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LAPAROSCOPIC STERILIZATION CAMPS

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Introduction

The rapid surge in the popularity of laparoscopic sterilization makes it one of the most important operative procedures with which no gynaecological endoscopist could afford to remain unfamiliar. The scarcity of our facilities and resources, with the pressing problems of our increasing population demands a method of sterilization which is at once appealing and safe to the patient, capable of performance on an outpatient basis in large numbers and economical to the governmental or other agencies which promote this method. To all these above requirements, laparoscopic sterilization provides the perfect answer.

The rural areas where 80% of our population lives, has highly inadequate medical and surgical facilities. Except for the district headquarters, and to a much lesser extent the Taluka head quarters

there exist no facilities for anything but the most simple care.

However, in the organisation of camps all facilities and manpower can be pooled together and concentrated at a particular preplanned time and place, so that a large number of people over a short time could avail of benefits at their very door steps of skilled and experienced medical personnel otherwise inaccessible to them.

Organisation of Camps

Laparoscopic sterilization camps are organised by certain State Governments and also some voluntary agencies. Various targets are fixed for each District by the District Health Officer where the programme exists. The government agencies have abundant manpower and relatively ample finances which could complement the committed leadership and the determined and selfless services provided by the voluntary agencies. A joint venture channelising the resources of both would be greatly welcomed.

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A good publicity is essential to attract sizable crowd. The several ways of doing this are:

(1) Mouth to mouth and group talks by the village sarpanchs, social workers, multi-purpose workers, health visitors, auxillary nurse midwives, Taluka Officers and teachers. Successfully operated patients remain the best advocates for the safety and comfort of the method.

(2) Public announcements through loud speakers from jeeps, tongas and bullock carts, which tour the entire area to be covered.

(3) Banners, put up at strategic places like railway stations, S.T. bus stands and post offices.

(4) Wall posters and front page advertisements in local vernacular newspapers help in reaching the literate population.

The camps are generally held in the hospitals at Taluka head quarters draining a population of above 1,00,000 from the surrounding area. The place should have an adequate water supply and an uninterrupted power supply or a stand by generator to work the light source.

Although camps are held around the year, except during heavy monsoon when the roads are unusable, the ideal time for the predominantly agrarian population is between the harvesting of one crop and sowing of the next. This is usually from September to March.

Special incentives are often offered during camps. This is to compensate for the monetary loss caused by absence from work and it helps to motivate the patients of the lower socio-economic group. Free transport facilities to and fro are also provided.

To be in independent charge of the camp, the laparoscopist should have an experience of a minimum of 500 laparo-

scopies in hospital practice, of which at least 100 should be sterilization cases.

A doctor familiar with pelvic examination and procedure is required to introduce the uterine manipulator and perform MTP if necessary. An experienced nurse is necessary to assist the laparoscopist in the procedure and a trained doctor or paramedic to operate the light source and the pneumoperitoneum machine. Additional nurses are required to hand the instruments to the laparoscopist and apply the bands on the applicator. An ayah has to sterilize the instruments and hand them to the nurse, after each operation. About 4 stretcher bearers are required at a time to shift the patient and give position to them.

One nurse and one doctor each are required to give the pre-operative medication and the post operative care.

In addition to the well known requirements of the laparoscopic equipment like the cold light source, a pneumoperitoneum insufflator and a laparoscope, instruments for doing suction aspiration and uterine manipulators are essential. Facilities for doing an emergency laparotomy should be available within easy reach. It is often advantageous to carry a minilight source working on re-chargeable batteries for use during power failures.

As only simple examination tables are available in mofussil areas, Trendelenberg position may be given by raising the foot end with bricks or wooden blocks. In absence of the pneumoperitoneum insufflator, one has to make do with air insufflation with the utmost care. This can be done manually by forcing air with a sigmoidoscopy bulb or more elegantly by using an aquarium air pump or the outlet of a suction machine.

The laparoscopist working in a camp has to be forever innovative, and adapt himself to the deficiencies and short-

comings which may crop up any time, or else his work will come to a screeching halt.

Selection of Cases

Only those who volunteer for sterilization should be taken. Except for the very highly experienced laparoscopist, it is desirable to exclude women who are either pregnant, puerperal or post-abortal. In such cases, the trocar unless very carefully inserted may traumatize the bulky uterus. The tubes are thick, more likely to be bisected by the ring applicator and also hidden behind the large uterus. Moreover, facilities for doing M.T.P. are often deficient at camp sites leading to septic incomplete abortions after uterine manipulation. In camps, it is further not advisable to take chance of bowel trauma in cases with previous laparotomy scars.

All patients must be admitted on the previous night and a thorough physical examination, routine urine analysis and Hb estimation carried out to exclude any serious systemic or local disease. Inadequately examined or prepared cases should not be included merely to finish the targets.

Sterilization being a terminal procedure, over enthusiastic, young couples with one child should be dissuaded from operation for fear of later possible adverse repercussions on the programme.

Preoperative Preparation and Pre-medication

The patients are kept starving for at least eight hours pre-operatively and a vaginal chloromycetin pessary introduced. An enema is given early morning about four hours in advance of the operation. Just before the procedure they are made to void urine.

Owing to the hazards and the requirements of time and complicated apparatus

for general anaesthesia, and the non-suitability of conduction anaesthesia for laparoscopy, neuroleptanalgesia along with local infiltration is the anaesthetic technique of choice. Neuroleptanalgesia is a combination of a major tranquilizer (neuroleptic) e.g. Diazepam, promethazine, Chlorpromazine and a narcotic analgesic e.g. Pethidine, Pentazocine to obtain pain relief. Various combinations of the above have been used by different workers—our personal preference being Pethidine 100 mg i.m. 1 hour before the operation and Pentazocine 30 mgm and Diazepam 10 mg i.v. just before the operation.

