FIRST TRIMESTER TERMINATION OF PREGNANCY WITH CONCURRENT VAGINAL STERILISATION

by

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Vaginal sterilisation by posterior colpotomy has become an accepted procedure in our country during the past 10 years. It is a technique largely used for interval sterilisation both in hospitals as well as tubectomy camps. Since the implementation of the Medical Termination of Pregnancy Act in April, 1972, the possibility of vaginal sterilisation along with first trimester termination of pregnancy has been considered and is in practice in large number of centres in the country during the past few years. The two procedures are combined because of the technical feasibility when the pregnancy is within 12 weeks and secondly because of easy motivation and also patient's willingness for permanent contraception at such time. Another important point in combining the two procedures is that the same woman may not be able to come again for sterilisation, either interval or puerperal, later. The purpose of this study is to analyse in details the various aspects of first trimester termination of pregnancy along with vaginal sterilisation to find out whether it is a safe procedure and whether it can be recommended for general use.

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Material and Methods

The material consists of 700 consecutive cases of first trimester termination of pregnancy in combination with vaginal sterilisation by posterior colpotomy done in the Department of Obstetrics and Gynaecology, Gauhati Medical College, Gauhati, Assam. Termination of pregnancy was mostly done by suction aspiration but in some cases dilatation and evacuation was also done. The sterilisation was done by posterior colpotomy with ligation and partial excision of the tubes by Pomeroy's technique.

Operating Technique

With the patient in the lithotomy position, a thorough vaginal examination is done to exclude any vaginal infection or pelvic pathology. The termination is performed first, either by suction evacuation or by dilatation and evacuation. Dilatation was done by Hegar's dilator upto the extent required. A plastic cannula of suitable diameter was mostly used for suction evacuation besides using the metallic cannula occasionally. Though the ideal size of the uterus for suction evacuation is 8 weeks, it can be done easily upto 10 weeks and with some care upto 12 weeks. Dilatation and evacuation were performed in the conventional way.

Vaginal ligation of tubes were done by Pomeroy's technique by opening the pouch of Douglas. Separate sets of vagi-

nal sheets and instruments were used after evacuation to have a clear field. The size of the uterus becomes smaller after evacuation. The posterior vaginal wall was held in the midline by two Allis tissue forceps vertically just above the cervico-vaginal junction and was then opened by bold cut with scissors. The opening is then enlarged by Hilton's method. A Landon's retractor is then placed in to retract the vaginal wall, when under direct vision the tubes are identified one by one and traced out after holding with long plain dissecting forceps. In a few cases the tubes had to be brought in view with slight traction on the ovarian ligament. A loop of the tube in its middle third is then clamped, tied with chromic catgut suture and then cut. Peritoneum and vaginal wall are then stitched together with continuous catgut suture. The average time taken for these combined procedures was about 20-40 minutes.

Age Incidence

The age of the patients in this study ranged from 20 years to 40 years and the maximum number of cases were found in the age group of 21 to 30 years (68%) as shown in Table I.

Parity Distribution

The parity ranged from 2 to 9 and the maximum number of patients were para 4 (30%) Table II.

Socio-economic status and education

In the present series about 45% belonged to the low income group, 37% to the middle income group and only 18% to the high income group.

Only 35% of cases had education from high school standard to university level. 25% were illiterate. Most of the cases had education upto middle school or below.

Duration of Pregnancy: (Table III)

It may be noticed that majority of the cases (315) were between 7-8 weeks whereas only 56 cases were of 12 weeks and 182 cases were between 9-10 weeks of gestation. The duration of gestation was determined more by the size of the uterus than by the period of amenorrhoea although both were taken into account. The procedure was found more difficult as the period of pregnancy increased. The optimum gestation period suitable for the procedure was found to be around 8 weeks.

TABLE I
Age Distribution

	20 Yrs.	21-30 Yrs.	31-50 Yrs.	Total
No. of cases	14	476	210	700
Percentage(%)	2%	68%	30%	100%

TABLE II
Parity Distribution

	P_2	P_3	P_4	P_5	Above P_5	Total
No. of cases	49	175	210	147	119	700
Percentage(%)	7%	25%	30%	21%	17%	100%

TABLE III
Duration of Pregnancy

	6 weeks	7-8 weeks	9-10 weeks	12 weeks	Total
No. of cases	147	315	182	56	700
Percentage(%)	21%	45%	26%	8%	100%

Methods of Termination: (Table IV)

Suction aspiration was done in 364 cases (52%). It may be noticed that dilatation and evacuation was also done in 259 cases (37%) whereas vaginal sterilisation was done following menstrual regulation by Karman syringe in 11% of cases. In the beginning of this study dilatation and evacuation was done.

