ORIGINAL ARTICLE

Is Previous Abdominal or Pelvic Surgery a Risk Factor in Laparoscopic Sterilization? A Retrospective Case Study

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Abstract

Objective: The present study is to evaluate the risk involved, difficulties encountered, as well as the safeness of laparoscopic sterilization in cases of previous pelvic or abdominal surgery.

Design: A retrospective study was carried out between January 2017 and January 2019 at Dr Shankarrao Chavan Government Medical College and Hospital, Nanded, Maharashtra.

Setting: Tertiary Care Hospital, Nanded, Maharashtra.

Materials and method: Laparoscopic tubal ligation (LTL) was performed using Falope ring in all the cases.

Results: Mean age of the study population was 26.67 years, and mean parity being 3. The most common previous pelvic or abdominal surgery was cesarean section 96% followed by open appendicectomy 3%. About 14% of them had pregnancy termination (less than 12 weeks of gestation) with LTL and 86% of them had undergone interval LTL. Omental adhesions up to the anterior abdominal wall and in the pelvis were seen in 19.5% of cases, and adhesiolysis was required in 3.5% of them to complete the procedure. Minimal peritubal adhesions were noted in 3% of them, and ligation was successfully completed in all by adhesiolysis. No major intraoperative or postoperative complications were documented.

Conclusion: Laparoscopic sterilization is associated with low morbidity and hence it is safe in women with previous pelvic or abdominal surgery.

Keywords: Laparoscopic sterilization, Medical termination of pregnancy, Pelvic or abdominal surgeries.

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Introduction

Laparoscopic tubal sterilization can be considered as a safe, authentic, and preferable method of sterilization. It can be performed at any time other than immediate postpartum period. It is accepted as a blind procedure where the operator is not able to visualize the structure while piercing the abdomen with a trocar or Verres needle. The approach requires an umbilical port and one or two additional 5-mm secondary ports to introduce various instruments. Many gynecologists are disquiet to perform the procedure in women with previous abdominal or pelvic surgery as it is a relative contraindication as well as due to menace of postsurgical adhesions. In addition, there are procedure-related risks of abdominal-cavity access techniques like gastrointestinal and major blood-vessel injuries,[1] creation of pneumoperitoneum, and anesthesia-related risks.[2] The present study has been conducted to evaluate the risk involved, difficulties encountered, as well as techniques followed to minimize the side effect in patients with previous abdominal or pelvic surgery who are undergoing laparoscopic sterilization.

Materials and Methods

This retrospective study was conducted at the study institute. It is a tertiary care hospital as well as referral center for both public and private health sectors. The study included procedures performed between January 2017 and January 2019. All the women were recontacted, informed consent was obtained, and they were re-evaluated to analyze the rate of contraceptive failure after completing the second successful postoperative year. The study included women who had requested for sterilization procedure. The demographic and physical characteristics of the participant women included age, gravidity, parity, number of ectopic pregnancies and abortions, body mass index, and past medical and surgical history (history of cesarean sections, laparotomy for ectopic pregnancy, appendix, or any other major abdominopelvic surgery, etc.) were noted.

Surgical Technique

The abdominal access process for conventional CO_2 laparoscopy included 5 mm infraumbilical skin incision, insertion of the Veress needle into the peritoneal cavity through a blind approach, testing the needle location and position, and insufflations of CO_2 until an intraabdominal pressure of 12–14 mm Hg was obtained. Under direct vision, 5 mm ports were created lateral to the first entry site. In total, 2–3 sites near the umbilicus were checked before insertion of transumbilical trocar and after the attempts of two failures systematically, trocar site was changed. Intraoperatively, fallopian tubes were identified, and nonreactive silastic ring was applied with the help of a specialized applicator device consisting

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of grasping prongs at the distal end. Preloaded silastic-ring applicator was introduced through the lateral port and fallopian tube grasped approximately 3 cm distal to cornual end. Adequate knuckle of the tube was approximately 1 cm long with an obvious inner loop. Applicators are available that can accommodate one or two rings at a later time, one could be beneficial as reloading between the banding can be prevented. Difficulty with silastic-ring placement was observed with adherent or edematous tubes, where the "Yoon three grasp technique" was used for ring placement. Postoperatively, knuckle of the tube undergoes necrosis from blood supply interruption, and within a span of 3–6 months, complete absorption of knuckle occurs and proximal and distal stumps separate completely.

Statistical Analysis

The data on categorical variables are shown as *n* (% of cases). All results are shown in graphical format.

