Pregnancy After Tuboplasty As A Recanalization Procedure Following Tubal Ligation

Sohail Mahmood Ch,[1]* Sana Ujala, [1] Usman Mehmood [1]

ABSTRACT

Objective — *To determine the rate of pregnancy in patients with recanalization by tuboplasty after tubal ligation.*

Study design — *Descriptive case series.*

Place & Duration of study — *Bahawal Victoria Hospital / Quaid-e-Azam Medical College Bahawalpur, from January 2008 to December 2017.*

Methodology — *This study included all patients who underwent tuboplasty after tubal ligation. During the study period 150 patients requested for reversal of tubal ligation via tuboplasty, out of whom 29 were included found most suitable for this procedure. Tuboplasty was done via open abdominal approach. Patients were followed up for one year to observe the pregnancy rate in this cohort of patients.*

Results — *Twenty nine patients underwent tuboplasty of whom 3(10.34%) were lost to follow up two months after surgery. Twenty (76.9%) women conceived in this series. Six (23.07%) patients did not conceive even after one year of tuboplasty. Hysterosalpingography (HSG) was then performed on these six patients. Three (50%) had bilaterally patent tubes, 2 (33.33%) had unilateral occlusion of fallopian tubes while 1 (16.6%) had bilateral tubal occlusion on HSG.*

Conclusions — *Success rate of pregnancy after tuboplasty in women who underwent bilateral tubal ligation was good if most suitable candidates were selected and an effective technique was used for tubal recanalization. It is an alternative to ICSI (Intra-cytoplasmic Sperm Injection) and IVF (In-vitro Fertilization) on account of lower cost and lack of religious conflicts.*

Key words — *Bilateral tubal ligation, Tuboplasty, Pregnancy rate.*

INTRODUCTION:

Bilateral tubal ligation (BTL) is a widely used method of contraception world-wide. It is a permanent method of sterilization.[1] A thorough counseling of the woman and her partner should be done whenever a couple opts for this method of contraception. A detailed counseling of the couple will prevent any regret in future. Woman should keep in mind the future request for BTL reversal in case the life circumstances changes, as in case of re-marriage, early neonatal death, infantile death or death of a child / children due to some other cause.[2]

Bilateral tubal ligation is done free of cost in Pakistan as a part of family planning services. It is most commonly performed during cesarean section in women who have completed their families.[3] In some females, it is done with an interval of 6 weeks after child birth. There are various methods of tubal ligation. It can be done laparoscopically as well as by laparotomy. During laparotomy Pomeroy's or Modified

[1] Department of Obstetrics & Gynaecology, Quaid-e-Azam Medical College, Bahawal Victoria Hospital / Civil Hospital Bahawalpur

Correspondence:
Dr. Sohail Mahmood Ch.[1]*
Department of Obstetrics & Gynaecology Quaid-e-Azam Medical College, Bahawal Victoria Hospital / Civil Hospital Bahawalpur
E mail: drsohailch@hotmail.com

Pomeroy's methods are most commonly employed. This is an important issue in gynecologic practice which has not been reported widely. This study was conducted to present our experience of tuboplasty and documenting its success rate.

METHODOLOGY:

This descriptive case series included all patients who were managed from January 2008 to December 2017 in the Departments of Bahawal Victoria Hospital Bahawalpur. During the study period, 150 patients requested for tuboplasty due to various changes in the life of women who previously opted for and underwent bilateral tubal ligation. Following a thorough history, examination and investigations, the couples were counseled and the women most suitable for tuboplasty were selected. Inclusion criteria was regular menstrual cycles, tubal ligation done by Pomeroy's and modified Pomeroy's method, weight <75 kg, age <37 year, mobile pelvic viscera on bimanual examination, day one FSH level <10mIU/L, normal semen report of husband and on HSG, portion of the remaining tubal length sufficient in length. Women with irregular menstruation were excluded.

During tuboplasy a cervical catheter was passed in lithotomy position just before surgery. Under general anesthesia, patient was put in supine position, painted and draped. Abdomen opened by Pfannenstiel's incision. Methylene blue dye was injected via cervical catheter to outline the medial portion of the tubes and to localize the site of occlusion. The occluded portion of the tube was then lifted up with an Allis' forceps and excised with a scalpel till the lumen of the tube was visible. The cut ends of the tube were then stitched together with polypropylene 4-0 suture. Same procedure was repeated on the opposite tube. After successful tubal repair, patency of both tubes was confirmed by injection of methylene blue dye through the cervical catheter. Hemostasis was secured and abdomen incision closed.

