

# A RETROSPECTIVE STUDY OF 16000 CASES OF LAPROSCOPIC FEMALE STERILIZATION BY USING SINGLE INFRAUMBILICAL MIDLINE INCISION

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## Surgery

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### Abstract:

The sterilization procedure should not only be safe and readily accessible but also have high efficacy rate, cost-effective, be culturally and personally acceptable. The present study was done to know the trends, incidence and immediate complications of methods of female sterilizations performed at our institute.

**Material and methodology:** In our study, a total of 16000 patients had undergone sterilization procedure in camp surgery at district hospital Chhindwara and Community health centres. In our study we used single infraumbilical midline transverse incision surgery approximately 8 mm to 10mm sized. The cases were done by Laparoscopic sterilization, Falope rings were used.

**Results:** In our study, we have done 16000 cases. All cases of Laparoscopic sterilization done by using falope rings. The number of Laparoscopic sterilization cases was only 360 in 2011 and it has subsequently increased to a maximum in 2017-18. There is an increasing trend towards the acceptance of Laparoscopic sterilization in our study, there were no Procedure Related Complications, Wound Infection only 0.125% cases, Bleeding only in 0.0625%, Peritonitis only in 0.00625 % cases and no Death reported in our study. Failure rate of Laparoscopic female sterilization was only 0.0625%.

**Conclusion:** Female sterilization should be individualized based on the timing, place and surgeons experience. Laparoscopic sterilization has very few complication and failure rate, therefore we recommend Laparoscopic procedure as very good method for female sterilization.

**Key words:** Laparoscopy, Falope rings, sterilization.

### Introduction

Female sterilization is one of the best and effective methods of contraception for women who have completed their family. Tubectomy during caesarean operation and minilaparotomy are popular methods in developing countries whereas laparoscopic sterilization and hysteroscopic tubal occlusion are the preferred methods in developed countries. Female sterilization can be carried out, at any of the following time, postpartum sterilization – done within seven days of delivery, caesarean tubal

ligation – the 2 procedures are combined, interval ligation done six weeks after delivery, postabortal ligation -immediately after evacuation of uterus after induced or incomplete abortion, gynaecological ligation-combined with gynaecological surgeries such as myomectomy, cystectomy or fothergill's operation. Female sterilization may be performed in several ways such as minilaparotomy, laparoscopic sterilization and hysteroscopic methods. In India, postpartum sterilization is usually done by minilaparotomy, whereas interval and postabortal are usually done by laparoscopy.

Tubal ligation done by minilaparotomy is a simple procedure, but requires large incision and is associated with more wound infections, postoperative pain and longer hospitalization, whereas laparoscopic sterilization needs smaller incisions, shorter hospital stays, but needs well trained gynaecologists/surgeons with expensive, high maintenance equipment<sup>1</sup>.

The World Health Organisation’s (WHO) Task Force on Female Sterilization stated: The ideal female sterilization would involve a simple, easily learned, one-time procedure that could be accomplished under local anaesthesia and involve a tubal occlusion technique that caused minimum damage. The sterilization procedure should not only be safe and readily accessible but also have high efficacy rate, cost-effective, be culturally and personally acceptable. The task force concluded that both laparoscopy and minilaparotomy were close to meeting the required criteria listed above according to the data of a large multicentre prospective study.<sup>2</sup>

The present study was done to know the trends, incidence and immediate complications of methods and failure rate of female sterilizations performed at our institute.

**Materials and Methods**

This is a retrospective analytical study conducted at district hospital Chhindwara, Madhyapradesh from April 2011 to April 2018. The case files of all the patients who underwent sterilization were taken from the medical records section and reviewed in detail. The cases were done by Laparoscopic sterilization, For Laparoscopic sterilization, Falope rings were used. It was day care procedure, All patients were discharge on the same of surgery. Data was analysed by Karl Pearson’s correlation co-efficient method and Chi-Square test. The p-value < 0.05 was considered significant.

In our study, a total of 16000 patients had undergone sterilization procedure in camp surgery at Distret hospital Chhindwara and Community health centres.

In our study we used a single infraumbilical midline incisionsurgery approximately 8 mm to 10mm sized.

**Observations & Results**

Following were the results observed and they were tabulated.

The age distribution of patients. Maximum number of patients 8000 (50% cases) underwent sterilization between the age group of 20-29 years.

**Table shows Age wise distribution of patients undergoing sterilization**

Age Years	No of cases	%
24 – 29 y	4000	25%
30 - 34 y	8000	50%
35-39 y	3200	20
40-44	800	5
	16000	

**Table shows total number of patients who underwent Laproscopic sterilization in various years**

Year	Lap
2011	360
2012	1100
2013	1900
2014	2200
2015	2790
2016	2950
2017	3050
2018 till April	1650
Total	16000 cases

This shows there was increasing trend of Laproscopic female sterilization

**Table-Shows distribution of patients based on timing of sterilization post partum period**

Months	No cases	%
6 weeks to 9 months	12800	80 %
10 months to 18 months	2400	15%
>1.5 years	800	5%

Complications that were encountered in Laproscopic methods of sterilization. The procedure related complications wound infections (0.5%), bleeding (0.025%) and trocar injury to uterine fundus (nil) in the Laparoscopic sterilization, one patient had developed peritonitis postoperatively, later on conservatively treated with antibiotics. No deaths were reported in our study.