Results

In total, 200 cases with previous pelvic or abdominal surgery had undergone laparoscopic sterilization during the study period. Mean age of the study population was 26.67 years (Fig. 1), and mean parity being 3. Two attempts to achieve pneumoperitoneum were required in three of them due to obesity. The most common previous pelvic or abdominal surgery was cesarean section 96% (192) followed by appendicectomy 3% (6) as shown in Figure 2. In total, 127 (63%) women had previous 2 cesarean sections, 37 (18.5%) women had previous 3 cesarean sections, and 28 (14%) women had previous 1 cesarean section. In total, 5 (2.5%) of them had previous open appendicectomy, 2 (1%) of them had previous resection of ectopic pregnancy, and 1 (0.5%) of them had previous hysterotomy for failed induction of second-trimester MTP. About 188 (94%) patients had pfannenstiel scar, 7 (3.5%) midline vertical scar, and 5 (2.5%) McBurney's scar, respectively. About 28 (14%) of them had pregnancy termination (less than 12 weeks of gestation) with LTL and 172 (86%) of them had undergone interval LTL. Concurrent suction evacuation either with MVA syringe or suction curettage using an 8-, 10-m, or 12 mm-cannula was performed, and the decision was made by the consultant at the time of admission. Interval TL was performed in the postmenstrual phase in 128 (74.4%) patients. Short general anesthesia and local anesthetic 3 mL 3% lignocaine was infiltrated at port entry site in all of them. Omental adhesions up to the anterior abdominal wall and in the pelvis were seen in 39 (19.5%) (Fig. 3) of cases, and adhesiolysis was required in 7 (3.5%) of them to complete the procedure. Minimal peritubal adhesions were noted in 6 (3%) (Fig. 4) of them and ligation was successfully completed in all by adhesiolysis (Figs 3 and 4). Tortuous and dilated tubes were noted in 2(1%) of them, where the "Yoon three grasp technique" was used for successful ring application. Double-ring application was done in 1 (0.5%) of these cases due to transection of the tube. Coagulation was required in 3 (1.5%) of them to control the bleeding. Other associated intraoperative findings were functional ovarian cyst in 2, bicornuate uterus in 3, and endometriosis implants in the pelvis in 5 of them. Among the study population, the associated comorbidities observed were obesity among 7 cases (3.5%), HTN among 6 (3%) cases, and congenital heart disease among 3 (1.5%) cases as shown in Figure 5. Port-site closure was done with staplers in 66% of them and with the help of vicryl 2-0 in 34% of them. There were no complications like bowel or bladder or any major vessel injury during the procedure. Patients were monitored for 8 hours postoperatively and discharged on the next day with postoperative advice on wound care, warning signs, and follow-up advice. Stitch or stapler removal was done on the postoperative 7–10 days period. Further follow-ups were advised after the next menstrual cycle.

