


Original Research Article

# Double puncture laparoscopy sterilization using falope rings in a camp setup

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## Abstract

**Background:** Aim of the present study was to assess the technical difficulties and complications of double puncture laparoscopy in camp setup in urban areas.

**Materials and methods:** Laproscopic sterilization camps are held in the urban area (Hyderabad) from April 2014 to March 2016 a total of 7112 cases were done. The technical difficulties and complications are analyzed.

**Results:** Failure to do the operation was technical failure mainly due to adhesion followed by pelvic inflammatory disease. The most common complication encountered was bleeding from the port site and infection at the port site. No major morbidity or mortality was reported.

**Conclusion:** Laproscopic sterilization by Falope rings is very popular as it has very few complications and large number of patients can be operated in a day by an experienced laproscopic surgeon and safe alternative to modified Pomeroy's technique.

## Key words

Double puncture laparoscopy, Complication, Sterilization camp.

## Introduction

India is the second most populous country in the world with a growth rate of 1.74%. India has passed 1 billion benchmark in 2000 and 1.1 billion in 2009 and projected population is 1.8 billion by 2050 [1]. In this context, DPL camps offer an excellent opportunity to control the population growth rate by conducting DPL

camps for women who need permanent sterilization with minimal complications [2, 3]. Tubal ligation can be done in the post-partum period during LSCS or any time remote abortion or pregnancy (referred to as interval sterilization). As modified Pomeroy's technique is difficult in cases of previous LSCS because of adhesions, double puncture laproscopic surgery is an excellent alternative [4]. The advantage of

DPL compared to mini-camp is that it that is highly acceptable to patients as they are discharged on the same day and they can resume their activities immediately.

## Materials and methods

Laparoscopic sterilization was done in primary health centers from April 2014 to March 2016 and a total of 7112 cases were done. A careful account of menstrual medical and obstetric history was noted for all cases. A thorough general examination was done to rule out any contraindications for laparoscopic surgery. A Haemoglobin and urine analysis, HBSAQ and HIV status was evaluated. All cases were registered and an informed consent taken. The patients were starved overnight and were given TT, antibiotic and Inj. Fortwin and Phenergan half an hour before the surgery. Double puncture operative technique was used and Falope rings applied after identifying the Fallopian tubes. . After an uneventful operation, the patients were discharged on the same day in the evening. The patients reported to the PHC in case of any complications.

## Results

A total of 7112 cases were done during a period of 3 years from April 2014 to march 2016. Year wise distribution of cases was as per **Table – 1**. Age distribution was as per **Table – 2**. Risk factors were as per **Table – 3**.

**Table – 1:** Year wise distribution of cases.

Year	No. of camps	No. of cases
2014	52	2178
2015	62	2560
2016	55	2374

**Table – 2:** Age distribution.

Age (Years)	2014	2015	2016
20-25	745 (34.1%)	1009 (39.4%)	897 (37.8%)
25-30	1259 (57.8%)	1290 (50.4%)	1244 (52.4%)
>30	177 (8.1%)	261 (10.2%)	233 (9.8%)

**Table – 3:** Risk factors.

Risk Factors	2014	2015	2016
Previous LSCS	914 (42%)	1111 (43.4%)	963 (40.6%)
Previous failed Tubectomy	7	8	6

The main reason for technical failure was adhesions because of previous LSCS followed by pelvic inflammatory disease. One patient developed convulsion immediately after the surgery and 3cases could not be done because of obesity (**Table – 4**). Complications were as per **Table – 5**.

**Table – 4:** Technical failure.

Reason	No	%
Adhesions because of previous LSCS	14	0.196
Pelvic inflammatory disease	12	0.168
Convulsions	1	0.014
Obesity	3	0.42

**Table – 5:** Complications.

Complications	No	%
Bleeding from port site	75	1.05
Infection of the port site	46	0.646
Omental prolapse (immediate)	8	0.11
Bleeding from the tube because of transection	12	0.16
Surgical emphysema	7	0.09
Incisional hernia	Nil	Nil

## Discussion

The falope ring sterilization technique was introduced in 1973 at Michael Rees Hospital. The procedure is relatively simple with less operative time and less complications in the hands of an experienced Laparoscopic surgeon [5, 6]. The main reason for technical failure is adhesions. The number of cases of previous LSCS is high 45% when compared to other studies by Dr. Chandhra prabha [7] which was around 17.5% in urban area.

The reason could be some cases were operated by pomeroys technique in the immediate post

natal period by the PHC Doctors leaving the previous LSCS cases for the DPL camp.

Another important reason was pelvic inflammatory disease. In these cases it was not feasible to apply the rings because of inflammation and oedema. If applied it lead to the transection of the tube and bleeding from the site. If the tube is transected, falope rings were applied to the proximal and distal ends of the tube and the bleeding controlled [8].

The failure rate in the study conducted by Chandrababha, et al. [7] is 0.13 %. Mean age of patients undergoing the procedure was 26 years. The important risk factor was previous LSCS and obesity.

Mhatre PN, et al. [9] and Bhatt RV [10] in their study, the average age undergoing sterilization was 30 years and average parity was 3.95% of patients undergoing sterilization at camps were interval cases and the rest were following first trimester abortions. The mean stay in the camp was half a day. About 1% required overnight stay. There were 3 failures out of 5584 (0.05%). 3 patients had pelvic adhesions and 2 had gross obesity making sterilization difficult which was however carried out in all cases.

In the present study adhesions were found in 14 (0.196) cases where falope rings could not be applied in these cases the adhesions were so dense, the medial part of the fallopian tube could not be visualized. The failure rate is high (0.196) when compared to the Chandrababha, et al. which was (0.13%) [7].

This can be explained by the high LSCS rate 45% when compared to the Chandrababha study [7], which was only 17.5%.

In cases of PID (0.168) 4 cases had bilateral hydrosalpinx for which application of rings was not attempted. In other cases the tube was fibrosed and friable, due to which there was transection of the tube and bleeding, which was controlled by applying falope rings.

The most common complication was bleeding from the port site, which needed simple suturing. In one case there was bleeding from the second port which was controlled by taking a deep stitch. Next common complication was infection of the port site which responded to the antibiotics. Immediate omental prolapse (8 cases) occurred mostly in post natal cases with weak abdominal wall, which was reduced and stitch applied. Bleeding from the transected tube (12 cases), because of PID, was controlled by applying falope rings. Surgical emphysema occurred in 7 cases, where observation sufficed. There was no case of incisional hernia, trauma to the bowel, bladder. Mortality rate is nil.

## Conclusion

Double puncture laparoscopic sterilization by falope rings in a camp set up is effective alternative to mini lap. It has the advantage of minimal complications, can be done on a large number of patients in a single day and the patient can be discharged on the same day. Disadvantage of DPL is cost of the equipment and the pain, the patient experiences while applying the rings. This pain can be minimized by spraying 15 ml of 1% xylocaine on to the tubes. This needs to be adopted by more states to control the population growth rate.

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