EVALUATION OF FAILED FEMALE STERILIZATION

By

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SUMMARY

Six thousand four hundred sixteen Laparoscopic sterilizations by silastic band application were carried out at Kutumb Sudhar Kendra of Family Planning Association of India, Bombay, from January 1982 to March 1987; 16 cases reported with failure of previous sterilization during the same period. Age of these 16 cases ranged from 24 to 38 years and parity from 2 to 6. The time interval between previous sterilization and subsequent pregnancy varied from 1 month to 4 years. Undetected wrong application of the ring was the cause of failure in 8 cases (50%) while in 4 cases (25%) it was due to incomplete luminal occlusion. In our study no luteal phase pregnancy continued and there was no ectopic pregnancy. All subsequent pregnancies were intrauterine. Out of 16 failures, correct reapplication of the ring was possible in 11 cases whereas, one underwent postpartum sterilization. In one case minilaparotomy was done following 2nd trimester termination. The two cases refused to get repeat sterilization and hence Copper T was inserted.

Introduction

Widespread demand for simple, effective and inexpensive female sterilization procedure has encouraged both medical personnel and researchers to evaluate existing methods and develop new ones for tubal occlusion. Today, two major questions concerning any method of female occlusion yet unanswered are: the failure rate of any technique and how these failures can be avoided or kept to a minimum. The popularity and acceptance of any method depends on the incidence of its failure. This study is aimed to evaluate the causes of female sterilization failure. It evolves our experience with 16 cases who attended Kutumb Sudhar Kendra (KSK) for termination of pregnancy with repeat sterilization.

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Material and Methods

The patients included in this series are 16 cases of tubal sterilization failures who attended KSK during January 1982 to March 1987. Kutumb Sudhar Kendra, a family welfare centre of Family Planning Association of India (FPAI), is a well established static centre in Bombay where yearly 1200 to 1400 female sterilizations were carried out during the study period. It is a training centre for various family planning techniques, and training in female sterilization forms one of its major

activities. At present, laparoscopic application of silastic bands has replaced the earlier techniques like vaginal sterilization and laparoscopic cauterization of fallopian tubes, at the centre.

The follow-up system for these patients consists of post-operative 3rd day home visit by a social worker, followed by 2nd follow-up on the 8th or 9th day at the centre or the mobile clinics of FPAI and subsequent 3rd follow-up at the end of 3 months by a home visit of a social worker. There is a wide network of social workers in the FPAI and door to door follow-up by the social worker brings the patients back to the centre for any complaint, including failure of method.

Technique of sterilization

All the cases in our study were done under local anaesthesia, viz. combination of intravenous injection Pethidine 75-100 mgs with Siquil (Triflupromazene Hydrochloride) 5-10 mgs or injection Diazepam 10 mgs + Pentazocine 30 mgs and local infiltration of Xylocain 1%, 7-10 cc. This was supplemented by injection Sodium Pentothal 200-250 mgs, whenever required. The laparoscopes used were STORZ single puncture in 18% of the cases, and double puncture in 82% of the cases. The pneumoperitoneum was created by CO_2. The silastic bands used for the occlusion of fallopian tubes were VOLKSPLANNEREFFP RINGS. During the study period, total 6416 sterilizations were performed of which 55.43% (3556) were concurrent with MTP and 44.57% (2860) were interval and postpartum (3 weeks after delivery). Of these 6416 cases, 51 patients had come for a repeat sterilization with MTP. However, 35 patients out of these fifty one cases were operated outside, for the first time, by various methods of sterilization, viz. Abdominal in 9 cases, Vaginal in 8 cases, Laparoscopic in 11 cases, Hysteroscopic Plugs in 5 cases and Chemical Sterilization by Methyl Cyno-Acrylate in 2 cases. Hence these 35 cases are not considered for the evaluation of failure rate at the centre. The remaining 16 cases had undergone laparoscopic ring application at the centre, during the study period, giving the failure rate of 2.6 per 1000.