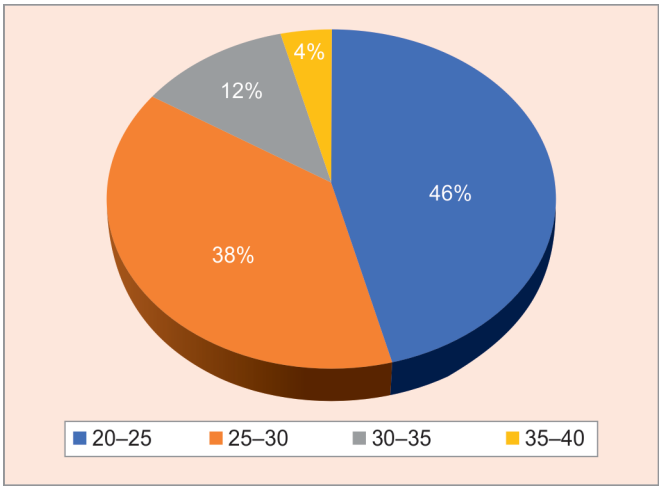

Fig. 1: Age-wise data distribution of study population

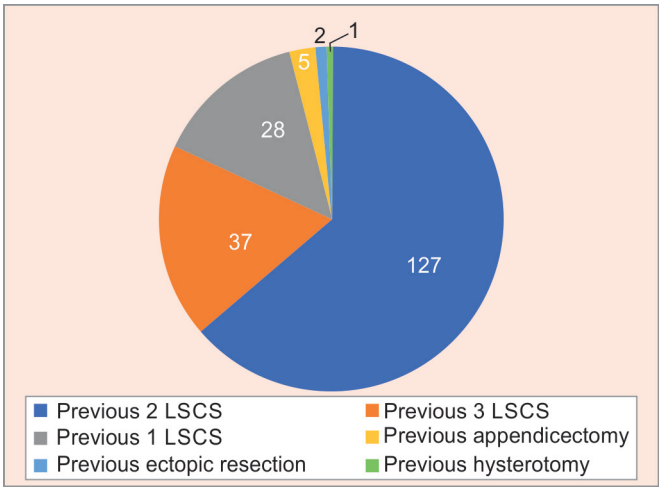

Fig. 2: Previous abdominal surgery

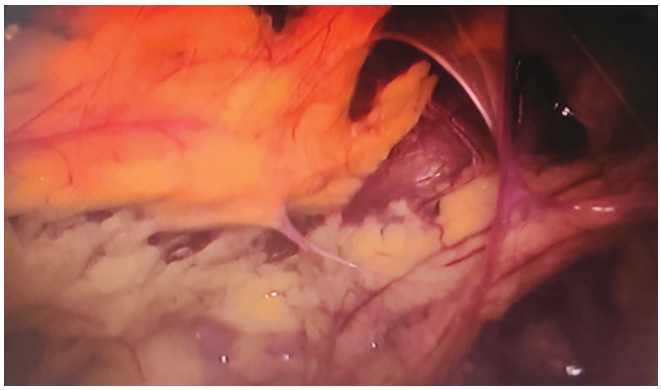

Fig. 3: Dense omental adhesion up to an anterior abdominal wall

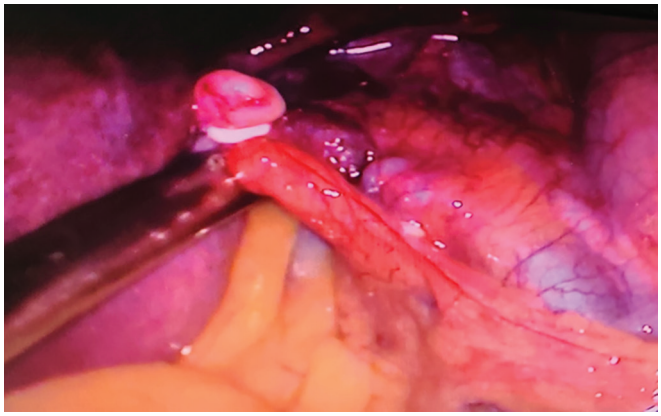

Fig. 4: Peritubal adhesions

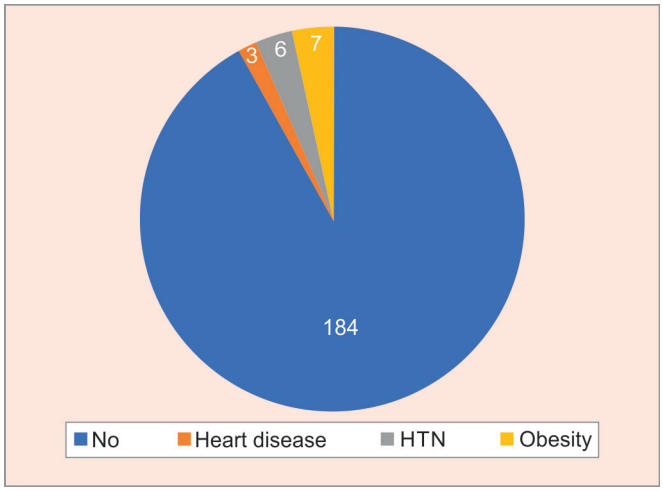

Fig. 5: Comorbidities of associated population

Discussion

Concurrent surgical evacuation with laparoscopic sterilization is a simple, safe, and economic procedure for a group of patients demanding combined abortion and immediate surgical sterilization as in our study. As per the study by Szigetvari et al.,[3] 23% of them had abdominal adhesions with previous abdominal surgery which is comparable with our study as it is 19.5%. As per a review by Cochrane,[4] there were 11 procedure-related complications in laparoscopic sterilization which was nil in our study. As per the study in women with two or more cesarean-section laparoscopic sterilization is safe and associated with low morbidity and can be performed as permanent method of sterilization if extra care is taken and is in part with study conducted by Ghoshal et al.[5]

Conclusion

As in comparison with open tubal ligation, LTL would prevent larger abdominal incisions, longer hospital stay, and has fewer complications associated as noted by our study. Selection of cases, preoperative preparation, adequate experience of operating surgeon, proper functioning, maintenance of equipment, post-op care, as well as follow-up has to be kept in mind while following camp approach to make the procedure more popular and safe in developing countries like India. Team-based healthcare approach, which includes district medical officer to identify lacunae in the availability of service providers for regular laparoscopic-sterilization procedures along with training of gynecologist, OT staff, and anesthetists in female laparoscopic sterilization, would largely achieve population stabilization and will promote standards on sterilization services in ensuring the provision of quality services.

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