Original Research Article

Prospective study of two techniques of female tubal ligation, laproscopic method vs minilap method at tertiary care center

Anita Pawar*, Swapnil Shelake**, Swapna Kadam***

*Assistant Professor, **Sr. Resident, ***Assistant Professor, Department of Obstetrics and Gynecology, Government Medical College, Latur, Maharashtra, INDIA.
Email:dranita1983@gmail.com

Abstract

Objective: To compare the postoperative recovery of Laproscopic Tubal ligation method (Group A-LTL) with Minilap Tubal ligation method (Group B –MTL). **Methods:** Prospective observational study of events during the operation, post-operatively and comultiplications with sample size of85 for Group A and98 for Group B **Results:** Most of the women were between 26to 30 years and opted for sterilization with two children in both the groups. More congenital anomalies were observed in LTL cases (Co-incidental finding). Intraoperative time reqired is less in LTL group than minilap cases ($p<0.001$).Postoperative duration of analgesia required ,postoperative stay and duration of hospital stay is significantly less in LTL group($p<0.001$) than minilap group. More post-operative pain required analgesics for a longer period and surgical site infection was seen in MTL.

Key Words: Tubal ligation (TL), Laparoscopic Tubal ligation method(LTL), Minilap Tuballigation(MTL) method, Postoperative recovery, Complications.

***Address for Correspondence:**
Dr.Anita Pawar, Assistant Professor, Department of Obstetrics and Gynecology, Government Medical College, Latur, Maharashtra, INDIA.
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INTRODUCTION

Female sterilization is the permanent method of contraception. It is also one of the most commonly used method of contraception overall India/world. In India Population explosion is the one of the major health problem. Hence, there is need of birth control for limiting the family size at a personal level and for the control of population at national level. It is one of the most frequently performed elective, intra-abdominal surgical procedure in reproductive-age women. Even though considered as simple and safe procedure, complications do occur including death. National Family Planning Programme started in India since 1956, sterilization was done by open tubectomy method. Laparoscopic tubal ligation was performed in India by early 1970s, then became popular. TL can be done at any convenient time to the client. Post-natal TL is done within one week of delivery, when the woman is already hospitalized. Interval TL is done when the woman is not pregnant or any time six weeks after delivery. It can be combined with caesarean section and abortion. Interval TL are mostly performed by laproscopic method. Post-partum or postnatal sterilization is done by minilap method– Pomeroy technique.

MATERIALS AND METHODS

A prospective Observational study was carried out, over a period of two years from May 2016 to May 2018 at tertiary level care center of Government Medical college, Latur, Maharashtra, India. Confounding factors like age, parity and general condition were matched. The criteria noted are Age, Parity, residence, Intraoperative events,

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Post-operative events, requirement of analgesics, Duration of hospital stay, Client satisfaction. All of them were followed up to two weeks after surgery.

Exclusion Criteria: Associated Medical Disorders, Postnatal cases, post abortion cases.

Inclusion Criteria: Only Interval TL cases were included.

Interval TL

- Six weeks after delivery
- Regularly menstruating during the follicular phase of the menstrual cycle
- Irrespective of the cycle of menstruation when there is a history of abstinence or use of any temporary contraceptive method.
- If the woman comes three months after delivery for TL during lactational amenorrhoea, they were given progesterone withdrawal and taken up for surgery after withdrawal bleeding to rule out pregnancy.

All clients were subjected for general examination, vital data recording (pulse rate, temperature, respiratory rate, blood pressure and heart and lungs were examined), per abdomen, per speculum and vaginal examination. Medical disorder were ruled out. Mandatory tests done were HB%, urine for albumin and sugar, BT/CT(Bleeding test/clotting test). Ultrasound examination, and urine for pregnancy test and other tests were done wherever necessary. Haemoglobin of 8 gms was taken as mandatory. Reaffirmed their willingness for undergoing permanent contraception, counselling regarding the procedure and its consequences were explained.

RESULTS

In both the groups, maximum no. of surgeries were done in the age group of 26–30 years.

Table 1: Table showing Age-Wise Distribution

Age	LTL	MTL
22 – 25	37 (75.2)	40 (64.2)
26 – 30	38 (18.1)	49 (22.8)
31 – 35	9 (5.4)	7 (11.8)
>35	1 (1.1)	2 (1.0)
Total	**85**	**98**

Maximum clients preferred only two children.

Table 2: Table showing Parity-Wise Distribution

Age	LTL	MTL
P1	1(6.4)	0
P2	59(57.3)	60(62.9)
P3	24(34.3)	29(23.5)
P4	1(6.4)	5(11.8)
>P4	0	4(0.5)
Total	**85**	**98**

Table 3: Intra-Operative Findings and Complications

Residence	LTL	MTL
Urban area	45	41
Rural area	40	57

Intraoperative findings showed Coincidentally, Mullerian anomalies, other pelvic masses were observed more during LTL.

