

OPTIMUM PERIOD FOR PERFORMING ENDOMETRIAL ASPIRATION AS A MEANS OF EARLY ABORTION

by

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In recent years, endometrial aspiration as a means of early abortion, has become an accepted procedure in many obstetric centres. It is performed quite satisfactorily as an outdoor procedure using a plastic cannula and the modified Karman syringe. Admittedly this procedure has many aspects in its favour, and there is no better alternative.

Eventhough endometrial aspiration is the method of choice for women reporting with amenorrhoea ranging from 33 to 63 days, this procedure has got certain definite disadvantages. When performed very early, within a few days of a missed period, it may become an unnecessary procedure in the absence of pregnancy. Even a pregnancy test at this period may not solve the problem. At the same time, when the pregnancy is advanced there is associated increased blood loss and three fold increase in the complication rate (Kessel *et al.*, 1973). Hence it is essential to determine the ideal time for undertaking this procedure, at which period the complication rate including blood loss will be at its minimum and pregnancy termination rate at its maximum.

With this view, an attempt is made in

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this article to suggest the most favourable period for performing endometrial aspiration. The evaluation is based on the results of histopathological evidence and complete clinical data of 600 cases of endometrial aspiration done in our hospital during the period from August 1975 to March 1977.

Material and Methods

We have elected to perform endometrial aspiration as the method of early pregnancy termination for women reporting with 33 to 63 days' amenorrhoea. In certain cases with a history of irregular periods, the procedure was undertaken when the length of amenorrhoea exceeded 63 days. However, in all the patients the size of the uterus was within the set limit of 7 weeks' pregnancy size. Any significant medical or pelvic disorders were ruled out before attempting the procedure. Routine urine test was not done to diagnose pregnancy. All the patients were advised to accept concomitant contraceptive therapy.

Endometrial aspiration was performed as an outdoor procedure. Preoperative preparations and use of anaesthetic agents and analgesics were avoided, in order to prevent inconvenience to patient. Flexible polythene Karman cannula (5 mm and 6 mm) was employed for aspiration and was connected to the modified

Karman syringe functioning as the vacuum source. The entire procedure was completed in 2 to 3 minutes, and if preferred an IUD (copper "T") was introduced simultaneously. The uterine aspirate was sent for histopathological examination. After observing for 30 minutes, the patients were allowed to go home to resume their daily routine. All of them were advised to report for follow-up after one week.

At the time of the follow-up visit, the particulars about the nature and amount of blood loss were recorded, and a pelvic examination was done to confirm the completeness of the procedure. If reasons were there to suspect incomplete emptying, she was subjected to a curettage. If the amenorrhoea continued, without interruption of pregnancy, the aspiration procedure was repeated. Antimicrobial therapy was initiated only when there was evidence of sepsis.

Observations

Results of endometrial aspiration as a means of early abortion in 600 patients were reviewed. All of them were in the reproductive age group with the majority in the 20 to 30 years range. More than 90% of the patients were parous, and parity ranged from 1 to 6. The mean

aspirate volume was 34.60 ml and the total complication rate was 2.00%. There were 3 cases of failures (1 in 200), 5 cases of incomplete abortion (1 in 120) and 4 cases of sepsis (1 in 150) in the entire series. In 306 consecutive cases histological examination of the aspirate was performed and pregnancy was confirmed in 266 patients (88.66%).

The total number of cases were divided into 6 groups according to the duration of amenorrhoea (Table: I). The

TABLE I
600 Cases of Endometrial Aspiration

| Group | Duration of Amenorrhoea | No. of patients |
|------------------------|-------------------------|-----------------|
| I | 29 to 35 days | 19 |
| II | 36 to 42 days | 107 |
| III | 43 to 49 days | 172 |
| IV | 50 to 56 days | 151 |
| V | 57 to 63 days | 99 |
| VI | above 63 days | 52 |
| Total No. of Patients: | | 600 |

blood loss and different complications in each group were analysed separately and compared. Incidence of pregnancy, as determined by histological examination of the aspirate, was evaluated separately in each group.

