VAGINAL STERILIZATION BY COLPOTOMY—AN OUTDOOR PROCEDURE

by

KUMUD P. TAMASKAR,* F.R.C.S., (ED.& GI.), F.I.C.S.

Vaginal sterilization by colpotomy is not a new procedure. It has been advocated by Green Armytage in 1950 and Purandare in 1960. A good technique is one which is safe, easy and inexpensive. Vaginal sterilization is one such, provided it has been learnt properly. Author has been practising this method since 1965 and has gradually modified the technique.

This paper shows the ease with which colpotomy can be carried out and can be equated with the recent outdoor procedures of laparascopy and culdoscopy. Four hundred and fifty-eight cases were done personally by colpotomy, laparoscopy and culdoscopy, hence the merits and demerits of the three techniques can be compared. All the methods are easy with practice. It is beyond doubt that there can be no single method which can be universally accepted because there are economical differences and differences in physical configurations. Lot of literature has come up from the west, Japan and India. The secret of good result lies in eliminating infection by minimal handling of the viscera at operation, and this is shown in the author's technique.

Material

This series includes cases done at the Govt. General Hospital, Nagpur and in author's private Clinic. Few cases were admitted from the outpatient dept. of the Govt. Gen. Hospital, but the majority were brought specially for this procedure by the medical and paramedical personnel of the Nagpur Zila Parishad from an area around 50 miles of Nagpur. Some of these patients were brought to the author's private clinic by them because female sterilization for Zila Parishad patients were done free. Outstation patients were admitted the previous evening or on the morning of the operation day. Routine medical check up and blood pressure, haemoglobin and urine examination were done in all cases. Suitability for vaginal approach was decided at the preliminary examination. No special preparation except shaving was done. Patients admitted the previous evening were given enema on the morning of operation. In the case of patients admitted in the morning bowel clearance was confirmed.

Selection of Cases

Selection of cases was done on the following criteria:

1. There should be no pelvic infection, present or past. The uterus should be freely mobile and culdesac free.

2. Vagina should not be too deep, as the approach to the viscera becomes difficult.

3. There should be no menstrual disorder.

*Hon. Obst. & Gynaecologist, Govt. General Hospital, Teacher in Indira Gandhi Medical College. Nagpur. Specialist Diagnostic Centre E.S.I.

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With past pelvic infection opening of the pouch of Douglas and delivery of the tubes through colpotomy incision becomes difficult. If there is menstrual disorder it is better to do hysterectomy rather than tubectomy, otherwise persistant menstrual disorder is wrongly attributed to the operative technique.

Classification of Cases

Total	Laparascopic	Culdoscopic	Colpotomy
458	150	25	283

Anaesthesia

To facilitate early discharge and to avoid the complications of spinal or general anesthesia, in almost all cases local anaesthesia combined with Campose and Pethidine was used. Earlier 117 cases were done under spinal anaesthesia; because of the good relaxation and the intestines do not crowd the operation field, so the operation is easy. But the occasional spinal headache and prolonged hospital stay deterred the author from using it, besides the technique was well practised. Only a very few cases done under local anaesthesia required supplimentation with sodium pentothal.

Before local anaesthesia is infiltrated the patient is given 10 mgms of Campose and 50 mgm of Pethidine intravenously on the table by two syringes. When M.T.P. was done before sterilization 20 mgm Campose used instead of 10 mgm. Paracervical block was done by injecting 2 ml. 1% Xylocain at 3, 5, 7 and 9 O'clock positions. Half ml. xylocain was infiltrated at the site of incision, for opening the pouch of Douglas. More Xylocain here would separate the vaginal mucosa from the peritoneum and make its opening difficult. Following is the break up of the cases in this series:

Thus of the above 283 colpotomies 166 were done under local anaesthesia, and 117 under spinal. The results of the cases done under local anaesthesia can be classified as under:

1. Very satisfactory: When the procedure was completed without any pain or discomfort to the patient. The patient felt well sedated.
2. Satisfactory: When the operation was completed with only slight discomfort.
3. Fairly satisfactory: When the patient complained of pain but the operation could be completed easily.
4. Unsatisfactory: Operation could not be completed and intravenous pentothal was required as a suppliment.

Based on these criteria the result can be classified:

Very Satisfactory	Satisfactory	Fairly Satisfactory	Unsatisfactory
125	17	8	16

Operative Procedure

Colpotomy is done in lithotomy and 15 degree Trendelenberg position. The buttocks are brought 2″ beyond the edge of

Cold Sterilization		Vag. stzn. with suction	Early Post Partum Stzn.	Vag. stzn. after Saline	Vag. Stzn. with other Gyen. Ops.	Total
	178	74	23	6	2	283
Under Local Anaes.	134	22	8	2	0	166
Spinal	44	52	15	4	2	117

the table to facilitate the movement of the vaginal speculum. Operation field is cleaned with savlon, and draped. Local anaesthesia is infiltrated as described above. Holding the vaginal mucosa with two Allis forceps in antero posterior direction the peritoneum of pouch of Douglas is opened with one bold snip of scissors. The opening is widened by opening the blades of scissors introduced into the peritoneal cavity, this avoids bleeding from the vaginal edges. During this procedure the posterior lip of the cervix is held with a vulcellum and brought forwards towards the symphysis pubis by an assistant.

The lighted speculum designed by the author specially for vaginal sterilization (J. OB. & Gy. Ind., Vol. XXIII, No. 3, June 1973) is introduced into the peritoneal cavity. The speculum was designed in 1970 and has since been used for this and other purposes. The blade has now been made narrower and longer so that it can be introduced through a smaller opening deep into the pelvic cavity and tubes visualised. Lately we have made arrangement in the blade for attaching a fibreoptic light. The intensity of light with good torch cells is almost as good as that of fibreoptic light. The only advantage of the fibreoptic light is that there is no flicker, which is some times found due to movement between the blade and the handle of the instrument.