Table 3: Intra-Operative Findings and Complications Post-operative pain lasted longer in MTL group and surgical site infection were seen more in MTL group

Intraoperative Findings	LTL	MTL
Duration of Surgery	5-10 mins	15 – 20 mins
Intraoperative complication-		
Injury to Mesosalpinx	2	1
Uterine perforation	0	0
Injury to Viscera		
-Bladder	0	1
-Intestine	0	0
Incidental Pathology Noted		
Ovarian cysts	5	2
Hydrosal- pinx	2	0
Congenital Anomalies	2	0

Table 4: Post-Operative Complications

Duration of Post-Operative	LTL	MTL
Duration of Analgesics required	24-48 hrs	3– 4 days
Surgical Site Infection	0	5
Omental Prolapse	-	-
Duration of Hospital Stay	24 hrs	3-4 days

DISCUSSION

Of the many methods of female sterilization operations available, minilap tubal ligation (MTL) and laproscopic tubal ligation(LTL) operations have stood the test of time and most frequently done in the present times. Other methods namely hysteroscopic tubal occlusions take three months to be effective and are irreversible. Clients need backup contraception for three months and require to confirm tubal block by hysterosalpingogram. Electrocoagulation of tubes through laparoscopy has the danger of visceral burns and future reversal if needed becomes difficult. Vaginal methods are obsolete nowadays for their high morbidity. The old method of MTL in the postnatal period had stood the test of time and is still valued as the best with low failure rates. Modified Pomeroy technique is used in the present study, which involves excision of the mid portion of the tube after ligating the tube. The failure of this technique is 1–4 for 1000 cases.[1]A trained MBBS doctor registered under Medical Council of India is eligible to do this surgery. Falope (Silastic) rings are used to occlude of midportion of fallopian tubes in LTL. Only gynaecologists or surgeons with MS degree trained in laparoscopy should do it and such facility is available mostly in urban areas.

In the agrarian based Indian Scenario where 70% of eligible couples come from rural background and where specialist services are minimal, minilap (MTL) still holds promise. When compared to laparoscopic tubal ligation, minilap has certain disadvantages. The incision is longer and more postoperative morbidity. Longer exposure of the peritoneal cavity to the exterior may favour microbial invasion and infection. In a study done at Bangladesh, discharge from wound and non-healed wound were 7.7% and 3.3%.[2]Direct handling of the tissues manually in Minilap Tubal ligation leads to post-operative infection as well as contributes to post-operative pain. The above mentioned study from Bangladesh reports pain in the lower abdomen 28.8% and fever in 8.8%. Duration of hospital stay is longer in our study for minilap cases. In comparison, laparoscopic tubal ligation technique (LTL) is a quicker method and hospital stay is shorter, less than a day. It is an instrumental tubal ligation and therefore handling of tissues is minimal to none. Duration of surgery is less. Essential information from Gupte Hospital states that clients undergoing laparoscopic sterilization can be discharged within 24 hours, causes minimal postop pain and faster recovery and resumption to normal activity.[3]The need for attendants is less in laparoscopy as the stay is very short, a day care surgery. Regarding failure of laparoscopic sterilization, reports ten year life table cumulative probability of pregnancy per 1000 procedures, as 17.7 in Falope ring application by laparoscopy,that is 1.77%.The advantages of laparoscopic sterilization are mentioned in the following study.[6] Laparoscopy (LTL) is the most popular tubectomy method in the non-pregnant women (Interval tubectomy).[5]In addition to small incision, a panoramic view of the peritoneal cavity allows for detecting other pathology like ovarian masses missing IUCDs and provides for managing the same by extending the surgery.Client satisfaction is good and most suitable for working women with tight schedules. Can be a weekend surgery and back to work without leave of absence. Reversal of laparoscopic tubectomy with restoration of tubal patency is very good. (Essential information from Gupte Hospital)[3].2The disadvantages are need for general anaesthesia in some cases followed by anaesthetic complications and expertise, which has a long learning curve. Only gynaecologists or surgeons with MS degree, trained in laparoscopy should do it and such facility is available mostly in urban areas. According to Berek and Novak's Gynaecology Fourteenth Edition, Page No. 292, pregnancy rates for tubal ring: 1.7 per 1000 women[4].1 Other complications exclusive for DPLS is omental prolapse, though it is very minor in nature and can easily be managed. Visceral injuries while inserting the needle or scope, air embolism, pneumothorax may be theoretical complications.

CONCLUSION

In conclusion, the present study clearly shows LTL is more advantageous over MTL (Minilap Tubectomy) and is recommended for all non-pregnant tubal ligations (Interval).Though, initial investment in laproscopic instruments is costly over minilap, but in long term it is very economical method.In developing countries like India, where still government hospital bears the maximum burden of tubectomy cases, Laproscopic tubal ligation is very useful method over minilap as recovery is fast with minimal complications and less bed occupancy rate.

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