COSMETIC SCAR AND SCOPE OF REVERSAL AFTER PUERPERAL STERILISATION

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ABSTRACT

Female sterilisation is an important component of National Family Welfare Programme. The target group is best motivated during the puerperium for such a procedure. However laparoscopic sterilisation which has got some distinct advantages, is not technically feasible at this time. The authors have used a technique where the advantages of cosmetic appearance, reduced post operative morbidity and reversibility can be conferred on the puerperal women.

After trying out the method individually in some cases, a formal case control study design has been made and an evaluation study has been performed in 122 cases. The technique has been found to be cosmetically more acceptable, both at clientele and peer evaluation levels ($p < 0.001$). Though all the four parameters of post operative morbidity have shown better results for the technique evaluated as against the conventional technique, statistical significance has been achieved in two of the parameters ($p < 0.05$).

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KEY WORDS : Cosmetics; Female sterilisation; Post operative morbidity.

Introduction

In our country constantly haunted by the prospect of population explosion it is no wonder that National Family Welfare Programme becomes synonymous with population control and population control becomes synonymous with contraception. Permanent contraception becomes eventually synonymous with female sterilisation in a male dominated society.

Female Sterilisation is one of the most commonly performed gynaecological operations in our country. As a sterilisation method tubectomy out numbers vasectomy in developed countries as well. According to the Association for Voluntary Surgical Contraception, 66% of sterilisation procedures in USA were in women [1]. Menfolk with misconception about loss of virility rarely come forward to offer themselves for the relatively simple surgery of vasectomy. Being the decision-makers in the family it is an easier decision for the husband to subject the wife for a surgery when either is possible.

Female sterilisation has been performed over the years by various methods. The developments were primarily intended to reduce the failure rates by use of certain techniques and change of suture material. However, little attention was paid to the cosmetic importance of the scar till laparoscopic procedures appeared on the scene. Laparoscopic sterilisation (LAP-

STER) conferred a number of additional benefits, but the endoscope has the inherent limitation of approach to the large puerperal uterus. Puerperium is the time when a woman is well motivated to accept a permanent means of contraception. From the surgical point of view also the oviducts are easily accessible and hospitalisation need not be prolonged. Hence more than 50% of female sterilizations are puerperal. The question is how can they be given the advantages of lapster without the use of a scope? This paper is the result of an effort to answer such a question.

Techniques In Practice

The first tubal sterilisation reported in the United States more than 100 years ago consisted of ligating the oviducts with a silk ligature about an inch from their uterine end [2]. Subsequently it became apparent that an unacceptably high failure rate resulted from ligation without resection. Hence, a variety of techniques are now employed to disrupt tubal patency. In spite of estanlished techniques in practice development of new ones is also a continuous process [3].

Conventionally, the incision for puerperal sterilisation is given on the abdomen about 2 to 3 cms below the level of the fundus. It may be transverse or midline and about 3 to 5 cms long. The abdomen is opened in layers and the tubes are hooked out with the fingers. Alternatively, retráctor and tissue holding forceps are utilised. Ligation /excision is carried out by

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Pomeroy's, Uchida's Irvings or Kroener's technique [4]. The procedure results in damage to about 4 to 5 cm of tubal length and a prominent abdominal scar.

The lapster involves an incision on the umbilical fold, introduction of Veres needle and creation of pneumoperitonium followed by trocar entry and passage of telescope. Direct trocar entry as well as open laparoscopy have their proponents [5,6]. Application of a silastic ring at the base of a loop of tube is done with laprocator. The fascia and peritoneum need no suture. There is one suture in the skin. This results in a small, hardly visible scar hidden in the umbilical fold. Only 2 cm tube length is affected giving an excellent chance of reversibility. Day care/short hospital stay are secondary benefits.

WHO task force on the subject has reported extensively on the benefits of a lapster over a minilap [7]. DeStefano and co-workers have compared the morbidity between puerperal and interval procedures [8].

The proven advantages like cosmetic scar, reversibility and negligible morbidity of lapster are unavailable to puerperal patients, as the uterus is too large for safe trocar entry. Keeping in mind, the limitation offered by such a uterus we have used the following technique of puerperal sterilisation.

Our Technique

The site of incision is subumbilical semilunar as chosen for the trocar entry for a laparoscope. The size is approximately 2 cms. The sheath is identified after dissection of the subcutaneous tissue and held with two pairs of Allis's forceps. Anatomically, the umbilical plate is formed here and the peritoneum is fused with the sheath. Hence, on incising the plate one usually reaches the peritoneal cavity. The fallopian tubes are hooked with the fingers by the surgeon and delivered at the incision. The process is greatly assisted by the assistant guiding the uterus to the incision with external manipulation. The manoeuvre is not at all difficult since the uterus is large and mobile.

At this stage, conventional Pomeroy's ligation can be done, but that would only alter the abdominal scar. Hence our preferred alternative is to use the ring applicator without endoscope. The tube is held with the tongs of the applicator under direct naked eye vision and the ring is fired. The procedure is repeated on the other side.

The umbilical plate consisting of the sheath and peritoneum is sutured with any delayed absorbable material (Vicryl) in one layer. The edges of the small skin incision are held with a pair of Babcock's tissue

holding forceps for a minute. At the end a benzene seal is applied. The patient is fit for discharge after a short hospital stay. The patient is reviewed during postnatal visit after 6 weeks with particular reference to the cosmetic value of the scar and patient satisfaction.

Material and Method

A prospective, randomised case control study for the evaluation of the technique described above was done. All cases were operated upon by the same surgical team. Following criteria of inclusion were undertaken.

1. Delivery within last 48 hours.
2. No evidence of any infection.
3. No chronic respiratory disorder.
4. No previous abdominal surgery.

