

OUTPATIENT LAPAROSCOPIC STERILIZATION

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INTRODUCTION

Female sterilization is one of the most effective methods of contraception. Since the inception of the National Family Planning Programme in Malaysia female sterilization has been accepted by a small proportion of the population. In 1978 it accounted for only about 6 percent of all acceptors. The number of patients sterilized per year is about 4,700. Over the years this figure does not seem to increase even though there is an apparent increase in demand of female sterilization. There are several constraints in the National Sterilization Programme particularly lack of operating facilities. Sterilization is performed in the hospitals where the waiting list is long and often cases get cancelled since other gynaecological cases are given priority. This has resulted in many patients defaulting. There is also shortage of surgeons and anaesthetists to perform sterilization.

Traditionally female sterilization in Malaysia has been performed for post partum patients utilizing minilaparotomy approach and Pomeroy's technique of tubal ligation. However, recently there is a tendency to shift to other techniques particularly by laparoscopy for interval sterilization. There is an urgent need to initiate an outpatient sterilization programme utilizing a simple but safe technique. This is a report on a pilot study of outpatient sterilization utilizing laparoscopic technique under local anaesthesia and sedation. The preliminary report based on 305 patients is presented with emphasis on the advantages and possible weaknesses of such procedure.

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MATERIALS AND METHODS

Sterilization is performed in the Family Planning Specialist Centre, Maternity Hospital. The operating facilities are far from ideal with the aseptic technique maintained at bare essentials. Patients are motivated towards sterilization during the immediate post partum period in the Maternity Hospital and are counselled regarding the actual procedure. Some patients are being referred from the peripheral family planning clinics while others come on their own having heard about the sterilization service from friends who have gone through the procedure.

There are four operating sessions a week in the clinic. When a patient decides to have the operation, a written consent is signed by both the patient and her husband. The patient is instructed to fast from the night before the scheduled date of operation. She is requested to report to the clinic at about 8.00 in the morning together with her husband who is subsequently told to fetch her at about 3.00 or 4.00 o'clock the same afternoon.

After a brief history taking and examination, the patient is changed into a ward gown. She is given pre-medication of phenergen 25 mg intramuscularly. Heavy sedation consisting of 100 mg pethedine and 10 mg valium is given intravenously about 10 to 15 minutes before the operation. Local anaesthesia consisting of 10 cc of lignocaine 2% are infiltrated locally at the site of incision. A half inch curved incision is made below the umbilicus. Usual laparoscopic procedure is performed from then on. An assistant, using a Hulka uterine elevator, lifts the uterus.

KLI laparocator is used for applying fallope rings to both the fallopian tubes after insufflating the abdomen with 2 litres of carbon dioxide. In some cases Lay rings which are very similar to Fallope rings were used for ligation. Filshie clips were

utilized in some of the patients, while for others who underwent minilaparotomy, ligation was performed by the Pomeroy method.

The entire sterilization procedure usually does not take more than 20 minutes. The skin incision is usually closed with two catgut sutures. Patients are requested to come back for wound check one week after the operation. Scheduled follow-up visits are maintained for all patients up to one year. In the event of patients developing complications after discharge, they were requested to contact the doctors who performed the operation.

RESULTS

CHARACTERISTICS OF PATIENTS

During the period of study, 305 outpatient sterilizations were performed. The mean age of the patients was 32.08 years. The mean gravidity was 4.92 and the mean parity of the patients was 4.57. Majority of the patients come from the lower social strata with low educational attainment and low income.

STERILIZATION TECHNIQUE

Two hundred and fifty three cases (82.95 percent) of sterilizations were performed by laparoscopic procedures and 43 cases (14.09 percent) by minilaparotomy. However, in 9 (2.96 percent) of cases we encountered difficulty with laparoscopy and subsequently proceeded to minilaparotomy. Laparoscopic sterilization was performed mainly for interval cases whilst the minilaparotomy technique was employed for post partum sterilization. Fallope and Lay rings were applied on 252(82.62 percent), Pomeroy on 47(15.42 percent) and Filshie clips on 6(1.96 percent) of cases.

ANAESTHESIA

Quantitative analysis and evaluation of the efficacy of local anaesthesia and heavy sedation has not been made. However, our impression was that the majority of the cases tolerated the sedation and local anaesthesia fairly well and without much complaint of pain. Only a very small number of patients complained of pain particularly at the time when the Fallope or Lay rings were applied to the

fallopian tubes. Applications of Filshie clips hardly caused any pain. Patient sometimes experience pain at the time of introduction of verres needle and also during introduction of trocar sleeve.

COMPLICATIONS

The overall complication rate was 15 (4.9 percent) and of these mild wound sepsis accounted for 6 (1.96 percent) (see Table I). Most of the wound sepsis was very mild and healed very quickly on daily dressing. No cases of pelvic sepsis was reported. There were three cases of uterine perforation by the uterine elevator. Of these only two cases needed hospitalization. Perforation of uterus by uterine elevator usually caused very minimal bleeding and very often closed spontaneously within several days. There were two cases where the fallopian tubes were traumatised and some degree of bleeding occurred. However, the bleeding was easily controlled by applying another Fallope ring. Two patients had vomiting during the laparoscopic procedure.

