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Laparoscopic Sterilization by Ron-Manvi Method, 3 Decades of Clinical Experience

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ABSTRACT

Laparoscopic sterilization by double puncture method without vaginal manipulation under local anaesthesia is a highly economical doorstep approach to family planning using the latest technological advances in minimal access surgery. The authors take privilege in being the pioneers of introducing this technique in the state of Kerala in May 1983. This procedure was later utilized in camps conducted in Karnataka, Maharashtra and Tamil Nadu between 1983 to 2015. The advantage with this technique is that it is a highly economical approach since office tables are used as operating tables and the procedure does not require any kind of general or spinal anaesthesia and the patient can go back home on the same day about 4-6 hours post procedure. So far more than one lac patients have been benefitted through this procedure in over 10,000 camps.

KEYWORDS : Laparoscopic tubal sterilization, minimal access surgery, Ron Manvi technique

Introduction:
Laparoscopic tubal ligation is a permanent voluntary form of birth control in which a woman's fallopian tubes are surgically cut or blocked off to prevent pregnancy. Tubal ligation is the second most common form of contraception after oral contraceptive pills. The use of tubal ligation as a contraceptive measure increases with increase in parity with the rate being about 59% in women who have had 3 children and 13% in women who have had one child. Those women who chose to stay issueless 44% were known to use tubal ligation over the reversible contraceptive measures.

Interval sterilization refers to tubal ligation being performed in the peri- partum period and this constitutes about half of the sterilizations being done and the other half of the sterilizations being done and the other half is done during the time of a caesarean section/immediate post partum. Interval sterilizations are usually laparoscopic procedures.

Advantage of a laparoscopic technique is the short operating time, rapid recovery and immediate effect. The disadvantage is the cost of the equipment which is quite high which is overcome in this Ron Manvi technique which requires only local anaesthesia.

INDICATION:
- Women who have completed family.
- Women who want to undergo permanent sterilization.

CONTRAINDICATIONS:
- Women who are unfit for any laparoscopic procedure such as those with a known severe cardiac or pulmonary disease.
- Women are unwilling to undergo permanent sterilization.
- Women with coexistent condition Eg: gynaecologic malignancy which may require further procedure such as hysterectomy or bilateral salphingo-oopherectomy.

Materials and methods:
This is a retrospective study carried out over a span of 32 years, between 1983 to 2015 when the Ron-Manvi technique of laparoscopic tubal sterilization was carried out in more than 10,000 camps that were conducted across the states of Kerala, Karnataka, Maharashtra and Tamil Nadu.

All women who were subjected to the above mentioned procedure received premedication as follows:
Tab. Anxit 0.25 mg/ Analgin with a sip of water.

Inj. Atropine 1 amp intramuscular route given half an hour before surgery.

The procedure was carried out as follows:
- Parts are painted and draped. 7 mm incision is placed near the lower umbilical margin.
- A veress needle is introduced through this incision and pneumo peritoneum is created.
- 1-2 litres of carbon di oxide gas was used for insufflation. The first trocar and cannula are inserted through this site.
- The trocar is removed and replaced with a scope.
- The second trocar is now introduced under vision.
- Through the second trocar bands an applicator is introduced and sialistic bands are applied . 1-2 bands are applied for each tube.
- After application of the rings the trocars are removed and the abdomen is deflated.
- Wound is closed with water proof band aid/ tincture benzoin is applied to the wounds.
- Patient is shifted to the post operative ward for observation for 4-6 hours and later on discharged with a prescription of broad spectrum antibiotics for about 5 days along with analgesics.
- The patient is advised to follow-up after one week with concerned doctor and also advised to report immediately in case of any complication.

Results:
A total of more than 10,000 camps were conducted in various places in the states of Kerala, Karnataka, Maharashtra and Tamil Nadu from 1983 to 2015. In the camps a total of more than 1.15 lac patients underwent laparoscopic tubectomy by Ron-Manvi technique. The failure rate was 1:500 to 1:1000 which is comparable to the international standard failure rate of 1:200-1:500.

Few of the complications noticed in our experience are as follows. 12 patients went into a cardiogenic shock all of whom were revived successfully. Pulmonary oedema was seen in 5 patients who underwent medical management of the above mentioned condition.

In 10 patients the procedure had to be converted into emergency laparotomy due to inability to complete the procedure. 6 such conversions were due to intra abdominal adhesions. In 2 patients there was omental prolapse from the port site. In 1 patient the accidental ligation of round ligament was carried out and in 1 patient there was a high grade suspicion of bowel perforation after the insertion of the first trocar and hence the procedure was abandoned and emergency exploratory laparotomy was carried out.

Discussion:

Female sterilization is the most common contraceptive method used worldwide, accounting for approximately 30% of current contraceptive users.1 Laparoscopic tubal sterilization is an effective and permanent contraceptive procedure. Several methods of laparoscopic sterilization can be utilized. The surgeon can apply bands or clips to the tubes, desiccate tubes with either unipolar or bipolar cautery, or simply remove the tubes.

The best data for sterilization failures comes from the 1996 US Collaborative Review of Sterilization, or the CREST study.2 In CREST, over 10,000 women who had a sterilization procedure from 1978 to 1986 were followed for up to 14 years.

The US Collaborative Review of Sterilization published data on 10,685 women monitored for 8-14 years. According to this study there were 143 patients after tubal sterilization. There was a 5-year cumulative life-table probability of failure of 13 per 1,000 procedures and a 10-year cumulative life-table probability of failure of 18.5 per 1,000 procedures. According to this study the risk of failure continued and accumulated over time.[2]

The probability of failure of the sterilization procedure was directly affected by age. Higher failure rates were observed in people who underwent sterilization at a younger age. Failure rates also differed based upon the method used for tubal sterilization. It was noticed that in all methods, except the spring clip, the failure rates were almost comparable to that with an intrauterine device. [2]

The failure rates of sterilization done by using Ron Manvi technique is around 1:500 to 1:1000 which is comparable to the international failure rate. Also the complications noted were negligible compared to the vast number of subjects and all the complications previously stated were managed effectively.

There are several methods by which one can reduce the failure rates while performing a laparoscopic banding and occlusive procedure such as proper identification of the fallopian tubes and following them up to the fimbriated ends after identification, placing the bands at a distance of about 2-3 cm from the utero tubal junction, placing the bands properly as per the manufacturer's instructions, deploying the devices slowly and lastly by making sure that the entire lumen of the tube is being occluded by the bands applied.

The complication rates observed in our study were negligible considering the vast number of subjects on whom the above mentioned procedure was carried out. Those cases which were converted to laparotomy due to various reasons such as presence of adhesions which interfered with the procedure or in one case where there was a suspected bowel perforation after the introduction of the first trocar and three of the cases in which there was omental prolapse in the immediate post operative period due to raise in the intra abdominal pressure secondary to cough or vomiting. The rates of conversion into laparotomy were comparable to the international standard rates.

Since the procedure can be carried out on a large scale and with minimal equipment, it is highly cost effective and in a setup like ours where there is a huge patient load to be catered to. The procedure does not require any prolonged anaesthesia and since it is a day care procedure the patient can return back to home and resume her normal daily activities within 24 hours.

Conclusion:

Laparoscopic sterilization has stood the test of time and is proved to be highly economical. Short hospitalization and day care surgery have proved a huge benefit in developing nations like India. The morbidity and mortality in our experience is comparable to international standards.

References:

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