

ENDOMETRIAL STUDY BY METAL CANNULA AND VABRA ASPIRATOR

by

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The uterine cavity encloses many surprises, a pleasant one of a much awaited pregnancy or a shocking one of a malignant neoplasm.

In the past, the endometrium was studied only on suspicion of pathology for symptomatic patients. The need to obtain endometrium for examination by a simple, relatively painless and risk-free outpatient procedure which does not need anaesthesia, was expressed as early as 1937 by Sharman and Sheehan.

This need has grown manyfolds now as

cause of late marriages, smaller families and screening for cervical neoplasm which have decreased the incidence of carcinoma of cervix. While increasing longevity, better methods of detection of endometrial carcinoma and increasing use of estrogens have increased the incidence of carcinoma of the body.

In India, the incidence of endometrial carcinoma of the uterus is still far lower than that of the carcinoma of cervix. From a study by Roy (1976) few figures are quoted in Table I.

TABLE I
Comparative Incidence of CA. Body: CA. Cervix in India

Author	Place	Year	CA. Body : CA. Cervix
Paymaster	Bombay	1941-1957	1 : 23.5
Gault	Vellore	1943-1958	1 : 41
Roy	Calcutta	1950-1970	1 : 48.6
Naidu	Hyderabad	1957-1959	1 : 33.6

the incidence of carcinoma of body and carcinoma of cervix are becoming almost parallel in the West. This is probably be-

In a study from 1972-1974 at Eden Hospital Medical College, Calcutta, the ratio of carcinoma body to carcinoma cervix was 1.4:25.

Apart from the epidemiological factors, the method and success of detection of these two varieties of cancer can influence their relative incidence.

The various methods for endometrial screening are as follows—endometrial

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curettage, uterine aspiration smear, endometrial brush technique, Gravlee jet washer, Vabra aspirator, metal cannula, Mi-Mark Helix, etc.

A study of endometrial aspiration with metal cannula and suction curettage with Vabra aspirator was conducted at the K.E.M. Hospital, Parel, Bombay. The objectives were—

(1) To determine the accuracy and practicability of these two devices.

(2) To assess the ease of collection of the endometrial material and method of its processing.

The accuracy of the procedure was interpreted by correlating the cytological study of the endometrial aspiration with histopathology of the endometrium obtained either by suction curettage or from specimen of the uterus after hysterectomy.

The patients presenting with menorrhagia, metrorrhagia, intermenstrual and postmenstrual bleeding, were selected. Some patients awaiting hysterectomy for various other reasons like prolapse of the uterus were also selected for the purpose of correlation.

A total of 200 patients were subjected to aspiration with metal cannula and 100 patients to the suction curettage with Vabra aspirator.

Some of the patients were subjected first to the endometrial aspiration followed by suction curettage, immediately.

The patients who further underwent hysterectomy were followed up and the uterine specimen were studied.

All procedures were done in the out-patient department without sedation, anaesthesia or vagolytic drugs. Active vaginal, cervical or adnexal infection was ruled out. Aspiration with the metal cannula was performed after cleansing the external os. A simple 'J' shaped cannula

15 cms. in length and 1.9 mm in diameter with a terminal hole (Fig. 1) was used. The cannula was introduced beyond the internal os and aspiration was performed by a syringe. A cell-film was prepared on a slide which was fixed and stained with Papanicolaou stain.

When sufficient number of endometrial cells were present for diagnosis, the smear was considered satisfactory.

The findings obtained are as shown in Table II.

TABLE II
Endometrial Aspiration

(A) Total cases	200
(B) Satisfactory smears	145 (72.5%)
(C) Cases followed up by endometrial histopathology	114
(D) Proper correlation obtained	96 (84.2% of (C))
Hyperplasia missed	9
Hyperplasia overdiagnosed	7
Malignancy missed	2
Malignancy overdiagnosed	Nil

Of the 200 smears, 27.5% were unsatisfactory which should be considered rather high. It was observed that with atrophic endometrium or with active uterine bleeding, sufficient number of cells could not be obtained. In 114 of these cases endometrial histopathology was studied after suction curettage and/or hysterectomy. 84% of the cases had accurate correlation. Of the 2 cases of malignancies which were missed by endometrial aspiration with metal cannula, in one case smear was unsatisfactory while in the other case the smear was satisfactory with normal cells. Both these patients were subjected to Vabra aspiration, the correct diagnosis was made and adequate treatment was given.