Mean aspiration: (Table: II) The

TABLE II
Analysis of 600 Cases of Endometrial Aspiration

| Group | Mean aspiration (ml) | Pregnancy (%) | Failures | Incomplete abortion | Infection |
|-----------|----------------------|---------------|----------|---------------------|-----------|
| I | 11.70 | 50.00 | nil | nil | nil |
| II | 22.85 | 80.50 | 1 | 1 | nil |
| III | 27.20 | 86.00 | 1 | nil | 1 |
| IV | 37.85 | 96.00 | 1 | 1 | 1 |
| V | 49.40 | 96.00 | nil | 1 | 1 |
| VI | 55.32 | 94.20 | nil | 2 | 1 |
| 600 cases | 34.60 | 88.66 | 3 | 5 | 4 |

blood loss was calculated by the amount of aspirate collected in the graduated Karman syringe. As would be anticipated, the blood loss was minimum in group I (11.70 ml) and maximum in group VI (55.32 ml). Blood loss was within reasonable limits of 22.80 to 27.20 ml in group 2 and 3 cases respectively.

Pregnancy rate: Pregnancy termination rate gradually increased with the duration of amenorrhoea, as proved by the histopathological examination. In group 1 cases 50% of the patients were pregnant, and in cases belonging to group 4 and beyond, more than 90% were pregnant. Group 3 cases, with a comparatively shorter period of amenorrhoea, recorded a greater percentage of pregnancy termination (86.00%).

Complications: Failure rate and incidence of sepsis appeared to be independent of the length of amenorrhoea. However, incomplete abortion was more common with the increasing duration of amenorrhoea. There were no complications in group I cases. The patients in group 3 (43 to 49 days) had only minimal complications (1.20%). But there was a steady increase in complication rate after this period, to a maximum of 5.80%

These observations (Fig. 1) establish the unquestionable role of endometrial aspiration in early abortion upto 63 days from the last menstrual period. The risk of complications is lower than that of the standard suction curettage for the first trimester. Eventhough endometrial aspiration should be done as early as possible, it is worthwhile avoiding the first 10 days from the missed periods, since as many as one half are not pregnant at this period. It is to the maximum advantage of the patients to perform the procedure between 15 to 21 days from the missed periods

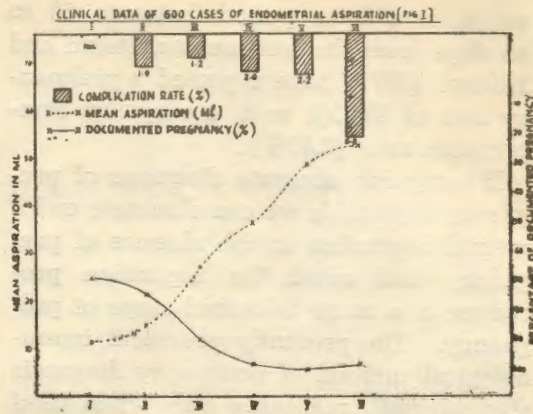


Fig. 1

(43 to 49 days amenorrhoea), since documented pregnancy is very high and the risk is minimal at this period. After 49th day, endometrial aspiration carries a tendency for slight increase in the complication rate, but when compared to the standard suction curettage with metal cannula, it is less dangerous and more acceptable. However, after 63 days, this procedure is unsuitable and hence not to be recommended.

Discussion

While it is generally accepted that short period of amenorrhoea is the important criterion for performing endometrial aspiration, opinion is divided on defining the upper limit of amenorrhoea. Many prefer to limit the procedure upto 14 days from the missed periods (Kessel *et al.*, 1973, Hale, 1973 and Goldsmith, 1974). However, the percentage of documented pregnancy at this period is low, ranging from 55% (Lean; *et al* 1973) to 57.4% (Pachauri *et at.*, 1974). When the upper limit is set as 21 days from the missed periods (Wong & Schulman, 1974 and Mullik & Dawn, 1975), the pregnancy rate is improved to 73% (Milagros *et al.*, 1975). By performing endometrial aspi-

ration at a later period, between 50 to 63 days from the last menses, Rajan and Kaimal (1977) have reported a pregnancy rate of 93.75% with a very low complication rate (2.40%).