Type of anaesthesia: (Table V)

Paracervical block with or without sedation was used in 63% of cases, sedation alone (Morphine 15 mg. intravenously/Pethidine 100 mg. i.v./Calmpose 10 mg. with Atropine 1/100th gr. i.v.) was used in 6% and general anaesthesia was necessary in 29% of cases. It was used when patients were apprehensive or when they specifically asked for it In some cases it was selected by the Surgeon. Spinal anaesthesia was used in 2% of cases. Although the operation could be easily done in a thin and co-operative patient with local anaesthesia alone, it became much easier when local anaesthesia is combined with sedation. It helps to avoid general anaesthesia.

Complications

These are grouped into:

(a) Complications during operation (Table VI).

(b) Complications during postoperative period (Table VII).

(c) Complications during initial check up or later (Table VIII).

During operation the incidence of bleeding was 0.7%. In one case there was severe haemorrhage which was due to slipping of ligature after cutting the loop of the tube. The case was then tackled by immediate laparotomy and tying of the tube. In others, bleeding was due to perforation. Perforation was more during menstrual regulation (0.4%). It is probably due to inexperience of the surgeon.

TABLE IV
Methods of Termination

	MR + VS	SE + VS	D & E + VS	Total
No. of cases	77	364	259	700
Percentage(%)	11%	52%	37%	100%

TABLE V
Type of Anaesthesia

	L.A.	L.A. + Sedation	Sedation	G.A.	S.A.	Total
No. of cases	175	266	42	203	14	700
Percentage(%)	25%	38%	6%	29%	2%	100%

TABLE VI
Complications During Operation

Complications	MR + VS	D & E + VS	SE + VS	Total	%
Haemorrhage	2	1	2	5	0.7%
Uterine perforation	3	1	1	5	0.7%
Rectal injury	-	1	1	2	0.3%
Failure in getting tubes	-	1 (Big uterus)	1 (due to adhesion)	2	0.3%

Three were repaired through posterior colpotomy wound due to their smaller size and posterior position. The other 2 needed laparotomy for repair. Dass and Mukhopadhya (1975) reported an incidence of 0.3% of uterine perforation by metal cannula in 340 cases. There was rectal injury in 2 cases (0.3%) in this series. In 2 cases out of 700, the tubes could not be ligated from below because of bigger size of the uterus in 1 case and previous adhesion in the other. These were done abdominally.

During the postoperative period haemorrhage occurred in 2 cases (0.3%) due to incomplete evacuation and repeat curettage had to be done. Dass and Mukhopadhya (1975) reported an incidence of 2% cases of retained products in 340 cases. Pyrexia of 100°F and above was seen in 7 cases (1%), whereas Poddar *et al* (1976) observed such in 14 cases amongst 215 cases of their study and Dass and Mukhopadhya (1975) in 8.6% of cases. Mild pelvic infection was found in 1 case.

TABLE VII
Postoperative Complications

Complications	MR + VS	D & E + VS	SE + VS	Total	%
Haemorrhage	-	2	-	2	0.3%
Pyrexia 100°F and above	1	3	3	7	1%
Incomplete evacuation	-	2	-	2	0.3%
Infection	-	1	-	1	0.1%

TABLE VIII
Complications During Initial Check-up and Later

Complications	MR + VS	D & E + VS	SE + VS	Total	%
Pelvic infection	1	8	7	16	2.3%
(a) Parametritis	1	5	7	13	1.8%
(b) T.O. Mass	-	3	-	3	0.4%
(c) Abscess	-	-	-	-	-
Incomplete evacuation	3	7	5	15	2.1%
Secondary haemorrhage	1	1	-	2	0.3%
Pain in abdomen	8	22	14	44	6.2%
Menorrhagia	3	14		25	3.5%

