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Original Research Article

Postpartum sterilization: a five years retrospective study

Mohana Dhanapal*, Kotteswari Palanisamy Sivanandan,
Eswari Sengottian, Praveena Murugesan

Department of Obstetrics and Gynecology, Government Mohan Kumaramangalam Medical College, Tamil Nadu, India

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***Correspondence:**

Dr. Mohana Dhanapal,

E-mail: doctormohana@gmail.com

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ABSTRACT

Background: Female sterilization, which is also called tubal ligation or tubal occlusion, is a surgical procedure which aims at permanent contraception. When female sterilization is performed at the time of birth with caesarean delivery or very soon after vaginal birth, such sterilization is called puerperal or postpartum sterilization. This study is to analyse the puerperal sterilization done in our hospital regarding age, living children, timing of sterilization and complications.

Methods: A retrospective analytical study of 6069 cases of puerperal sterilization performed over a period of 5 years from January 2013 to December 2017.

Results: During the study period, 6069 cases of puerperal sterilization cases were done. Out of which 4714 (77.67%) patients had undergone caesarean tubectomy, 1355 (22.32%) patients had undergone mini-laparotomy. Maximum number of patients was in the age group of 20-29yrs (80.3%). Majority of patients (68.62%) had two living children. Complications were encountered in 32.38% of patients.

Conclusions: The findings in this study showed that the incidence of voluntary surgical contraception is low. Adequate education and counseling will lead to acceptance of the procedure and consequently, a reduction in high maternal mortality from unwanted pregnancies.

Keywords: Caesarean tubectomy, Mini-laparotomy, Mesosalpinx tear

INTRODUCTION

Female sterilization, which is also called tubal ligation or tubal occlusion, is a surgical procedure, which aims at permanent contraception. When female sterilization is performed at the time of birth with caesarean delivery or very soon after vaginal birth, such sterilization is called puerperal or postpartum sterilization.

Female sterilization is usually chosen by those who have completed their family size. Tubal sterilization is also indicated for women in whom a pregnancy would pose a serious risk to the mother following multiple previous caesarean sections, repeat abortions or serious cardiac,

renal or hepatic conditions, or for reasons of grand multiparity.

The important feature of female sterilization is cost effective and require no subsequent follow up. Increased usage of contraception has direct effect on maternal deaths by reducing no. of pregnancies.¹

Female sterilization is a relatively simple procedure that involves permanently blocking the fallopian tube to prevent fertilization. Female sterilization has important role to play in the reduction of high maternal mortality rate in the developing countries. Female sterilization is one of the most common forms of birth control

worldwide being relied upon one in three women of reproductive age.² 1/3rd of pregnancy related deaths in the world could be prevented by the use of safe and effective family planning method. Hence to control the high maternal morbidity and mortality on one hand and the rapid population growth on the other. Provision of adequate health services with special emphasis on family planning is of paramount importance.³

METHODS

It is a retrospective analytical study carried out from January 2013 to December 2017 at Government Mohan Kumaramangalam Medical College and Hospital, Salem, Tamil Nadu, India. Total studied population were 6069.

The case sheets of the study group were collected from MRD section and reviewed in detail regarding age, parity, number of living children, level of education, intraoperative and postoperative complications. The group were categorised into caesarean tubectomy and puerperal sterilization. All puerperal sterilization were done by mini laparotomy by Modified Pomeroy’s Technique. Caesarean tubectomy was also done by Modified Pomeroy’s Technique.

Inclusion criteria

Inclusion criteria were women who undergone sterilization during caesarean section; women who undergone sterilization following vaginal delivery within 7 days of postpartum period.

Exclusion criteria

Exclusion criteria were women who have undergone sterilization after 42 days of delivery; women who have undergone sterilization following an abortion, ectopic pregnancy and following menstruation.

RESULTS

Total no. of deliveries for the study period was 37435, Of which 6069 had undergone sterilization. No. of high order births were 23108. 50 patients had undergone sterilization with one living child. Sterilization coverage for high order birth were only 26.04%. In our study, a total of 6069 patients undergone postpartum sterilization. 1355 patients (22.32%) were undergone postpartum sterilization, 4714 patients (77.67%) were undergone caesarean tubectomy which showed in Table 1.

Table 2 shows the timings of tubectomy. In 2013, 24.31% (282) patients underwent postpartum sterilization and 75.68% (878) patients underwent caesarean tubectomy. In the following years (2014-2017), postpartum sterilization were between 20.1 to 27.11%, caesarean tubectomy were 72.88 to 79.99%.

Table 1: Distribution of patients by sterilization methods.

Tubectomy methods	No.of patients	%
Caesarean tubectomy	4714	77.67
Postpartum sterilization	1355	22.32

Table 2: Total no. of patients who underwent sterilization by different methods in each year.

Year	Caesarean tubectomy	%	Minilap	%	Total	%
2013	878	75.68%	282	24.31%	1160	19.11%
2014	664	72.88%	247	27.11%	911	15.01%
2015	924	79.10%	244	20.89%	1168	19.24%
2016	1123	79.99%	281	20.01%	1404	23.13%
2017	1125	78.89%	301	21.10%	1426	23.49%

Table 3: Age distribution of patients undergone sterilization.