Observation

Details of the 1st sterilization of these 16 cases of failed laparoscopic ring application are as follows:

All 16 cases were performed under local anaesthesia. In 6 cases double puncture technique was employed and in 10 cases single puncture technique was used. The age of these patients ranged from 24 to 38 years and parity from 2 to 6 (Table I). 11 cases out of 16 were performed by visiting consultants and 5 by trainees. The time interval between the previous sterilization and subsequent conception varied from 3 months to 4 years (Table II) as against Goel and Misra (1985) who reported failures within a year (Ref. 1). 14 cases out of 16 cases reported back to us for termination of pregnancy in 1st trimester, whereas remaining 2 cases reported in 2nd trimester of pregnancy. Of these two cases, one had termination with ligation in another hospital and the other is in waiting for

TABLE I

Age group in years	with number of living children			
	2	3	4	5
20-24	—	1	—	—
25-30	1	3	1	—
31-35	4	—	3	1
36 & above	1	—	—	1

repeat sterilization after a normal delivery.

TABLE II

Time Interval Between Previous Sterilization and Subsequent Conception

Months	Number of cases
0- 3	2
4- 6	2
7- 9	—
10-12	1
13-18	4
19-24	3
25-36	3
37-48	1

Laparoscopic findings at the 2nd attempt of sterilization

Among the 16 cases reported at the centre, 8 patients had rings on the structure other than fallopian tube on one side: in 4 cases on round ligament and in other 4 cases on broad ligament. In 4 cases the ring was on the fallopian tube but not completely occluding the lumen. One patient had tubo-ovarian mass on right side at the first attempt of sterilization and the ring was applied only to the left fallopian tube. Subsequently the patient was treated with antibiotics and came back to us within 6 months, with 7 weeks intrauterine pregnancy. In one of the 16 cases no ring was seen on the left tube. This patient had removal of Copper T at the time of 1st sterilization and both the tubes were thickened. Lastly, two patients came in 2nd trimester of pregnancy, after 15 and 18 months respectively. One of them delivered and underwent postpartum sterilization outside. The operative notes did not reveal the cause of failure. The 2nd patient delivered 3 months ago and had not yet come for repeat sterilization.

Discussion

Majority of our cases have been followed for a variable period, ranging from 3 months to 5 years. In the present study, 75% of our patients came with failure in 1-4 years. Therefore, followup should be extended to 5 years, which may be impractical. Hence such a surveillance should be done on a voluntary basis. Failure rate of 4 in 1000 upto 6 in 1000 has been reported by Kocher, 1980 and Larsen and Jensen (1983).

In the present study, failure rate is 2.6 per 1000 which is also reported by Yoon *et al.* Although single puncture technique was employed in 18% of the study cases (6416) 62.5% of the failures (i.e. 10 out of 16) have resulted with single puncture technique. This could be due to the blind spot or illusion which exists with single puncture technique as reported by Phillips (1977). In our series, only 5 out of 16 sterilization failures occurred in the hands of trainees. This is because the procedure performed by a trainee is always checked by the senior consultant. Hughes, 1977 observed that the failure rate is higher when laparoscopic sterilization is performed concurrent with MTP and in the postpartum period. Out of the 16 cases, 12 patients fall in this category. Two patients with Copper T removal had thickened tubes, resulting in improper occlusion of fallopian tubes. This indicates the inflammation of fallopian tubes associated with intra-uterine contraceptive device which could be the cause of technical failure. Misidentification of fallopian tubes is reported by Loffer and Pents' review (1980).

The causes of failure in the present study are given in Table III.

TABLE III

Causes of failure		Total
(1) Luteal Phase Pregnancy		Nil
(2) Misidentification of Fallopian Tubes		8
(i) Mesosalpinx	4	
(ii) Round Ligament	4	
(3) Incomplete occlusion of Fallopian Tubes		4
(i) Postpartum	2	
(ii) C.T. Removal	1	
(iii) with M.T.P.	1	
(4) Undetermined Etiology		3
(i) Incomplete operative notes	1	
(ii) Ring missing	1	
(iii) Waiting for repeat sterilization	1	
(5) Ring not applied due to the Tubo-ovarian mass		1

In our series of 16 patients, 8 were operator's failure and 4 were due to incorrect performance of technique. After the ring slides over the fallopian tube, the surgeon must ensure that 2 lumens are included in the ring. Rechecking the knuckle of tube caught by the ring will definitely contribute to minimizing the incidence of failure. In our experience, whenever double ring applicator is used the first ring which is released from the band applicator picks up the smaller loop of the fallopian tube. Therefore, whenever the tubes are oedimatous or thickened, one ring at a time should be applied to overcome the technical failure. In one of the patients, where the ring was not seen on the fallopian tube or any of the pelvic structures, it is difficult to decide whether it is operator's failure, instrument failure, or a device failure. In presence of tubo-ovarian mass when the tube is not occluded, patient should be advised to report to the clinic in case of missed period.