If early and accurate diagnosis of pregnancy is possible we can eliminate endometrial aspiration in the absence of pregnancy and avoid the aspiration procedure at a more advanced stage of pregnancy. The presently prevalent immunological method of pregnancy diagnosis shows a 95% reliability only when used after 45 days of amenorrhoea (Dawn, 1975 and Brenner *et al.*, 1973). The more sensitive and reliable tests, such as radioimmunoassay (Mishell *et al.*, 1974) and radioreceptorassay (Landesman, & Saxena, 1976) are neither practicable nor readily available for routine pregnancy diagnosis.

In the absence of an accurate method of early pregnancy diagnosis, the concept of endometrial aspiration has become controversial because of the unnecessary invasion of the uterine cavity in a significant number of non-pregnant women. The possible sequelae of invading the uterine cavity of non-pregnant women are well documented by Landasman *et al.*, in 1973, and they include physical and psychic trauma, pelvic infection, uterine synechia, and infertility.

When endometrial aspiration was performed within 35 days from the last menses, only 50% of the patients were pregnant, indicating that the procedure was quite unnecessary and probably harmful in the rest of the patients. Between 36 to 42 days, 80% of the patients were pregnant and there was a complication rate of 1.90% in this group. By performing endometrial aspiration till the 49th day, Milagros *et al.*, (1975) have documented 73.00% pregnancy rate, and

in a subsequent series they have shown an improvement in the pregnancy rate by delaying the procedure until the patients were at least 10 days past the expected menses. Comparable results with minimal risk of complications were obtained in our study by delaying the procedure until the 14th day and performing before the 21st day of missed periods (43 to 49 days amenorrhoea). This period recorded a very high pregnancy rate and a very low complication rate with a limited blood loss, and hence appeared to be the optimum time for undertaking endometrial aspiration.

After the 49th day, although the pregnancy rate was more than 90% there was a steady increase in blood loss and complication rate. According to Kessel *et al.*, (1973), after 49 days from the last menses, the aspiration procedure will be attended with a three fold increase in the complication rate, as compared to before 49 days. In our previous report (Rajan & Kaimal, 1977) a complication rate of 2.42% and 1.66% was documented for the two groups respectively. Hence it may be concluded that endometrial aspiration after 49 days is less advantageous to the patient and slightly more complicated. However, compared to the standard suction curettage with the metal cannula, endometrial aspiration is a simpler and safer procedure for women reporting with a period of amenorrhoea ranging from 50 to 63 days. After this period endometrial aspiration is not the method of choice because of the high incidence of complications (5.80%).

Summary

Endometrial aspiration was performed in 600 women as a means of early abortion. 88.66% of women were pregnant at the time of the procedure. The overall

complication rate was 2.00% which included 3 cases of failure, 5 cases of incomplete abortion and 4 cases of sepsis. All the patients were divided into 6 groups depending on the duration of amenorrhoea, and the percentage of pregnancy; blood loss and incidence of complications in each group was separately analysed and compared. The following conclusions were drawn from the analysis:

1. In the absence of a sensitive method for diagnosis of pregnancy, it is preferable to delay the procedure until the patient was at least 10 days past the expected menses. This eliminates the unnecessary invasion of the uterine cavity in a number of non-pregnant women.

2. It is to the maximum advantage to the patients to undertake the procedure between 43rd and 49th day from the last menses, since the documented pregnancy is very high and the risk of complications is minimal at this period.

3. After the 49th days, the procedure shows a tendency for slight increase in the complication rate, but when compared to the standard suction curettage it is less dangerous and more acceptable.

4. However, after 63 days this procedure produces more complications and hence is unsuitable.

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