In this series, pelvic infection was noted in 16 cases (2.3%) during initial follow up, which included 15 cases of parametritis and 3 cases of T.O. masses. Dass and Mukhopadhya (1975) found pelvic infection in 9.4% of cases. Sogolow (1971) in a series of 124 cases of vacuum aspiration with vaginal sterilisation observed an infection rate of 9.7%. Rao (1971) presented 1821 cases of vaginal sterilisation which included 9 cases of pelvic abscess and 3 deaths following peritonitis. Incidence of incomplete evacuation was 2.1% in this series. Out of 15 cases, only 3 were re-admitted, in others check D&E was done as outpatient procedure. Two cases of secondary haemorrhage (0.3%) due to gaping of the colpotomy wound following infection were re-admitted. Secondary sutures were re-admitted for heavy bleeding due to incomplete evacuation and needed repeat dilatation and curettage.

Mortality

One case expired during late postoperative period; she had haematemesis due to P.U.S. and developed uraemia. The patient expired on the eighth postoperative day. Another case re-admitted for pelvic infection expired after conservative treatment. Thus the overall mortality in this series is 0.28%. The difference between vaginal sterilisation alone and concurrent sterilisation is shown in Table IX. The complications recorded in this series are compared with 400 random cases of interval sterilisation performed in this department during the same period.

TABLE IX

Complications Following Interval Sterilisation and Termination With Current Sterilisation

Complications	Interval Sterilisation (400 cases)	M.T.P. with Sterilisation (700 cases)
Pain abdomen	5.34%	6.2%
Menorrhagia	1.6 %	3.5%
Pelvic infection	1.6 %	2.3%

were applied and infection controlled. 6.2% of cases complained of pain in abdomen without any signs of local or pelvic infection. Menorrhagia was seen in 3.5% of cases.

In this series 16 cases needed re-admission. Eight cases were admitted for pelvic infection with palpable inflammatory mass in 5 cases. They were treated conservatively. They responded well except 1 case, who expired after 2 months in the hospital. Three cases admitted for T.O. masses also responded to conservative treatment. Two cases were re-admitted for secondary haemorrhage following infection of colpotomy wound. Three cases

Discussion

The various aspects of first trimester termination of pregnancy and concurrent vaginal sterilisation including the selection of cases, the optimum duration of gestation, operating technique, difficulties of evacuation of the uterus followed by vaginal sterilisation, complications during operation in both early and late postoperative period have been studied. Women between the age of 21-30 years formed the bulk of the total 700 cases. Majority of the patients (82%) were of low and middle socio-economic group. 62% of cases were between para 2 and para 4 with 2-4 living children. Poddar

et al (1976) reported an incidence of 198 such cases (55.8%) amongst 352 cases. It was observed that 45% of the patients were between 7-8 weeks of gestation. This delay may be because the patients get confirmation of their pregnancy only after a period of amenorrhoea of 7-8 weeks. Suction aspiration although done in 52% of cases, has been found technically safer and less time consuming than the dilatation and evacuation done in 37% of cases. Dass and Mukhopadhya (1975) did suction evacuation in all cases of their study (340 cases). Poddar *et al* (1976) did suction evacuation in 58 (26.8%) out of 215 cases. Dilatation and evacuation carries comparatively more risk of haemorrhage, uterine perforation and retained products. It is better avoided. This view was supported by Poukar (1964), Buckle *et al* (1970) and Dass and Mukhopadhya (1975). After termination tubes were ligated easily by Pomeroy's technique after opening the pouch of Douglas. Sogolow (1971), Dass and Mukhopadhya (1975) and Poddar *et al* (1976) also reported that the combined procedure can be performed easily within 10 weeks of gestation with no difficulty in identifying the tubes.

The operation can be done easily with combined sedation and local anaesthesia. General anaesthesia is necessary if the patient is apprehensive and non-co-operative. General anaesthesia with good relaxation and also spinal anaesthesia have been found good. General anaesthesia has to be used in cases where there are operating difficulties and the operating time is prolonged. Dass and Mukhopadhya (1975) preferred spinal and general anaesthesia for this combined procedure. Poddar *et al* (1976) used general anaesthesia in almost all cases.

The average hospital stay of majority of patients (93.9%) was 3 days. A few residing nearby were safely discharged on the second day of operation, whereas 41 patients (5.8%) had to stay for 5-6 days. In the series reported by Poddar *et al* (1976) and Dass and Mukhopadhya (1975) the average hospital stay was 3-4 days and 4-6 days respectively. The complications during operation were haemorrhage (0.7%) and uterine perforation (0.7%), the corresponding figures reported by Dass and Mukhopadhya (1975) were 3.5% and 0.3% respectively.

