

POST-SALINE VAGINAL LIGATION OF TUBES

by

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and

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For the last five years vaginal ligation of tubes has been accepted as a simple and easy method of female sterilization. Since the implementation of Medical Termination of Pregnancy Act, we started vaginal ligation of tubes along with termination in suitable cases. In two groups of termination patients vaginal ligation of tubes are performed.

Group I: Pregnancy upto 12 weeks—in these cases termination and vaginal ligation of tubes are performed at the same sitting.

Group II: Pregnancy more than 12 weeks—termination by hypertonic saline solution is followed by vaginal ligation of tubes after 2-3 days.

Our subjects of study were the second group of cases. From May 1972 to

December 1974 in 338 cases post-saline vaginal sterilization were performed. Two hundred and two cases have been collected from N.R.S. Medical College Hospital from May 1972 to June 1974 and 56 cases from Medical College Hospital, Calcutta, from July 1974 to December 1974. All these cases were studied clinically during their pre-operative, operative and post-operative period. In addition, in 96 cases high vaginal swab was taken for bacteriological study, (for culture and sensitivity test) before injection of saline and after the expulsion of the products.

Analysis of the cases

On analysing the cases it has been found that maximum number of patients belonged to age Group 26-30 years. Table

TABLE I
Distribution of Post-Saline Vaginal Tubectomies According to Age in Years

| 21-25 | 26-30 | 31-35 | 35-40 | 41 or over | Total |
|-------|-------|-------|-------|------------|-------|
| 18 | 172 | 81 | 55 | 12 | 338 |

TABLE II
Distribution of Post-Saline Vaginal Tubectomies According to Parity

| P1 | P2 | P3 | P4 | P5 or More | Total |
|-----|----|----|-----|------------|-------|
| Nil | 9 | 83 | 118 | 128 | 338 |

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I shows the distribution of cases according to age. The operation was done in maximum number where the patient was para 5 or more. Table II shows the distribution of cases according to parity.

Operative Procedure

For Termination 20 per cent saline was used which was injected either through the abdominal wall or through the cervix. When the size of the uterus was less than 16 weeks, vaginal plugging was resorted to for lifting the fundus upward before transabdominal injection, or saline was given through the cervix. Depending on the size of the uterus 100 to 200 ml. of saline was injected after withdrawal of 50 to 100 ml. of liquor amnii. Inj. Syntocinon 5 units in 500 ml. of 5 per cent dextrose was started in drip, if painful uterine contractions did not start within 24 hours. In 74 per cent (255) cases expulsion occurred within 24 hours and in 24 per cent (76) cases it was delayed upto 72 hours. In 2 per cent (7) cases Saline injection was repeated.

Vaginal Ligation of Tubes: Procedure.

General anaesthesia with nitrous oxide oxygen, ether, pentothal and flaxedil was used in all cases except in 32 cases. In 2 cases, with past history of pulmonary tuberculosis and bronchial asthma, paracervical block and local infiltration with one per cent xylocaine was used. Ketalar (Ketamine hydrochloride) 10-15 ml. and flaxedil 20-40 mg. was used without intubation in 30 cases.

Before starting actual operation vaginal swab for culture and sensitivity test was taken. A piece of gauze was then introduced into the cervical canal to prevent soiling of the operation field by blood discharge from cervix. Vagina was swabbed thoroughly with cetavlon and fundus of uterus was manipulated bimanually to make it in line with vagina. Slight Trendelenburgh position and gentle traction on the posterior lip of the cervix in a forward and upward direction helped to

maintain this position during operation. In no case we had to use any instrument to keep the uterus retroverted.

