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Original Research Article

TO DETERMINE THE FACTORS ASSOCIATED WITH SUCCESSFUL RECANALISATION DONE FOR STERILISATION REVERSAL IN THE DEPARTMENT OF OBSTETRICS AND GYNAECOLOGY, S.M.S MEDICAL COLLEGE & ASSOCIATED HOSPITALS, JAIPUR

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Abstract

Background: Female sterilization through tubal ligation is primarily used to permanently prevent a patient from having a spontaneous pregnancy (as opposed to pregnancy via in vitro fertilization) in the future.
Methods: This study was a Descriptive type of observational study conducted at Department of Obstetrics and Gynaecology, SMS medical college and associated hospitals, Jaipur.
Results: Conception rate after tubal recanalisation was more in females with parity 3 (70.6%) as compared to females with parity 2 (55.6%). This differencein success rate of tubal recanalisation in relation to parity was however not found to be statistically significant
Conclusion: The age of the patient, type of sterilization performed and final length of tube had significant impact on the outcome. Thiscould indicate towards proper patient selection and microsurgical skills of surgeons for higher success rate of reversal.
Keywords: Female, sterilisation, laparoscopic.

Introduction:

In India, tubal sterilization is being done from primary health center to the tertiary care centers in the government sector and also at private institutions and nursing homes. According to NFHS(2015-2016) female sterilization accounted for 36% of all methods of family planning used in country, as youngas women in twenties are going for tubal sterilization, probable reasons are desire to limit number of children due to various socioeconomic factors and unawareness & preconceived myths, fears associated with other spacing methods like IUCD.[8,9]Later on, around 10% of those women feel regretted andmany of them due to various reasons loss of only child, loss of male child, desire to have more children, loss of children in natural calamities, remarriageand other socioeconomic factors, want to restore their fertility.[1] Those females have only two options, either opt for artificial reproductive techniques or tubal recanalisation. With booming ART technology many are opting for this option but cost, ability to achieve more than one pregnancy are some of advantages of tubal recanalization surgery.[2]

MATERIAL AND METHODS

TYPE OF STUDY-

This study was a Descriptive type of observational study.

STUDY DESIGN–

The study was conducted with a Prospective design

PLACE OF STUDY–

The study was conducted at Department of Obstetrics and Gynaecology, SMS medical college and associated hospitals, Jaipur.

STUDY DURATION–

The study was conducted from March 2020 till July 2021. This period includes data collection till sample size was achieved and another 2 months for data compilation and analysis and write up of thesis.

STUDY UNIVERSE-

Study universe comprised of all women who had undergone sterilization procedure in the past and attending Gynaecology OPD in Obstetrics and Gyanaecology Department at S.M.S. Medical College, Jaipur,willing to undergo tubal recanalisation for reversal of contraception.

STUDY POPULATION -

All women aged less than or equal to 39 years, who have undergone tubal recanalisation procedure at Obstetrics and

Gyanaecology Department at S.M.S. Medical College, Jaipur, willing to participate in the study and wouldto be available for regular follow up.

INCLUSION CRITERIA

- Women age less than or equal to 39 years.
- Women who have undergone sterilization procedure in the past.
- Opting for tubal recanalisation for reversal of contraception,irrespective of the reason.
- Willing to participate in the study.

EXCLUSION CRITERIA

- Women with ovulatory disturbances.
- Women with pelvic inflammatory disease causing tubal deformities.
- Women with severe endometriosis.
- Women with other causes of infertility.
- Women with medical disorders.

SAMPLE SIZE

Sample size was calculated to be 62 subjects at 95% confidence limit and absolute allowable error of 12% assuming conception rates of 63.3% afterrecanalisation as per findings of *Sandhyarani Behera et al* [29]. So for this study, a minimum of 62 cases of recanalisation were required, which was further extended to 70 cases assuming 10% drop outs

RESULTS

Table 1: Socio-demographic characteristics of study subjects

	Outcome	N	Percentage (out of 70)
Age group(years)	25-29	43	61.4
	30-34	14	20
	35-39	13	18.6
Literacy status	Illiterate	8	11.4
	Primary	15	21.4
	Upto sec	17	24.3
	Sen sec	13	18.6
	Graduate	17	24.3
Religion	Hindu	55	78.6
	Muslim	15	21.4
Residence	Rural	31	44.3
	Urban	39	55.7
Occupation	working	19	27.1
	Housewife	51	72.9

Most of the females who underwent recanalisation belonged to 25-29 years age group (61.4%). Only 18.6% females were aged 35-39 years. Aboutone fourth (24.3%) of females were graduate, while 11.4% were illiterate. Mostof the females were Hindu (78.6%). Females were more from urban areas (55.7%), while 44.3% were from rural areas. Most of the females (72.9%) were housewives, while only 27.1% were working.

