

## MINISUCTION ABORTION BETWEEN 9 AND 11 MENSTRUAL WEEKS OF PREGNANCY

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Unquestionably, minisuction with modified Karman Syringe and small diameter plastic cannula is the simplest and safest of all methods of induction of abortion (Dawn, 1975; Vengadasalam *et al.*, 1974; Kessel, 1974), and is the method of choice for women reporting with short period of amenorrhoea (Mullick *et al.*, 1973; Brenner *et al.*, 1975; and Landesman and Saxena, 1976). Ideally, minisuction is performed between 43 to 49 days from the first day of last menses, at which period the average blood loss is 27.20 ml, pregnancy rate is 86.00 per cent and complication rate is 1.20 per cent (Rajan *et al.*, 1978). Nevertheless, we prefer minisuction over suction curettage for pregnancies upto 63 days from the date of last menses, because the risk of complication is reduced by one-half in minisuction (Rajan and Kaimal, 1977).

Considering the convenience, simplicity and the minimal complication rate of minisuction, we elected to try the same procedure for even pregnancies of advanced duration, between 9 and 11 menstrual weeks (64 to 77 days from the first

day of last menstrual period). Our reasons for preferring this approach are many. If aspiration cannot be completed, the same can be effected by suction curettage which is the usual procedure for this period of gestation, and by this the patient does not loose anything. However, if aspiration can be effected perfectly the patients get all the benefits of minisuction, such as convenience simplicity, quickness, no need for cervical dilatation and premedication.

Beginning in August 1975, over a period of 4 years, the senior author has practised minisuction, employing modified Karman Syringe and plastic cannula, in 1320 women. Since May 1978, this series includes a group of 300 patients who underwent minisuction for pregnancies ranging from 9 to 11 menstrual weeks (64 to 77 days from the first day of last menstrual period). Experience gained in this technic of suction, aspiration of advanced duration of pregnancy, and its various advantages which outweigh the disadvantages are detailed in this communication.

### *Selection of Patients*

Only those women who report for termination of pregnancy, with a period of amenorrhoea ranging from 9 to 11 menstrual weeks (64 to 77 days from the first

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of last menstrual period), were considered for this study. A careful pelvic examination was performed to make sure that the uterine size conformed to the specified period of amenorrhoea. Three hundred consecutive patients who satisfied these specifications underwent minisuction by modified Karman syringe and small diameter plastic cannula. All women were given a sound advice and proper introduction to various contraceptive methods which could be concurrently practised with minisuction. This advice was an eye-opener for many women who really wanted to avert another birth, and majority of them availed of the facilities to their advantage.

*Technic of Minisuction:* The method of aspiration was the same as described in our earlier communication (Rajan, 1979), with some minor modifications. It was performed in the out-door without any premedication or paracervical anaesthesia. In addition to the 5 mm plastic cannula, quite often the 6 mm cannula was also employed. Prior laminaria dilatation of cervix was not practised in any patient. However, occasionally cervix was dilated with small Hegar dilators to facilitate introduction of the cannula.

Three Karman syringes were always kept ready as the vacuum source. This was because the total aspirate could not be contained in a single syringe with a capacity of 50 ml. At the time of aspiration, when one syringe was filled, without spending time on emptying the same, the next syringe was connected. This technic saved much time, which is the most significant factor in minimising the blood loss.

If there was difficulty in completing the aspiration, the cannula with the vacuum

preserved was slowly withdrawn which pulled out the separated placental tissue to the cervical os. The placental tissue protruding through the os was easily removed with a small forceps, and then the aspiration was resumed to ensure complete emptying of the uterus. Even by this method if aspiration could not be completed, a laminaria tent was placed in the cervical canal and the patient subsequently underwent suction aspiration with metal cannula (which was the usual method of first trimester abortion practised).