Technique followed for vaginal ligation of tubes was as described by Poddar (1972) with slight modification. A small cut was made on the vaginal wall just above cervico-vaginal junction in the midline and then the wound was dilated as in Hilton's method, thus pushing the vertical vessels laterally. Peritoneum was cut similarly. The incision was just sufficient to introduce a Landon's retractor. Vagina and peritoneum was cut separately so that in case rectal injury occurred there was no chance of soiling the peritoneal cavity. Incidence of rectal injury in vaginal ligation cases have been mentioned by Rao (1972) as 0.33 per cent. In our interval ligation series in 4 cases out of 884 (i.e. 0.45 per cent) cases rectal injury occurred. Landon's retractor was then introduced through the peritoneal opening. With angled tonsil holding forceps directed laterally backwards and slightly upwards, the ovary was drawn down with traction on ligament of ovary. The tube was usually seen along with the ovary. In some cases we used our fingers to bring down the tubes specially when the fundus was bulky. The tube usually at its middle third was then cut in between two forceps applied in wedge shaped fashion and ligated on either side with catgut or silk. Part of the tube was also excised. Peritoneum and vaginal wall are sutured separately with catgut. Average time taken for the operation was 15-20 minutes. At the end of the operation the cervical plug was removed and the fundus was manipulated very gently to become anteverted again. Antiseptic powder was sprayed at the incisional site. In no case we had to open the abdomen for ligation.

Results

During the immediate post-operative period there was a rise of temperature (more than 100°F) in 9 cases only. One patient attended after 3 weeks for pain in abdomen. On examination parametritis was detected. In this case there was history of sexual relationship after 2 weeks of operation (Table III).

During follow up examination 4 weeks after the operation, induration and formation of granulation tissue along the line of scar was usually found after ordinary vaginal ligation, but in post-saline cases the site could rarely be identified. This might be due to excessive vascularity during pregnancy. Average hospital stay was 6 to 8 days including the time of induction of abortion. No case has yet turned up with pregnancy.

Results of Bacteriological Study

Organisms most commonly isolated from vaginal swab culture during pre- and post-abortion period were staphylococcus aureus and E. Coli. Clinical evidence of infection was observed in 9 cases in the form of pyrexia which might be due to mild local infection. In 6 cases (though pre-induction swab showed no growth of organisms) E. Coli was isolated during post-abortion period. In one case E. Coli isolated was resistant to all antibiotics (Table IV).

Comment

Post-saline vaginal ligation of tubes has got definitely some advantages:

1. It shortens the hospital stay of the patient when they are admitted for termination and sterilization. In post-saline

TABLE III
Postoperative Complications

| Postoperative complication | Evacuation + vaginal ligation | Post-saline ligation |
|----------------------------|-------------------------------|----------------------|
| Fever 100-102°F | 14 cases | 9 cases |
| Parametritis | 2 cases | nil |
| T.O. Mass (Delayed) | 2 cases | nil |
| Pregnancy | 1 case | nil |
| Secondary haemorrhage | nil | nil |
| Rectal injury | nil | nil |

TABLE IV
Results of Bacteriological Study of High Vaginal Swab Culture

| Before Termination: | | After Termination: | |
|---------------------|--------------|-----------------------------|--------------|
| Organisms isolated | No. of cases | Organisms isolated | No. of cases |
| No growth | 8 | No growth | 2 |
| E. Coli | 25 | E. Coli | 54 |
| Staphylo aureus | 34 | Staphylo aureus | 29 |
| Staphylo albus | 19 | Klebsella | 6 |
| Monilia | 10 | E. Coli and Staphylo aureus | 5 |
| Total: | 96 | Total: | 96 |

abdominal ligation cases average hospital stay is 12-14 days. And in abdominal hysterotomy and ligation cases though the average stay is 6-8 days, the morbidity after this operation is very high, particularly when done in poor surgically risk patients in our country.

2. The patient is fit to resume her normal household duties with a short period of rest. On an average 2 weeks rest is sufficient.

3. It is more appealing to the patient since abdomen is not opened.

Difficulties that may take place during operation in post-saline cases are:

(i) Soiling of field of operation from blood discharge from cervical canal—could be prevented by plug.

(ii) Excessive bleeding from vaginal incisional site due to increased vascularity which could be minimised by dilating the vaginal wound laterally.

(iii) Injury to tubes—since more soft and friable—fingers could be used to avoid it.

(iv) About infection — Bacteriological study showed that there is a chance

of sepsis which could be minimized by taking all aseptic precautions and by starting antibiotics from the day of induction.

It is too early to give any opinion about the delayed effects of the operation. Routine interrogation has so far revealed no significant variation attributable to sterilization alone.

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