Posterior wall of the vagina is retracted with the vaginal speculum, a vulcellum pulls the posterior lip of the cervix towards the symphysis, and the blade of the lighted speculum retracts the uterus forwards and to one side. The tube of the opposite side comes into view, it is grasped with a long non-toothed dissecting forceps and gradually drawn down into the vagina and simultaneously the blade of the lighted speculum is withdrawn from the peritoneal cavity lest there is tension on the tube and it gets torn. The tube having come into the vagina is grasped with a long Allis forceps and dealt with Pomeroy's or Madlner's technique. The lighted speculum is reintroduced and the other tube dealt with similarly.

With the lighted speculum, which is a half blade of a sims speculum with light, retraction of the uterus is easy and non traumatic, we get the concavity to work in. There is no need to make the uterus retroverted, either by a sound or manipulation or by suprapubic pressure. This reduces the intraperitoneal manipulation and thus incidence of infection.

The blood in the peritoneal cavity is mopped dry, after dealing with the tubes. The vaginal mucosa and peritoneum are sutured in two layers with continuous catgut. Continuous suture gives good haemostasis and a smooth suture line and there is no eversion of edges with subsequent granulation formation, and hence freedom from leucorrhoea and dyspareunia. There is no necessity of packing the vagina after the operation. Antibiotics may be given in cases where one suspects infection may take place. The patient is discharged the same day or the next day.

In one case a loop was removed from the peritoneal cavity. It was lying attached to the fimbrial end of the right tube.

With proper selection of cases the operation is made very easy and quick as denoted by the time taken for operations. Time taken for different operations:

Time taken	Colpotomy	Laparascopic sterilization	Culdoscopic sterilization
Minimum	5 mts	7 mts	15 mts
Maximum	30 „	25 „	25 „
Average	12 „	15 „	20 „

More time is taken when sterilization is combined with M.T.P. Culdoscopic sterilization took more time as it was started recently.

Complications

Any procedure advocated should be ideally free from complications or should have minimal complications. All the procedures done in this series show very few complications and now they are reduced to the minimum.

	Visceral injury	bleeding	failed to complete	Pelvic infection
Vaginal stzn. 283	Inj. to rectum 1	1	2	2
Laparascopic stzn. 150	? intestinal perforation 1 Uterine perforation by Rubins Cannula 2	2	1	Nil
Culdoscopic stzn. 25	Nil	Nil	2	1

In colpotomy there was 1 case of injury to the rectum, the rent was sutured and abdominal tubectomy done; the patient made an uneventful recovery. In the laparascopic group, 1 patient was admitted on the 18th postoperative day as a suspected intestinal perforation but treated conservatively and discharged in a few days; there were no gross signs of peritonitis. In 2 cases of laparascopic sterilization the uterus was perforated with the Rubins cannula while manipulating by the assistant. Hence abdominal sterilization was done and the rent closed. Now the author does not open the abdomen in case of uterine perforation with cannula, in cases of Laparascopic sterilization, the patient is kept under observation.

There is no maternal mortality in any case. The morbidity reported by the author in 1973 in colpotomy procedure was 5.5% but today it is minimised to 0.7% which is comparable to the recent procedures.

Scope of Vaginal and Laparoscopic Sterilization

All three techniques, colpotomy, laparascopy and culdoscopy can be combined with Medical Termination of pregnancy. Colpotomy or laparascopic sterilizations can be done in early post partum period also. Earliest postpartum laparascopic sterilization was done on the 2nd day of delivery, while the earliest colpotomy sterilization was done on the 8th day of delivery.

No. of cases	Type of Operation	Time of Operation
31	Postpartum Laparascopic	Earliest 2nd day of delivery
23	Postpartum vaginal sterilization	Earliest on 8th day delivery

For early postpartum vaginal sterilization it is essential to have the uterus involuted to 14 weeks size or less. It is not essential to wait till after six weeks of delivery. It can be done earlier whenever the size of the uterus permits the vaginal approach, as intrauterine manipulation with a sound or other instrument, which may perforate the uterus is not done in this technique. On the contrary opening

of the pouch of Douglas is very easy in the postpartum period, though the bleeding is slightly more than in the cold cases. There were no cases of pelvic infection in the early postpartum vaginal sterilization. It is possible that the Indian women have more resistance to infection. In this series most of the patients were from the villages and of low socioeconomic group. Few were of middle income group. Author feels that low infection rate is due not only to the above but also due to the minimum manipulation in the pelvic cavity and perfect haemostasis.

Conclusions

Laparascopic, culdoscopic, hysteroscopic and mini sterilization are the recent techniques of female sterilization. Colpotomy is comparatively older. Hysteroscopic sterilization was not tried in this series because the instrument is not available. Laparascopic, culdoscopic and colpotomy operations are well accepted because they are known as stitchless operations.

Colpotomy is made an outdoor procedure by the author on the lines of the instrumental operations, by designing the lighted speculum and tube holding, McGill type forceps, and by doing the operation under local anaesthesia. The patient can be discharged the same or the next day. The procedure is made very easy hence the infection rate is minimised. Retroversion of the uterus is not essential and intrapelvic manipulations are minimised. The patient can not differentiate between the colpotomy and culdoscopy procedures as both are vaginal techniques. Six weeks abstinance does not come in the way of its acceptance. Scope of colpotomy and laparascopic sterilizations can be extended by proper selection to postpartum cases.

All the operations are easy after proper training and practice. But the essence of success lies in proper selection of cases, minimal manipulations and perfect haemostasis.

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