Cases included in each group were selected at random. For the patients in Group A (control) Pomeroy's tubectomy with a conventional transverse skin incision was done. The patients in Group B (case) were subjected to the technique described above. Prophylactic antibiotics were not instituted. Parenteral analgesia on the day of surgery and oral on first postoperative day was administered. There after analgesics was administered on SOS basis.

Fitness for discharge was based on afebrile and comfortable state of the patient. Stitches were removed for patients in group A after five days. Patients in both the groups were reviewed after six weeks. Patients with delayed complication like keloid formation, hernia or failure were requested to report personally to the author or inform by post. The outcome measures were as follows:

1. Operating time.
2. Cosmetic value of the scar in a numerical score as marked by the patient at her postnatal visit. The patients were requested to give a score out of 10 for the cosmetic value considering factors like concealment, scar size and prominence.
3. Cosmetic value of the scar as marked out of 10 by a doctor other than the surgeon considering length, concealment, suppleness and needle puncture marks.
4. Post-op morbidity as assessed by fever/wound sepsis/fitness for discharge/analgesic requirement.
5. Keloid formation at a later date.
6. Failure if any.

Results

135 consenting patients were included for prospective study. 70 of them were in group A and 65 were in group B. 8 patients from the former and 5 from the latter did not turn up for their postnatal visit. Hence data of remaining patients is included in the study.

The average operating time for Group A patients was 10.9 minutes (Range :8.1 to 12.2) and Group B was 8.7 minute (Range 7.4 to 10). The cosmetic scoring by the patient in a numerical scale is summarised in Table 1. The result of the evaluation by the doctors, is given in Table 2. Post operative morbidity evaluated by pre determined parameters is summarised in Table 3.

As far as follow-up is concerned, only 27.4% in group A and 25% of the patients in group B reported at one year. Keloid was reported in one case which belonged to group A. No failure was reported in either group. However it is a problem which comes up

after variable periods of time and can be commented upon only after a long term follow up.

TABLE 1
Cosmetic score by the patients

Group	Score 1-4	Score 5-7	Score 8-10	Mean score
A (n=62)	2 (3.1%)	48 (77.35%)	12 (19.35%)	7.2
B (n=60)	NIL	7 (11.66%)	53 (88.33%)	9.1

($\chi^2=53.54$, $df=2$, $p < 0.001$)

TABLE 2
Cosmetic evaluation by the doctors

Group	Score 1-4	Score 5-7	Score 8-10	Mean score
A (n=62)	4 (6.45%)	40 (64.5%)	18 (29.3%)	7
B (n=60)	1 (1.66%)	9 (15%)	50 (84.33%)	8.6

($\chi^2=36.44$, $df=2$, $p < 0.001$)

TABLE 3
Post operative morbidity

Morbidity	Group A (n=62)	Group B (n=60)	p value
Persistence of fever for more than 24 hours	5 (8.06%)	3 (5%)	> 0.05
Wound sepsis	3 (4.83%)	1 (1.6%)	> 0.05
Not fit for discharge after 24 hours	36 (58.06%)	15 (25%)	< 0.01
Analgesic need after 48 hours	34 (54.83%)	15 (25%)	< 0.01

Discussion

The difference in operating time between the conventional method and the method evaluated is significant. As all the cases have been operated by same surgical team interpersonal difference has been largely obviated.

The evaluation of cosmetic value has been done from two angles that is both from the patient and peer's view. The results have been uniformly more acceptable for group B. It appears that the patients are more liberal in their assessment than the doctors as the average score by the patient has been 7.2 and 9.1, the same by the doctor having been 7 and 8.6 for group A and group B respectively. In group B the percentage of subjects with a score of more than 7 is significantly higher when compared to group A ($p < 0.001$). The scoring system is subjective but the

aesthetic value can always be subjective at best. The length of a scar is a measurable index which has been found to be 4.1 and 2.2 cms on the average for group A and B respectively. Keloid formation is a problem which may be frequently encountered in any scar. Only one case belonging to group A has reported this problem which is not statistically significant.

A small and concealed scar is always cosmetically more appealing, but the secondary outcome of post operation morbidity is very important. In fact, reduction of morbidity due to female sterilisation has been identified as one of the priority among nine possible areas of research by WHO steering committee [9]. An attempt was made to compare the same in both the groups in our study. The percentage of patients with persistence of fever and wound sepsis in the two groups did not reach any significant difference ($p > 0.05$) though numerically fewer in group B. However, it was observed that analgesia need for group B was for a shorter period ($p < 0.01$). Large number of group B patients were also fit to go on discharge earlier (< 0.01). Reduction of average length of stay in the hospital is of public health importance and it is necessary that techniques contribute to this end.

Over the years the demography in relation to parity at which sterilisation is sought is changing. Since a permanent method of sterilisation is being sought at a parity of two, the scope of reversibility assumes importance. The smaller the segment of occlusion, better is the chances of reversal in case it is needed. By application of Fallop's ring only 2 cms of the Fallopian tube is sacrificed whereas in conventional Pomeroy's tubectomy 4 cms of the tube length is damaged. The difference in successful surgical reversal between the two methods has been reported as 16% [10]. Hence application of the rings even in the open method of sterilisation will offer a better chance of anastomosis in case of any unfortunate incidence involving the children.

Though the question of failure has been raised in relation to ring application the problem is because of wrong application or use of defective material [11] and should not be attributed to the method. The limitation for performing sterilisation by this technique is that the surgery is needed to be undertaken within 72 hours of the delivery. Further involution of the uterus can pose technical difficulties.

It can be concluded that the technique for carrying out puerperal sterilisation described and evaluated in this study can result in a good cosmetic scar and reduce postoperative morbidity. Good prospect of re-

versibility in case of need will be additional benefit.

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