

Is Reversal of Sterilisation Feasible?

A. Kalaichelvi, Swarnalatha Rajenderkumar, R. Premalatha.

Govt. Kilpauk Medical College Hospital, Chennai-10

Summary:

An analysis of 465 women over a period of 9 years from 1989 to 1997 was done. In 396 women second look laparoscopy was performed and tubal patency was 94%. Among 465 women, 253 became pregnant with pregnancy rate of 54.4%. The carry home baby rate is 43%.

Recanalisation success rate is more after Falope ring application 68% than after Pomeroy's technique which is 42%. Incidence of pregnancy rate is most when the recanalisation is done at isthmo-isthmic region (76%). The minimum length of the tube should be more than 6 cm. after recanalisation. When the length of the reconstructed tube is more than 8cm., 82% became pregnant.

The time interval between sterilization and recanalisation is immaterial. However maximum pregnancies occur within one year of recanalisation. Ectopic pregnancy rate is 8%. Abortion rate is 13.8%.

Introduction:

Voluntary Surgical Contraception has been accepted by more young women of low parity. Hence the request for reversal of sterilization is on the rise.

Materials & Methods:

Reversal of sterilization was performed on 465 women at the Microsurgery Department, Kilpauk Medical College Hospital, Chennai, over a period of 9 years from January 1989 to December 1997. In all these women preoperative investigations like husband's seminal analysis, diagnostic hysterolaparoscopy and endometrial biopsy were performed. Out of these 465 women, in 396 women a second look laparoscopy was performed and tubal patency was confirmed in 93.6%. A follow up of these women was done from 1-9 years. Among

465 women, 253 women became pregnant, the pregnancy rate being 54.4%. The carry home baby rate is 42.6%.

Results And Discussion:

Table I
Follow up of 1-9 years

Follow up of 1-9 years	Total Number	%
Total Number of TRA	465	
Total Number of Pregnancies	253	54.4
Carry home babies	198	42.6
Second look laparoscopy	396	
- Patent tubes	371	93.6
- Non patent tubes	25	6.3
Second look not done	69	

Table - II

Age in years	No	%	Parity	No.	%
Below 20	4	0.2%	Para 0	11	2
20-40	407	23	Para I	129	28
25-29	263	57	Para II		
30-35	76	16	& above	325	70
35 and above	18	4			

Analysing the age and parity among 465 women, 57% belong to 25-29 years, 4% were more than 35 years and 0.2% were teenagers. 80% were in the 20-29 years age group. Coming to parity 70% were Para II and above and 2% were Para 0.

Table III
Request for reversal:

Request for reversal of sterilisation	No.	%
One living child	192	41
Loss of all children	213	46
Remarriage	60	13

The reasons for seeking reversal of sterilization was loss of all children in 46%. Even though remarriage as a cause for reversal is a small percentage of 13%, it still is significant.

Table IV: Pregnancy outcome

Pregnancy outcome	No.	%
Live birth	198	78.2
Abortion	35	13.8
Ectopic	20	8

Analysing the pregnancy outcome among the 253 women who conceived 78.2% had live births, 13.8% had abortions and 8% had ectopic pregnancy.

Wallach et al (1983) reported 50% term pregnancy rate in 18 cases of tubal reanastomosis and 11.1% of ectopic pregnancy rate. Hulka & Halm (1988) reported 16 ectopics in 79 women after reversal giving a high incidence of 20.3%.

Table V

Technique of sterilisation	No.	%	Intrauterine pregnancy %	Tubal pregnancy %
Pomeroy	324	70	13.7	17
Laparoscopy	141	30	9.6	68

This table shows that the success rate following reversal of laparoscopic sterilization is more i.e. 68% as compared to 42% following reversal of Pomeroy's

technique. The incidence of ectopic pregnancy is also less only 2% following reversal of laparoscopic sterilization which is 5.2% following reversal of Pomeroy's technique.

Table VI:

Interval Between Sterilisation And Reversal of Sterilisation.

Interval between sterilisation and Recanalisation	No.	%	Intrauterine Pregnancy		Tubal Pregnancy	
			No.	%	No.	%
Below one year	15	3	13	87	1	100
1-2 years	66	14	47	71	1	100
2-5 years	210	45	98	47	1	100
5-10 years	155	33	72	46	1	100
10 years & above	19	5	3	16	1	100

Analysing the relationship between pregnancy outcome and the interval between sterilization and recanalisation, 87% of women became pregnant when recanalisation was done within 1 year of sterilization, the incidence is low 16% when recanalisation was done 10 years after sterilization.

Vasquez (1980) proposed epithelial change after 5 years of occlusion would minimize tubal function and effect success rate of subsequent reversal.

