

VAGINAL LIGATION UNDER LOCAL ANAESTHESIA—A SIMPLIFIED TECHNIQUE

by

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Introduction

Female sterilization has been more or less accepted as a standard method of fertility control, either on therapeutic or socio-economic grounds. Hitherto, the abdominal approach has been universally preferred and sterilization performed in the immediate puerperium within 48 hours of delivery when the operation is simple and convenient for the patients. General debility, anaemic states of mothers and high neonatal mortality in this country have recently led to a re-thinking of the timing of such operations and at the present day an internal operation 8-12 weeks after delivery appears to be preferable.

Vaginal approach or these internal operations in preference to the abdominal method had been previously advocated by Green Armytage (1958) and Purandare (1960) where the approach had been through the anterior pouch but did not find much favour except when performed in association with operations for genital prolapse because of the technical difficulty and the need for drainage of bladder for several days.

With the advent of a new operating panculdoscope (Clyman, 1968) having

a better lighting system and wider field of vision, a new vista has been opened up not only for visualisation of the pelvic viscera but also exploring the operative possibilities. Culdoscopic vaginal ligation (Guttierrez, 1970) have become widely popular as an interval procedure because of its technical superiority, avoidance of general anaesthesia, and minimisation of hospital stay to only 24-48 hours.

Interval tubal sterilization via laparoscopy by endothermic conglutination (Liston *et al*, 1970) or cauterisation and excision (Melvin *et al*, 1970) has recently found a new place in the armamentarium as a precision surgical procedure which avoids an abdominal scar with its added risks.

Renewed interest has been created for internal vaginal ligations through the Pouch of Douglas and satisfactory results have been reported by Seth (1968) Purandare (1970), and Tamasker (1970) using general or spinal anaesthesia with hospital stay from 2 to 6 days with minimum complications.

The present technique of vaginal ligation under local anaesthesia by the authors was developed on the principles of culdoscopic ligation but without the use of a culdoscope so as to develop a simple operative procedure with a minimal hospital stay and at the same time discarding the use of such a costly sophisticated instrument which may not be available universally.

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Technique

Analgesia is achieved with pethidine 75 mg. & phenergan 25 mg. intramuscularly half an hour before operation and 6-8 c.c. of intravenous pethidine 100 mg., phenergan 25 mg., largactil 25 mg. dissolved in 20 c.c. distilled water just before the patient is positioned for the operation.

The patient is placed in ventral face down position with legs hanging from the edge of the table which is placed in a high Trendelenburg position. Two sand bags are placed under the groin to lift the pelvis up and keep the abdomen free so as to allow the intestines to fall back towards the diaphragm. (Fig. 1).

A Landon's vaginal retractor is placed in the posterior fornix and the posterior lip of the cervix is drawn by a vulcellum so as to expose the posterior cul-de-sac. At this stage the mobility of the uterus is confirmed by moving the cervix by the vulcellum.

0.5 ml. of 1% xylocaine is injected into the maximum concavity of the posterior fornix in the midline. (Fig. 2). Puncture is first made by a trocar of very small diameter which on removal allows air to enter the peritoneal cavity audibly. The larger standard culdoscopic trocar is now passed through this opening and the posterior fornix is readily punctured (Fig. 3). A long straight clamp or an uterine dressing forceps is now used to spread the distal ends of the punctured site so as to enlarge the opening to 3-4 c.m. (Fig. 4). The Landon's retractor is now introduced through this enlarged opening inside the pelvic cavity and retraction made towards the sacrum when the uterine fundus comes into view. Manipulation of the uterus may be suitably carried out by introducing either a sound, a dilator or an uterine dressing forceps inside the uterine cavity so as to push the fundus further

backwards and expose the uterine cornu and facilitate delivery of the fallopian tube inside the vagina. The uterine cornu is now pulled downwards by a Babcock's forceps when the tube becomes visible and is brought out by holding with a curved uterine dressing forceps (Fig. 5). In case of difficulty, the ovary may be pulled downwards and the tube identified. Ligation is then carried out by a modified Pomeroy's technique with an additional silk ligature at the medial end of the loop for extra safeguard (Fig. 6). The same procedure is now repeated on the other side. The tubes are then placed inside the pelvic cavity and the vaginal fornix closed by one figure of eight mattress suture taking the peritoneum and vaginal mucosa together after expelling the air from the peritoneal cavity by pressure on the abdomen. (Fig. 7). The patient is then placed in dorsal position, the patient is discharged on the same day.

