months. (Trias, 1987)

Pregnancy may also occur after sterilization if technical problem such as equipment malfunction, bands incorrectly applied so that tube is not fully occluded or device comes off. Silicone bands may also be torn or cut when being placed over applicators, such that they will not occlude or will slip off. Problems with lens or light source of Laprocator can contribute to surgical errors when a ring is incorrectly applied or placed over wrong structure.

Therefore for failure to be as minimal as possible, the client should be properly counseled, the surgeon must be optimally trained and equipment and all accessories should be in proper state of working.

References

1. Bhiwandiwalla P.P, Mumford S.D, Feldblum P.J - Am J of Obst & Gyn - 144 (3) 319; 1982.
2. Dongaonkar D. Malhotra S, Kalamkar L: J Obst & Gyne. of Ind 42, 168; 1982.
3. Goyal N. - J of Obst & Gyne of India 35, 374; 1985.
4. Parikh V - J of Obst & Gyne of India 37 : 432; 1987.
5. Peterson H.B, Xia Z, Hughes J.M, Wilcox L.S., Tylor L.R., Trussel J - Am J of Obst & Gyn - 174 (4). 1161; 1996.
6. Soderstorm R. M. - Am J of Obs. Gyn. 152 (4) : 395 - 403, 1985.
7. Trias M, Int. J Obstet & Gynecol, 25, 235, 1987.