Conclusion

Out of 16 cases in the present study, 13 cases were preventable. They were either due to false identification of fallopian tubes (technical failure) or incorrectly applied ring on fallopian tubes (operator's failure). There was not a single incidence of method failure resulting in spontaneous recanalization, or due to defective device.

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PREGNANCIES WITH CONGENITAL HEREDITARY SPHEROCYTOSIS

(A Case Report)

By

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Introduction

Congenital Hereditary Spherocytosis is a disease rarely encountered during pregnancy. We are presenting herewith a case undetected during 3 pregnancies and diagnosed during the fourth. All her offsprings having inherited this condition.

CASE REPORT

Mrs. M.G. 25 year old Gravida 4, Para 2 was admitted at 22 weeks gestation for jaundice—1 month and swelling of feet—1 week.

A past obstetric history of jaundice at 5 months gestation in her first pregnancy 8 years ago, was treated for infective hepatitis. (S. Bilirubin —Total—3.5 mg%, SGPT—20U, Urine—No bile salts/pigments) and delivered a female who developed jaundice when 5 years old. Her second pregnancy terminated in a spontaneous abortion at 3 months gestation. Her third pregnancy was medically unsupervised and she underwent a home delivery. The female child developed jaundice and splenomegaly and died when 8 months old.

On examination she had marked pallor, icterus and oedema of the lower limbs. Liver was 2 cms palpable and the spleen 3 cms palpable smooth and firm. The uterus corresponded to 22 weeks gestation.

Investigations

Hb—7.2 g%, **PCV** 25%, **ESR** 32 mm/hr, MCHC—26%; WBC—6000/mm,^{3} N60, E8%, L32%, FBS 66 mg%, DGBs 79 mg%; **Urine**—No bile salts/pigments; S. Bilirubin: , Total—1.4 mg%, Direct 0.66 mg%, SGOT—14u, SGPT—12u; BT—1′ 45″, CT—3′ 45″, PT—25″, S. Fibrinogen 328 mg%, Ultrasonography—Homogenous enlargement of liver and spleen (No definite pathology), PPD corresponding to 25 weeks, Placenta—Total Praevia.

The past history suggestive of a **hereditary haemolytic disease** the patient and her daughter were investigated further.

Hb F—3.2%, Hb A_2—0.8%; Peripheral Smear — Hypochromasia, microspherocytosis macrocytosis, anisocytosis, no sickling; Reticulocytosis 20%. No premature cells; RBC fragility— 100% at 0.4% NaCl concentration; Direct Coombs Test—Negative, Indirect Coombs test—positive (weak).

Daughter

Hb—3.3 g%, MCHC—24%, S. Iron—23 μg%; Hb F—13%, Hb A_2—0.9%, Peripheral Smear —Hypochromasia, microspherocytosis, aniocytosis, poikilocytosis, no sickling; Reticulocytes—6%, No premature cells; RBC Fragility—99% at 0.4% NaCl concentration; Total Iron binding capacity—367 g%; Both the mother and daughter were diagnosed to have congenital hereditary spherocytosis.

Treated with haematinics and folic acid 10 mg and discharged after 4 weeks.

Five regular antenatal visits during which her Hb and liver function tests were monitored.

Admitted at 38 weeks when investigations were repeated Hb—12.5 g%, PVC—36%; Proteins—Total—4.16 g%, Albumin—3.51 g%; S. Bilirubin—Total—3.13 mg%, Direct 1.05 mg%, SGOT—18U, SGPT 3SU; Urine—no bile salts/pigments; Ultrasonography—BPD and FL corresponding to 38 weeks, moderate hydramnious and Placenta—Posterior fundal, grade III. The patient was administered phenobarbitone. 30 mg b.i.d. to stimulate fetal hepatic maturity. Went into labour at 40 weeks gestation. Progressed well cn partogram. Artificial rupture of membranes showed liquor to be dark yellow in colour. Intermittent electronic cardiotocometry resorted to.

Blood kept crossmatched. Active management of the third stage. No post partum haemor-

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