Table VII:

Type of Anastomosis

Type of anastomosis	No.	%	Intrauterine preg.		Tubal preg.	
			Total-253	%	Total-20	%
Isthmo-Isthmic	80	18	61	76.2	1	100
Isthmo-Ampullary	174	37	90	51.7	11	100
Ampullo-Ampullary	165	35	70	42	1	100
Isthmo-Cornual	27	6	11	40.7	2	100
Cuff salpingostomy	19	4	1	5.3	0	0

This table shows the pregnancy outcome in different types of anastomosis. The highest rate of intrauterine pregnancy- 76.2% was seen in women who had isthmo-isthmic anastomosis. In isthmo ampullary anastomosis 51.7% had intrauterine pregnancy and 6.3% had ectopic pregnancy. In ampullo ampullary type 42% had intrauterine pregnancies and 5% had tubal pregnancy. Maximum incidence of ectopic pregnancy 7.4% occurred in isthmo-cornual anastomosis. In cuff salpingostomy only one case of intrauterine pregnancy was reported which ended in an abortion.

Table VIII:

Tubal Length

Tubal length after reversal	No.	%	Intrauterine preg		Tubal pregnancy	
			No	%	No	%
Below 4 cm.	1	0.9				
4-6 cm.	141	30	41	29	1	100
6-8 cm.	265	51	148	55.8	1	100
8 cm. & above.	55	12	44	80	1	100

Table IX : Interval Between Reversal of Sterilisation And Conception

Interval between reanastomosis and conception	No. of preg. Total (253)	Live Total birth (233)		Abortion Total (35)		Ectopic Pregnancies Total (20)	
		No.	%	No.	%	No.	%
6-12 months	104	79	76	17	16.3	8	7.7
13-24 months	100	83	83	13	13	4	4
25-60 months	40	27	67.5	5	12.5	8	20
60 months & above	9	9	100				

Tubal Length

When the reconstructed tubal length was more than 8 cm, the highest intrauterine pregnancy rate of 81.8 cm was reported. When the reconstructed tube was 6-8 cm long 55.8% of women had intrauterine pregnancy and 4.1% had ectopic pregnancy. No pregnancy was reported, when the tubal length was less than 4 cm. in our study. Silber and Cohen (1980) reported no pregnancy was achieved in their 7 patients with reconstructed tubal length of above 4 cm.

Among the pregnant women who had conceived within one year of recanalisation 76% had live births, 16.3% had abortions and 7.7% had ectopic pregnancy. Gomel (1983) reported 69% of intrauterine pregnancies within 6 months of surgery in 118 cases of TRA.

Table X:
Tubal Pregnancy (20 cases)

Type of Reanastomosis	Recanalised tube		Non recanalised tube
	Cases done	Ectopic	
Isthmo-ampullary	174	6	5
isthmo-isthmic	80	1	-
Ampullo-ampullary	165	6	-
Isthmo-cornual	27	2	-

Among 20 ectopic pregnancies reported in the recanalised women, 11 were found in the isthmo-ampullary type of anastomosis. Out of these, 11, 5 were found in the non-recanalised tube. These may have been due to transperitoneal migration of the ovum. The remaining 6 found in the isthmoampullary anastomosis were probably due to luminal disparity. One patient had bilateral isthmo-ampullary anastomosis and had ectopic pregnancy in both the tubes with a full term live birth between ectopics.

Conclusions:

The conclusions drawn from this analysis in our hospital are the following:

1. Best results were obtained after isthmo-isthmic anastomosis.

2. Success rate of recanalisation following laparoscopic sterilization is the highest.
3. Reversal of sterilization done at the isthmic region as per standards of sterilization give the best results.
4. Length of the reconstructed tube should be more than 6 cm. and best results are obtained when the length is more than 8 cm. Vasquez (1980) proposed epithelial change after 5 years of occlusion would minimize tubal function and affect success rate of subsequent reversal.
5. Incidence of ectopic pregnancy is more when there is luminal disparity.
6. Maximum pregnancies are obtained within one year of recanalisation.
7. Pregnancy rate in our analysis is 54.4%.
8. Carry home baby rate in our analysis is 42.6%

If further reversal has to be a success the following standards of sterilization have to be adopted

1. Sterilisation should be done in the isthmic region 2-3 cm. from the cornua.
2. The tube should not be crushed.
3. The tube should not be clamped.
4. Less than 1 cm. of tube should be excised.
5. 1-0 Chromic catgut should be used for sterilization.

We sincerely thank the Dean for having permitted to utilize the hospital statistics.

References

1. Gomel V Microsurgery in female infertility Boston, Little, Brown & Co, 1983, Boston & Toronto
2. Vasquez G Am, J. Obs Gyn. 138: 86, 1980
3. Hulka J. F, Halme J; Obs. Gyn. 159: 769; 1988
4. Wallach Edward F; Manara Louis R; Hsende G; Esther; Fertili Sterili: 39; 609; 1983
5. Silber, S. J. Cohen R. Fertili. Sterili. 33;598;1980.