Table 2: Outcome in relation to age of study subjects

Age group (years)	Conceived		Not conceived		Total	
	N	%	N	%	N	%
25-29	34	79.1	9	20.9	43	100
30-34	5	35.7	9	64.3	14	100
35-39	5	38.5	8	61.5	13	100
Total	44	62.9	26	37.1	70	100
Chi-square = 12.573 with 2 degrees of freedom; P = 0.002 (S)						

Conception rate after tubal recanalisation was highest in females aged25-29 years (79.1%) as compared to those aged 30-34 years (35.7%) or 35- 39 years (38.5%). This difference was found to be statistically significant (p=0.002). This indicates that success rate after tubal recanalisation is associated with younger age of female.

Table 3: Outcome in relation to literacy status of study subjects

Literacystatus	Conceived		Not conceived		Total	
	N	%	N	%	N	%
Illiterate	6	75	2	25	8	100
Primary	9	60	6	40	15	100
Upto sec	8	47.1	9	52.9	17	100
Sen sec	10	76.9	3	23.1	13	100
Graduate	11	64.7	6	35.3	17	100
Total	44	62.9	26	37.1	70	100
Chi-square = 3.502 with 4 degrees of freedom; P = 0.478 (NS)						

Conception rate after tubal recanalisation was more in females educated up to senior secondary (76.9%) and illiterate females (75%) as compared to females who were graduate (64.7%). This difference in successrate of tubal recanalisation in relation to education status was however not found to be statistically significant (p=0.478)

Table 4: Outcome in relation to occupation of study subjects

Occupation	Conceived		Not conceived		Total	
	N	%	N	%	N	%
Working	12	63.2	7	36.8	19	100
Housewife	32	62.7	19	37.3	51	100
Total	44	62.9	26	37.1	70	100
Chi-square = 0.061 with 1 degree of freedom; P = 0.805 (NS)						

Conception rate after tubal recanalisation was slightly more in workingfemales (63.2%) as compared to housewives (62.7%). This difference in success rate of tubal recanalisation in relation to occupation was however notfound to be statistically significant

Table 5: Outcome in relation to Parity at time of sterilization

Parity	Conceived		Not conceived		Total	
	N	%	N	%	N	%
2	20	55.6	16	44.4	36	100
3	24	70.6	10	29.4	34	100
Total	44	62.9	26	37.1	70	100
Chi-square = 1.110 with 1 degree of freedom; P = 0.292 (NS)						

Conception rate after tubal recanalisation was more in females with parity 3 (70.6%) as compared to females with parity 2 (55.6%). This differencein success rate of tubal recanalisation in relation to parity was however not found to be statistically significant

DISCUSSION

Female sterilization is the most common permanent population controlmethod practiced in the country. Several techniques have been defined to achieve the goal. However, due to changed personal circumstances, many women who undergo sterilization are compelled to seek restoration of fertility. Often such women are referred for assisted reproductive techniques (ART), but they involves financial and emotional cost, are not universally accessible, and chances of favourable outcome are not that significant and may require repeated attempts. Recanalisation surgery may better benefit these women, which requires a deft surgical hand, but does not depend on high cost technology necessary for ART. The results of this reversal surgery however may relate to a number of factors, including the age of the patient, method followed for sterilization, and the procedure performed for reversal. Thepresent study conducted to study those factors associated with successful outcome.

Out of the 70 females who underwent recanalisation, 44 females conceived during the study period, giving a success rate of 62.9%. Out of the

In a similar study**, Vilvapriya S et al (2018)[3]** observed that conceptionrate was higher in younger age group (52.9% in 21-25 years). **Rashmi A. G et al (2019)[4]** found that about 50% of cases conceived, were between the age group of 20 -25 years. Most (84.6%) cases conceived between age group 26-30 years and only 35.7 % of cases conceived between 31-35 years of age group. It shows that chances of successful pregnancy reduced after 30 yearsof age. **Joshua Marlow et al (2020)[5]** found that the average age of patients was 32.3 years (range 26-42 years). **Huawei Shen et al (2020)[6]** found that age of female below 35 years associated with success of FTR.

CONCLUSION:

The age of the patient, type of sterilization performed and final length of tube had significant impact on the outcome. Thiscould indicate towards proper patient selection and microsurgical skills of surgeons for higher success rate of reversal.

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