**Tables shows complications**

Complications		Lap
Procedure Related Complications	Nil	Nil
Wound Infection	20 cases	0.125%
Bleeding	10	0.0625%
Peritonitis	1	0.00625%
Death	Nil	Nil

**Duration of surgery - table shows duration of surgery**

Duration of surgery	No of cases	%
2 to 3 min	11200 cases	70%
3 to 4 min	4000 cases	25%
5 to 6 min	800 cases	5 %

**Clinical pictures of Laproscopic sterilization**



**Laprosopic Instruments**

**Procedure**



**Procedure**

**Midline infra umblical transverse incision**

**Discussion**

Female sterilization is the most requested contraceptive method worldwide and one of the most frequently performed elective, intra-abdominal surgical procedure performed in reproductive-age women. The technique, timing and setting of the operation have progressively changed since the early 1970's and the advent of minimally invasive surgery. The most appropriate method of female sterilization in a particular family is often determined by local situations and constraints. According to Cochrane review, the decision which method to choose should be a multifactorial one, depending on the setting, the surgeons experience and the woman's preference<sup>2</sup>.

Laparoscopy is a preferred method in many developed country settings. FIGO 2010 recommends avoiding female sterilization during caesarean operations<sup>3</sup>.

However, caesarean tubectomy is one of the preferred method of sterilization in developing countries. In developing countries, age at marriage and childbearing, is earlier than in developed countries. After completion of family at an early age, women look forward for a permanent contraception, rather than temporary methods of contraception which need repeated followup and care.

In our study, out of 16000 patients, there is an increasing trend towards Laproscopic sterilization. All cases of laparoscopic sterilization done with falope rings. The number of laparoscopic sterilization cases was only 360 in 2011 and it has subsequently increased to a maximum in 2018. There is an increasing trend towards the acceptance of laparoscopic sterilization in our study. In this study, All patients underwent interval sterilization. This clearly shows the preference of laparoscopic sterilization as a method of sterilization during interval periods. This is statistically significant.

In our study there were no Procedure Related Complications, Wound Infection only 0.125% cases, Bleeding only in 0.0625%, Peritonitis only in 0.00625% cases and no Death reported in our study. According to Cochrane review, major morbidity seems to be a rare outcome for laparoscopy and minilaparotomy<sup>2</sup>. There were 11 procedure related complications in the laparoscopic sterilization. There was one case of trocar injury to uterine fundus, which was repaired by laparotomy. There was 5 cases of mesosalpinx tears, out of which 4 underwent laparotomy to control bleeding and one mesosalpinx bleeding was controlled with bipolar cautery. Surgical emphysema was seen in 5 patients who were all managed conservatively. There was only one procedure related complication in patients, who underwent caesarean tubectomy. That patient developed a haematoma in the mesosalpinx (which had tortuous, engorged vessels) which was evacuated and bleeding vessels ligated. Hence in our study the procedure related complications were more in laparoscopic sterilization, which was statistically significant. Michael Klarke et al., showed 1.4% of patients developed mesosalpinx tear during laparoscopic sterilization and required laparotomy to control bleeding from mesosalpinx tear<sup>4</sup>.

In our study failure rate of laproscopic female sterilization was only 0.0625% cases. Mumford SD et al., in their study compared mini laparotomy and laparoscopic tubectomy for tubal sterilization from 23 countries. Number of cases who underwent laparoscopy with occlusion by the tubal ring was 7053, and mini laparotomy with occlusion by the modified Pomeroy technique was 5081 cases. The failure rate was 0.60% for laparoscopy and 0.30 per 100 women for mini laparotomy<sup>5</sup>.

Kulier R et al., reviewed 15 RCT's of techniques for tubal sterilization, involving 13,209 women of childbearing age, where no deaths reported with any method, and major and minor morbidity were rare<sup>6</sup>. Two weeks after interval sterilization at a camp in the central Indian state of Chhattisgarh, 13 women died. The postmortem examinations of seven of the women indicated towards septicaemia, which can result from poor hygiene during surgery<sup>7</sup>. Strauss LT et al., conducted a global mail survey of 4642 physicians, and received responses from 1298 physicians (28%) in 80 countries. Fifty-five sterilization-associated deaths had occurred from January 1, 1980 to June 30, 1982. Infection, anesthetic complications, and hemorrhage were the most frequently reported causes of death<sup>8</sup>.

Our study shows that Laparoscopic sterilization is the preferred method in the interval period.

## Conclusion

An increasing trend in laparoscopic sterilization is seen in our study. Female sterilization should be individualized based on the timing, place and surgeons experience.. Laparoscopic sterilization has very few complication and failure rate, therefore we we recommend laproscopic procedure as very good method for female sterilization.

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