Haemorrhage at the time of evacuation of the uterine contents is more when the pregnancy exceeds 10 weeks of gestation. It may be observed that only 8% of cases belonged to 11-12 weeks of gestation. It was our policy to avoid sterilisation as far as possible where the size of the uterus was beyond 10 weeks of gestation. Bleeding from the colpotomy wound may also take place and disturb the operation. Such bleeding vessels should be ligated. Buckle *et al* (1970) and Lounge *et al* (1971) showed 0.5% incidence of uterine perforation in cases of termination by suction evacuation. Beric *et al* (1977) reported 0.11% and 0.3% cases of uterine perforation in D&E and suction evacuation respectively. (Table X).

The incidence of perforation of the uterus depends to a large extent on the experience of the surgeon concerned. In this series, there were 2 perforations during M.R. caused by the plastic Karman's cannula. We attribute this to the inexperience of the surgeon concerned.

The incidence of 0.3% of haemorrhage in the postoperative period in this series was due to incomplete evacuation. Dass and Mukhopadhya (1975) recorded 2% incidence of retained products in 340

TABLE X

Incidence of Uterine Perforation

Authors & Years	D & E		S. E.	
	%	Total cases	%	Total cases
Buckle et al (1970)	-	-	0.5%	400
Lounge et al (1971)	-	-	0.5%	1040
Beric et al (1977)	0.11%	37518	0.3%	45484
Present series (1977)	0.14%	259	0.28%	36

cases. Poddar *et al* (1976) recorded no incidence of haemorrhage in the immediate postoperative period. We think that a careful check curettage following either D&E, suction aspiration or M.R. will minimize the incidence of incomplete evacuation. Pyrexia of 100°F and above was recorded in 7 cases (1%) in this series. In one case pyrexia was due to mild pelvic infection.

Eighty per cent of patients in this series reported for first check up. One complication in the initial check up was irregular vaginal bleeding due to incomplete evacuation of the uterus. Incomplete evacuation in the initial check up in some cases was also recorded by Dass and Mukhopadhya (1975) and 1.8% of them needed readmission. Secondary haemorrhage from the colpotomy wound may be another complication. An important step in the prevention of postoperative infection apart from proper operative technique is preoperative treatment of vaginal or cervical infections that may be present and proper postoperative care as well as proper personal hygiene on the part of the patient. In our series 2.3% cases were found to have pelvic infection in initial check up. Poddar *et al* (1976) reported 4 cases of pelvic infection amongst 215 cases. Sogolow (1971) observed 9.7% cases of pelvic infection during postoperative check up in 124 cases.

The overall mortality in this series was 0.28%. Some workers have reported high morbidity when the two procedures are combined (Boyson and Mc Rae, 1949, Mc Master and Ansari, 1971 and Akther, 1973). According to them pelvic change during the time of pregnancy may increase the complication rate and the technique is also more difficult due to an enlarged uterus. The other authors who advocated the combined procedure are Purandare (1970), and Sogolow (1971). It has been observed from this study that the combined procedure is better solution for majority of multiparous women who do not want to have more children. It also has an added advantage of easy motivation. It is superior than the termination and abdominal tubal ligation as there is no fear for the patient of an abdominal operation. less hospital stay, farely smooth postoperative convalescence and performance of both operations in the same sitting. This combined procedure however, needs more skill and experience on the part of the surgeon.

Summary and Conclusions

1. The technique of concurrent first trimester termination and vaginal sterilisation was studied in 700 consecutive cases admitted in the department of Obstetrics and Gynaecology, Gauhati Medical College, Gauhati, Assam, during

the period from 1st April, 1974 to 30th June, 1977.

2. The operation is best done within 10 weeks of gestation although it can be carefully extended to 12 weeks.

3. The complication rate, both during and after operation, increases after 10 weeks of gestation.

4. Experience and skill of the surgeon is one of the key factors for this combined operation.

5. Suction aspiration has been found easier and safer method than D&E and therefore is recommended.

6. The operation can be performed easily with local anaesthesia and sedation though general anaesthesia and spinal anaesthesia may also be effectively used.

7. Complications can be reduced by proper selection of cases, good surgical technique and experience of the operator.

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