Results

Sixty-two cases have been operated by this technique during the last five months. Analgesia was perfect in all the cases and there were no postoperative complications so far. Two cases needed readmission within a week of the operation—one for abdominal pain and fever which subsided with antibiotics and the other for abdominal distension which on laparotomy proved to be due to appendicular perforation.

Discussion

Vaginal ligations had been hitherto performed mostly in association with operations for genital prolapse. For purpose of sterilisation per se, it did not find much favour because of the technical difficulty and of the popularity of the abdominal method in the immediate postpartum period which appeared to be simple and

advantageous for the patients, as it avoided a separate hospitalisation. But reports of increased incidences of complications like incisional hernia, particularly in our anaemic and nutritionally deficient patients and higher incidences of menstrual disturbances and hydrosalpinges in the immediate postpartum ligation cases have led to a rethinking of the advisability of such procedures. Moreover, because of the high perinatal and neonatal death rate in our country, the foetal survival cannot always be guaranteed in the immediate postpartum period and as such both the patient and the obstetrician might often feel hesitant to make a decision for such a permanent procedure at that stage.

Interval ligations 8-12 weeks after delivery obviates many of these hazards and herein comes the question of selection of a safe and simple technique without undue load on the hospital beds in already overcrowded hospitals. Vaginal ligation by the technique described serves that purpose well, minimising the hospital stay to only one day compared to a stay of 5.3 days by other techniques (abdominal or vaginal) as worked out in a separate study in the same institution. Moreover, the hazards of general or spinal anaesthesia are also done away with by using only local anaesthesia supplemented by intravenous analgesia.

But the selection of cases for this procedure is of paramount importance to avoid complications. The uterus should be freely mobile and pouch of Douglas free from adhesions. Deep vaginal fornices, long narrow vagina and obese patients are likely to produce technical difficulties in the procedure and a proper preoperative assessment is thus imperative.

Careful gentle handling of the tissues is essential since any pull on the perito-

neum, ovary or the tubes produces pain and induces the patient to strain when the gut or omentum might obstruct the field of vision making the operation difficult.

A sound or a dilator introduced into the uterine cavity to manipulate the uterus so as to facilitate delivery of the tubes is a very helpful adjunct, but great care should be taken not to perforate the uterus.

With little practice and experience, the operation can be completed within 5 to 8 minutes and the patients discharged on the same day. Thus, it would also be a very suitable procedure for any mass sterilisation programme.

Summary

A simple technique of vaginal ligation under local anaesthesia has been described.

The method is safe, can be performed in 5-8 minutes and patients discharged the same day.

Postoperative pain and complications are minimum and acceptability by the patients very high.

Load on hospital beds in overcrowded hospitals can be greatly minimised by adopting this technique.

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References

1. Clyman, J. M.: *Obst. & Gynec.* 32: 840, 1968.
2. Cohen, R. M., Taylor, B. M. and Kass, B. M.: *Am. J. Obst. & Gynec.* 108: 458, 1970.
3. Downie, J. L., Brudford, W. and Kerr, M. G.: *Lancet.* 1: 382, 1970.

4. Green Armytage, V. G. and Smith, R. C.: *Operative Surg.* 6: 107, 1958.
5. Guttierrez, A. J. N.: Personal Communication, 1970.
6. Purandare, B. N.: *J. Asian Fed. Obst. & Gynec.* 1: 83, 1970.
7. Seth, S. S. and Batliwalla, P.: *J. Obst. & Gynec. Ind.* 18: 274, 1968.
8. Tamaskar, P. K.: *J. Obst. & Gynec. Ind.* 20: 421, 1970.

See Figs. on Art Paper II-III