Injection cephradine and metronidazole 500mg I/V 8 hourly were given. Adequate postoperative analgesia was ensured. Patients were discharged on 3rd postoperative day on antibiotics and pain killers and called for 1st follow-up on 10th postoperative day. Next follow up was at two months after surgery. HSG was performed to confirm tubal patency at this visit. Couples were allowed to have unprotected sexual intercourse three months after surgery. Women who conceived after tuboplasty were registered in the antenatal clinic for regular antenatal checkups while those who failed to conceive even after one year of tuboplasty were called for follow up and HSG was done again to check the patency of their fallopian tubes.

RESULTS:

Twenty-nine patients were selected for tuboplasty. All had bilaterally patent fallopian tubes two months after surgery which was confirmed by HSG. Three (10.34%) patients were lost to follow up after two months after surgery. Remaining 26 women were followed up for one year. Twenty of these conceived while 6 (23.07%) failed to conceive even after one year of tuboplasty. HSG was again performed on these six patients after an year of surgery. Three (50%) of these had bilaterally patent tubes, 2 (33.33%) had unilateral occlusion while 1 (16.66%) had bilateral occlusion of fallopian tubes (table I).

DISCUSSION:

Tuboplasty is the procedure by which recanalization of the fallopian tubes is done after tubal ligation. This can also be done by laparoscopy as well as by laparotomy. Tuboplasty via laparotomy route is the preferred one. The ends of the occluded portion of the tube are removed and the healthy tissues are stitched together. Microsurgical sutures (polypropylene 4-0) are used for tubal repair. Successful tuboplasty and subsequent pregnancy rates depend on many factors like age of the patient, hormonal status (FSH & LH) of the patient, length

Table I: Outcome of Tuboplasty

Description	Number (n)	Percentage (%)
Total	29	100%
Lost follow up in 2 months	3	10.34%
Conceived	20	76.9%
Did not conceive Both tubes patent Unilateral tubal occlusion Bilateral tubal occlusion	6 3 2 1	23.07%

of the proximal and distal portions of the remaining healthy tube, regularity of the menstrual cycle, weight of the patient, mobility of the pelvic viscera (in PID or endometriosis, the mobility of the pelvic viscera will be restricted), method used for tubal ligation and husband's semen analysis report.[4] A complete workup of the couple is needed for proper counseling and successful tuboplasty.[5] A explicit inclusion criteria was developed for this study so as to ensure right selection of the woman to be subjected to tuboplasty.

In our study, the success rate of reversal surgery in achieving pregnancy was 76.9%. Various studies on microsurgical reversal of tubal ligation reported delivery rates ranging from 50% to 87%.[2] During reproductive life, many women particularly the ones with inadequate counseling regarding BTL as a permanent method of sterilization, would need and request for reversal of tubal ligation.[4] There have been many reasons for this. Fetal demise or death of one or more child have been the most commonly observed reasons. Death of a male child is found to be the commonest reason for reversal of tubal ligation.[3] Young females are more likely to regret following tubal ligation and a consistent inverse relationship has been found between the woman's age at the time of sterilization and their likelihood of regret.[6,7]

Reversal of tubal ligation can be achieved with tuboplasty. It involves recanalization of fallopian tubes using microsurgical technique. Patient selection and meticulous surgical technique are the key factors in determining pregnancy rates.[8,9] Surgical reversal of tubal ligation by tuboplasty is considered superior to ICSI (Intra-cytoplasmic sperm injection) and IVF (In-vitro fertilization) particularly in young women <37 years of age.[10] Tuboplasty is cost-effective and also free of various religious conflicts when compared to ICSI and IVF. It is recommended that tubal occlusion should be preferably be done with Fallope rings or with modified Pomeroy's method, so that adequate length of the medial and lateral portions of the tube is left, especially in cases where the need for tuboplasty arises.

CONCLUSIONS:

The success rate of tuboplasty in achieving pregnancy in our study was 76.9%. All women had bilaterally patent tubes at the two months of follow up. Successful tuboplasty and subsequent pregnancy rates is possible if suitable candidates are selected.

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