Age	No. of cases	%
20-24	2292	37.76
25-29	2583	42.56
30-34	871	14.35
35-39	279	4.59
40-44	41	0.67
45-49	3	0.04

Table 3 shows an age distribution of the patients. Maximum no. of patients (4875) 80.3% underwent

sterilization between 20-29 years. 1150 patients (18.94%) were in the age group of 30-39years. 44 patients (0.7%) were in the age group of more than 40 years. Regarding no. of living children, majority of patients 4165 (68.62%) who underwent sterilization had two living children. 1576 (25.96%) patients undergone sterilization had three living children. 278 (4.58%) patients had four and above living children. 50 (0.82%) patients had undergone sterilization with one living children. Considering the level of education, 3085 patients (50.83%) who undergone sterilization had primary education. 1181 patients (19.45%) had secondary education. 879 patients (14.48%) had higher studies. 924 patients (15.22%) had not attended their school at all.

Table 4: Complications.

Complications	Caesarean tubectomy	Mini- laparotomy	Total% of complications
Difficulty in reaching the tubes	0.84	0.34	1.18
Mesosalphinx tear and hematoma	0.19	0.45	0.64
Febrile morbidity	9.42	1.12	10.54
Paralytic ileus	6.24	1.44	7.68
Wound infection	7.51	1.10	8.61
Wound gaping	6.10	0.29	6.39
CVT	0.31	-	0.31
Death	0.03	-	0.03

Table 4 shows intraop and postop complications of tubectomy. It was encountered in 32.38% of patients. Of these, 0.64% had mesosalphinx tear and hematoma, 1.18% patients had difficulty in finding the tubes because of intraop adhesions. Of these, febrile morbidity were most common which contributes for 10.54% followed by paralytic ileus in 7.68%, wound infection was 8.61%, wound gaping was 6.39%, CVT was encountered in 0.31% of patients, there was one death (0.03%) due to sepsis. Of patients who had undergone sterilization between 2013-2017, 11 patients had sterilization failure. Out of these, 3 were ruptured ectopic pregnancy, 6 patients were presented for MTP with resterilization, 2 patients were continued the pregnancy.

DISCUSSION

The family planning is one of the pillar of reproductive health which is important for maternal and child health. The total number of high order birth were 23,108. Out of these, only 26.04% of high order births were covered by sterilization. The reason for the low acceptance rate of sterilization were fear of health risk thought to be associated with the procedure, religious factors, desire for the large family size, high infant and childhood mortality. Counselling of prospective clients for female sterilization actually starts at a clinics. Counsellor also talks antenatal health advice, diet advice, warning signs and family planning advice.

FIGO 2010 recommends to avoid female sterilization during caesarean section. But caesarean tubectomy is the preferred method of sterilization in developing countries.⁴ Postpartum tubal ligation is entirely elective. The only risk of delay is subsequent pregnancy. In a study by Thurman et al, women who requests of postpartum tubal ligation and fails to receive it become pregnant within one year at alarming rate of 47% vs 22% for those not requesting ligation.⁵ ACOG states, "Given the consequences of a missed procedure and the limited time frame in which it may be performed, postpartum sterilization should be considered urgent surgical procedure".

In our study out of 6069 patients, 77.67% of patients opted for caesarean tubectomy, 22.32% of patients

underwent sterilization by postpartum mini-laparotomy. Whereas in study by Muthir and Nyango who reported caesarean tubectomy was done in 15.9% of patients, Puerperal sterilization was done for 5.6% of patients.⁶ In a study by Swende et al, caesarean tubectomy was done in 47.4%.⁷ In an another study conducted in Brazil, caesarean tubectomy was done in 70% of patients.⁸

Maximum no. patients (80.3%) underwent sterilization between 20-29 years which is similar to the study by Mahadevappa et al who reported 77.93% were in the age group of 20-29years.⁹ 94.58% (68.62%+ 25.96%) of the patients who underwent sterilization had two or three living children, 0.82% of the patients had one living children. Whereas in a study by Kindan et al, the maximum number of patients were grand multi (85.4%).¹⁰ Most of the patients studied upto primary education (54.12%) and 23.46% of the patients had not educated at all.

All mini-laparotomy were done under spinal anaesthesia. The practice of female sterilization under local anaesthesia has almost disappeared from our centre. Previously 28.24% of cases done under i.v anaesthesia. But now for the past 2 years, we are doing all cases under spinal anaesthesia. For caesarean tubectomy, 99.10% were done under spinal anaesthesia. Only 0.9% were done under GA because of medical complications in pregnancy.

The incidence of wound infection in our study was 8.71% whereas it was 5.5% in a study by Swende and Akinbuwa.¹¹ In our hospital we do only postpartum sterilization by mini laparotomy not by laparoscopic sterilization. In a study by Huber et al, they compared postpartum laparoscopic sterilization, Interval laparoscopic sterilization and postpartum Mini laparotomy. They reported major complications was higher in postpartum Mini laparotomy (0.39%), minor complications like wound infection, UTI were 0.82%. Major complications were blood loss of >500ml, febrile morbidity. Minor complications like wound infection, UTI were more in postpartum Mini laparotomy.¹² In a study by Mule et al who also reported 84.6% of complications were of mini-laparotomy whereas in laparoscopic tubal ligation, complications were only 13.4%.¹³ Wang et al demonstrated that interval and

postpartum laparoscopic sterilization is a safe, simple and quick operation and appears to be superior to postpartum minilaparotomy in terms of complications.¹⁴

CONCLUSION

The findings in this study showed that the incidence of voluntary surgical contraception is low. Among the reasons advanced for this low acceptance rate of sterilization are misconceptions, fears of a variety of health risk thought to be associated with the procedure. Other limitations include cultural and religious factors, great desire for a large family size. Adequate education and counseling will lead to acceptance of the procedure and consequently, a reduction in high maternal mortality from unwanted pregnancies. Health workers are efficient sources of information about the procedure. Thus, utilization of health education and mobilization programs will greatly improve acceptance and clear any myths and fears about the procedure.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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