TABLE I
COMPLICATIONS

| | No. of Cases | Percentage |
|--------------------------|--------------|------------|
| Uterine Perforation | 3 | 0.98% |
| Trauma/Bleeding to Tubes | 2 | 0.65% |
| Vomitting | 2 | 0.65% |
| Wound Sepsis (Mild) | 6 | 1.96% |
| Hospitalization | 2 | 0.65% |

FAILED STERILIZATION

There were seven (2.29 percent) cases of failed sterilization in our series. It was found that six of the cases were performed by a trainee registrar in obstetrics and gynaecology. The last was performed by a specialist gynaecologist. Most of the failures were due to wrong application of rings; the most common site being the round ligament. Trainee registrars in Obstetrics and Gynaecology, Maternity Hospital, do three weeks posting in family planning and during this period the registrars manage the Family Planning Clinic, Infertility Clinic and also

perform laparoscopies for sterilization and for infertility. They are however supervised by the consultant in the Fertility Sterility Clinic and also when performing operative procedures. All the seven failures were recorded among tubal rings, none among the Pomeroy method of ligation and Filshie clips.

COST PER OPERATION

The cost per patient was estimated to be around twenty ringgit for a pair of tubal rings, anaesthetic agents and suture materials. This excludes the capital cost of equipment, maintenance of operation theatre and salary of staff.

DISCUSSION

Our preliminary study indicates that female sterilization could be done easily as an outpatient procedure under heavy sedation and local anaesthesia. Day surgery is convenient for the patients. Laparoscopic sterilization using Fallope rings is a very simple procedure which could be acquired by an ordinary medical practitioner. At present most of the laparoscopic sterilizations in our clinic is being performed by the medical officer who has received training in laparoscopy. The minimum period required to train an ordinary medical officer to be competent in laparoscopic procedure is about three weeks and certificate of competency could be given after he performed 15 cases on his own under supervision.

Laparoscopic sterilization under local anaesthesia and sedation is ideal in our national sterilization programme because of the shortage of trained anaesthesiologists in our country. However, surgeons performing the operation should have skills in resuscitation of patient in the event of complications arising from intravenous sedation. Equipment for resuscitation and facilities for laparotomy should always be present in the clinics where sterilization is performed. The clinic should also have facilities to transport patients immediately to the hospital when the need arises. Occasional hospitalization of patients sometimes is necessary as shown in our experience where two cases (0.65 percent) needed to be hospitalized. There is still a need to improve our anaesthesia because in our series a small proportion of the

patients complained of pain during introduction of verres needle, trocar and also during application of the rings of the fallopian tubes. Some surgeons overcome the pain during application of the rings by spraying the tube and surrounding peritoneum with a local anaesthetic agent.

The overall complication rate is very low. The complication rate for laparoscopic sterilization reported by the Royal College of Obstetricians and Gynaecologists study was 4.1 percent. In fact, as we gain more experience, the operative complication rate has declined. Selection of patients is extremely important. Most of the cases with some kind of medical or surgical history such as previous laparotomy, caesarian section, history of diabetes or hypertension are excluded from outpatient laparoscopic procedure. These cases are done under general anaesthesia in the General Hospital Theatre.

From our preliminary study, the failure rate is extremely high i.e. 2.29 percent, Yoon and King (1976) reported pregnancy rate of 0.53 percent using Fallope rings. The failure in our series are attributable to the surgeon and is not method failure. More stringent supervision of the trainees would be exercised in future.

CONCLUSIONS

1. Outpatient laparoscopic sterilization programme is convenient for patients since it does not require hospital admission. The patients family routine need not be disrupted by hospital admission. It is hoped, in future, that our Family Planning Specialist Center could also provide facilities for day care nursery for children of our patients.
2. Hospitalization cost which is estimated to be about fifty ringgit per day could be saved. The cost per patient undergoing outpatient sterilization is extremely low and hence this would be a tremendous saving for our government.
3. Laparoscopic technique of tubal ligation is a very simple but safe technique. The skill could be acquired by any medical practitioner after a brief period of supervised training. The small incision scar is hardly discernable and patients' acceptability of such scar is extremely high. The complications rate is generally low and would

become negligible as the theatre facilities improve and the operating staff become better trained.

4. An outpatient laparoscopic sterilization programme would certainly overcome the problem of shortage of anaesthesiologists as local anaesthesia and intravenous sedation are used in this procedure.

REFERENCES

Chamberlain G., Brown J.C. Jordan, J.A. *et al*, 1978 Gynaecological Laparoscopy - Confidential Enquiry into Gynaecological

Laparoscopy RCOG Page 112-136.

Norlaily A., Tan B.A., Kuan L.C. (1979) The Malaysian National Family Planning Program Facts and Figures page 56-60.

Wheeles C.R., (1976). The past, present and future use of Laparoscope in female sterilization. *Advances in female sterilization technique* page 30-36.

Yoon I.B., King T.M., (1976). The Laparoscopic Fallope-ring procedure. *Advances in female sterilization technique* page 59-68.