Inj. Atropine half an hour before is given to prevent vaso-vagal shock and reflex bradycardia and cardiac arrhythmias, particularly when CO₂ is used for insufflation. Two tablets of metochopramide 10 mg each given orally two hours before the operation are very effective in preventing vomiting as a side effect of the narcotic pre-medication.

Technique

The following major methods of sterilization are available;

- A. Electrocoagulation of tubes, with or without cutting.
- B. Application of spring loaded clips.
- C. Application of bands and rings.

The hazards of using electric cautery in a camp set up, the high cost and high failure rates with the clip preclude their wide usage. The application of silastic (silicone elastomer) ring to the tubes thus remains the most popular method despite a somewhat higher incidence of complications like bisection of tube and bleeding from mesosalpingeal blood vessels and also the greater incidence of post operative pain as compared with the other two methods.

Although the single puncture instrument is being widely used, a double puncture instrument offering an unimpaired field of vision and a freer movement of the instruments is safer and more comfortable method for both the laparoscopist as well as the patient.

The problem of rapid sterilization of the laparoscope between procedures defies a satisfactory solution. Owing to the detrimental effects of Savlon and dialdehyde (Cidex) solution on the optics of the scope, cold sterilization with formalin vapour is the technique being universally employed. We do keep the instruments overnight in formalin vapour in air tight containers. Between procedures, however, we have used, in camps, hot sterile water to wash the instruments and spirit to sterilize them without any serious wound or pelvic infection in the nearly 10,000 cases operated upon so far.

Post-operative Care

It is very essential to administer a dose of long acting, penicillin (Penidura-LA to be given during day time only) or other antibiotic. In spite of the difficulty in adherence to strict aseptic measures in camps, infection is seldom a problem.

The patient must be carefully watched for respiratory depression following the neuroleptanalgesic agents, and pulse and BP monitored. Emergency drugs like adrenaline, hydrocortisone, antiallergic drugs and respiratory stimulators like Micoren should be kept in readiness as also oxygen cylinders and a bag with mask to temporarily ventilate the patients if necessary.

Complications

With a slightest laxity in the care and vigilance on the part of the operating team, such as failure to maintain sharpness of instruments or catheterization

when necessary, the incidence of complications can increase manifold. These include anaesthetic complications like cardiac arrest and arrhythmias, trauma to bowel, bladder and pelvic organs, haemorrhage from abdominal wall, pelvic blood vessels and tubal mesentery, pelvic side walls and ovarian vessels and mesentery of bowels.

With the proper selection of patients and technique, the incidence of such complications should be negligible. The occurrence of even a single major complication may constitute a severe setback to the camp programme.

Follow-up

In camps, more than elsewhere, a proper follow-up of patients is essential to ascertain the incidence of complications and also the failure rate. For lactational amenorrhoea cases a long term follow-up is required to assess the failure rate. During the follow-up visits it is necessary to dispel the wrong impression of the procedure being a temporary method because of the short time taken to accomplish it. First follow-up after a week, second follow-up after a month, third follow-up after two more months and fourth follow-up after six months of the operation is an ideal way to register early and late complications as well as build up a strong patient-doctor relationship which will pay dividends in motivating with even greater ease thousands of females for accepting laparoscopic sterilization. The task is made difficult by the widespread scattering of patients and in the reluctance to come back to the centre for the follow-up owing to preoccupation with their domestic and other duties.

In cases of reported pregnancy following the sterilization, care should be taken to eliminate by proper history taking and examination either a pre-existing preg-

nancy or a luteal phase pregnancy at the time of sterilization. Patients are often ignorant of the dates of their L.M.P. or sometimes deliberately give wrong dates to gain priority for inclusion in the camps. At P.H.C., the facility to do MTP is a vital need to avoid septic incomplete abortion which may occur in advancing luteal phase pregnancies.

Difficulties and Problems

The allotment of a short time to any particular place makes it imperative to operate upon a large number of patients as far as possible.

The rural population differs from the urban in being of a lower socio-economic and educational status, poorer personal hygiene and speaking dialects and languages often unintelligible to the operating endoscopist. On the other hand, their better powers of tolerance and the higher degree of motivation makes them better subjects for doing the procedure under local anaesthesia and neuroleptanalgesia.

The operation theatre often lacks such facilities like Boyle's apparatus, shadowless operation lamps or even a constant and uninterrupted supply of electricity and running water.

Trained and qualified anaesthetists as well as paramedical and subordinate staff familiar with assisting in laparoscopies is usually not available. This increases tremendously the responsibilities of the endoscopists. It is usually difficult to transport a large team with the laparoscopist

and he has to train local personnel to assist him.

The above lack of facilities contribute to risks which are compounded at times by inadequate pre-operative investigations, either due to lack of facilities or due to the sheer number of cases or a combination of both, and also a less than adequate post-operative surveillance.

The subjects are usually malnourished and underweight, often have skin infection, laxity of abdomen and divarication of recti, factors which multiply the risk factor. Often the patients enter the operation theatre with bladder and bowels incompletely evacuated. A few might have had taken something orally despite instructions to the contrary. In target oriented and time limited programme there are many factors which may contribute to increased operative risks.

Conclusion

Laparoscopic sterilization camps have started a new epoch in the field of family planning. The laparoscope originally devised as a sophisticated and delicate instrument for diagnostic work in the fashionable clinics of the West has found its most fruitful use as a portable, compact instrument for rapid mass sterilization in the vast underdeveloped regions of the East. The work of Kelling and Jacobaeus, three quarters of a century later, promises to make the world a little less crowded and a better place to live in.