#### *Concurrent Contraception*

All parous women were advised to accept some form of contraception concurrently with the aspiration procedure. The low parity group were promoted for intra-uterine devices, and copper IUDS were inserted after completion of aspiration. Multiparous women were motivated for sterilisation, and if willing tubal sterilisation by the vaginal route was done first which was followed by minisuction. This approach prevented peritoneal contamination by the uterine discharge. For those preferring hormonal contraceptives, the pills were advised from the day of aspiration. In a few cases the husbands opted for vasectomy and underwent the procedure prior to abortion.

#### *Observations*

Pregnancy termination between 9 and 11 menstrual weeks was tried in 300 women by minisuction with modified Karman syringe and small diameter plastic cannula. Age of these patients ranged from 20 to 35 years, and more than 60 per cent of them belonged to the low parity group (Table I).

TABLE I  
Parity

Parity	No. of patients	Percentage
Nullipara	15	5.00
Para I	77	25.67
Para II	100	33.33
Para III	40	13.33
Para IV and above	68	22.67
Total	300	100.00

The aspiration was usually completed within 3 minutes, and the maximum time taken in some cases was 5 minutes. The mean aspiration was 73.80 ml, with a maximum of upto 200 ml (Table II), and

TABLE II  
Blood Loss in the 300 Women

Quantity aspirated	No. of Patients	Percentage
Upto 30 ml	34	11.33
31 to 50 ml	23	7.67
51 to 100 ml	195	65.00
101 to 150 ml	41	13.67
151 to 200 ml	7	2.33
Total	300	100.00

65 per cent of the patients had an aspiration ranging from 50 to 100 ml. The mean aspiration for each week of gestation is separately given in Table III.

TABLE III  
Mean Aspiration as Per Duration of Pregnancy

Period of amenorrhoea (days)	Quantity of mean aspiration (ml)
28-35	11.70
36-42	22.85
43-49	27.20
50-56	37.85
57-63	49.40
64-70	51.10
71-77	82.60
64-77	73.80

Excluding the 15 nulliparous unmarried women, of the 285 parous women 200 accepted concurrent contraception (70.20%). Majority of the patients (84.00%) opted for IUD insertion because of the convenience and also because a greater proportion of them belonged to the low parity group (Table IV). Table V details the different types of IUDs inserted concurrently with the aspiration procedure.

TABLE IV  
Concurrent Contraception Following Miniabortion (70.20%)

Total Parous Women	Total Contraceptive acceptors	I.U.D. (copper devices)	Vaginal sterilisation	Minilap sterilisation	Vasectomy	Pills
285	200 (70.20%)	168 (84.00%)	22 (11.00%)	5 (2.50%)	3 (1.50%)	2 (1.00%)

TABLE V  
Different Types of I.U.Ds. Used

Cu T 200	Copper Y	Lippes	M.L. Cu 250	R.M. Cu Device	Total
154	10	2	1	1	168

Of the 300 women who underwent aspiration, the procedure could not be completed in 8 patients (2.67%), and these women were subjected to suction curettage with metal canula following dilatation of cervix with laminaria tents. None of the patients in this group developed any complications. Among those in whom the minisuction was completed, 2 patients reported subsequently with signs of incomplete abortion (0.68%). Three patients had developed syncopal attack at the time of aspiration (1.00%). In addition 15 patients (5.00%) reported with prolonged post-abortal discharge lasting for more than 7 days, and in all of them the bleeding stopped spontaneously within 2 weeks time. Thus the overall complication rate was 3.67 per cent. There were no traumatic complications such as uterine perforation or cervical injury in this series, nor was there any incidence of sepsis. Of the 300 women, all except the subjects who had minor complications enjoyed the conveniences and advantages of minisuction.

#### *Discussion*

Since 1967 vacuum aspiration (Kerslake and Casey, 1967) has emerged as the preferred mode of surgical termination of first trimester pregnancies and is more widely practised than the conventional dilatation and curettage. The procedure is atraumatic and the myometrium is not injured because the products of conception are separated clearly along the decidua. Since the aspiration is a quicker procedure the blood loss is minimal. Nevertheless, the conventional dilatation of cervix poses certain problems and is the major setback for suction aspiration. Cervical injuries, incompetence and also infection (if laminaria are used) are the well accepted complications of dilating

the cervix. Moreover instrumental dilatation of cervix necessitates administration of anaesthesia.

Another factor influencing the safety of the procedure is the type of cannula employed. The choice of suction cannula varies from rigid metal types to flexible polyethylene types. Undoubtedly, uterine injuries are more common with metal cannulae and hence the preference is always for flexible polyethylene cannulae.

In 1972, Karman and Potts solved these 2 problems by employing small diameter (5 or 6 mm diameter) plastic cannulae which neither requires dilatation of cervix nor are rigid to cause uterine perforation. This significant innovation was employed by many authors with definite advantages to the patients. However, only those women with a short period of amenorrhoea could avail the facilities and quite often the aspiration was done in the absence of pregnancy.

Since we do not have a reliable method for diagnosis of pregnancy at the earliest (Dawn, 1975), and since only 50 per cent of women requesting suction aspiration report within 49 days from the last menstrual period (Rajan, 1979), we felt it is only reasonable to attempt minisuction even in advanced first trimester gestations (Table VI). If aspiration could be completed the patient enjoys all the benefits of suction aspiration without cervical dilatation. Otherwise she undergoes suction curettage with cervical dilatation as usual.

Eventhough minisuction with 5 or 6 mm plastic cannula is difficult for the advanced period of gestation, between 9 and 11 menstrual weeks, it is a practicable proposition if practised with experience and skill. It will definitely save the patient from the risk of cervical dilatation and add to the convenience of the patient

TABLE VI  
Our Results for Minisuction

Year	No. of patients	Days of amenorrhoea	Mean aspiration ml.	Pregnancy %	Complications %
1976	120	33-49	26.30	64.00	1.60
1977	124	50-63	47.20	93.75	2.42
1978	172	42-49	27.20	86.00	1.20
*1979	105	40-49	29.00	96.00	nil
1979	1000	30-63	34.60	88.66	2.30
Present series	300	64-77	73.80	100.00	3.67

\* Pregnancy diagnosed by immunological test (pregnosticon tube test)

without sacrificing the efficacy of the procedure. Among the 300 consecutive women who underwent minisuction between 9 and 11 menstrual weeks, 289 women (96.33%) had no difficulty and the procedure could be completed in the least imposing manner. But for this approach all these women would have been subjected to cervical dilatation (usually with laminaria tent) and suction curettage with its attended complications of incomplete abortion (2.50%), failures (0.50%), uterine perforation (0.17%) and severe pelvic infection (1.16%) (Rajan and Nair, 1977).

Contrary to the high complication rate for suction curettage with laminaria dilatation, in the present series we had 8 cases (2.67%) in whom aspiration could not be completed, and another 2 women (0.67%) who reported with incomplete abortion, both groups requiring a second surgical procedure. In addition, 3 women (1.00%) developed syncopal attack at the time of aspiration. There were no instances of cervical or uterine injuries nor pelvic infection.

The total complication rate for this series of minisuction between 9 and 11 menstrual weeks shows only trivial difference when compared to our earlier re-

ports for minisuction at earlier period of gestation. For women undergoing minisuction between 33 to 49 days the complication rate was 1.66 per cent, and between 50 to 63 days the same was 2.42 per cent as against the incidence of complications for the present series, between 64 to 77 days, which is 3.67 per cent (Rajan and Kaimal, 1977). This gradual increase in complication rate is related to the duration of gestation as indicated by Kessel *et al.*, (1973).

#### Conclusion

From the foregoing discussion it is quite obvious that minisuction employing small diameter (5 and 6 mm) plastic cannula and without cervical dilatation is practicable in women between 9th and 11th weeks of pregnancy (64 to 77 days of amenorrhoea). If practised with skill and experience it is a more convenient and less complicated procedure than the suction curettage following cervical dilatation.

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