The results obtained by other workers are given in Table III.

TABLE III
Accuracy of Endometrial Aspiration

Author	Year	Percentage
Hecht	1956	92
Beschum	1958	86
Jameson	1961	83
Reagan and Ng	1965	90
Isaacs	1975	96.79
Authors	1978	84.2

Most of the workers have modified this cannula with improved pick-up rate of the endometrial cells. Isaacs (1975) who has the best result, has modified the cannula by having multiple holes and a rubber acorn which fits in the cervix and helps creation of a better suction force.

No untoward reactions or complications were encountered during aspiration with metal cannula.

Suction curettage by Vabra Aspirator was the second method studied. The apparatus (Fig. 2) was a sterile disposable unit meant for diagnostic and therapeutic vacuum curettage. It consisted of a metal cannula, just less than 3 mm in diameter with a length of 21 cms. It has a plastic receptacle. The cannula was thin, curved, non-traumatic with pressure equalising holes at the distal end. The plastic receptacle had a sieve inside so that tissue bits alone were collected. It was connected to suction apparatus which could create a vacuum of 500-600 mm of Hg.

After properly assembling, the cannula was passed upto the fundus and aspiration was carried out, usually for 15-20 seconds for a diagnostic procedure. If patients complained of pain, suction was released intermittently. When sufficient material was accumulated, the procedure was completed. The patient was ambulant

immediately. The material was collected in formalin solution and histopathology was studied.

The results obtained in 100 cases are shown in Table IV.

TABLE IV
Suction Curettage with Vabra Apparatus

Total number of patients	100
Adequate material	83
Scanty material	10
No material	7
Hysterectomy specimen studied in	50
Accurate correlation	44

In 83 patients adequate material was obtained. In 17 patients in whom inadequate material was obtained, majority of them belonged to postmenopausal group and atrophic endometrium was found on hysterectomy. Results of 50 suction curettages were correlated with hysterectomy specimen and 44 were found to be correct. In 3 patients hyperplasia was missed and in the other 3, hyperplasia was over-diagnosed. No case of malignancy was missed.

The experience of other workers is presented in Table V.

TABLE V
Accuracy of Vabra Aspirator

Author	Year	Percentage
Chu Chen <i>et al</i>	1971	80
Denis	1972	97
Cohen	1974	98
Authors	1978	88

With Vabra Aspirator, a few untoward reactions were encountered, which are mentioned in Table VI.

Minimal treatment in the form of analgesic tablets after the procedure was required in the patients who complained of moderate abdominal pain.

TABLE VI
 Untoward Reactions with Vabra Aspirator
 (Total cases 100)

Nausea	— 1	Abdominal pain (mild)	— 27
Vomiting	— Nil	Abdominal pain (mod.)	— 16
Giddiness	— 10	Bleeding	— Nil
Syncope	— Nil	Tremours of thighs	— 4
		Back pain	— 2

Other complaints subsided with few minutes of bed rest after the procedure.

Dilatation of the cervix was not required in any of these 100 cases. In 2 other cases with completely stenosed cervix, neither aspiration nor suction curettage was possible and they were excluded from the study.

There was no incidence of uterine perforation or infection.

Discussion

The metal cannula and Vabra Aspirator have opened a new door for detection of endometrial malignancy. The metal cannula is easily available in India and extremely simple to operate. The Vabra Apparatus is not freely available. It needs a suction tube and a suction machine.

Both, the metal cannula and Vabra Aspirator can be easily introduced in the cervix without any dilatation or anaesthesia. Thus there is no need for hospital admission, the time required is short and the patient is ambulant immediately.

The incidence of unsatisfactory smears from metal cannula are quite high, especially in the presence of active uterine bleeding. With distorted or large uterine cavity both cannula aspiration and suction curettage can give false negative results. Even the endometrial polyps can be missed. Pomerance and Hale (1978) have shown that the success of obtaining

smears decreases rapidly in increasing age groups i.e. 76% in age group 40 to 49 years and 30% in age group 60 to 69 years.

Jensen and Gars (1970) compared the completeness of curettage by Vabra Aspirator to that of routine dilatation and curettage. They did these procedures just prior to hysterectomy under anaesthesia and studied the amount of endometrium left. Vabra aspiration and dilatation and curettage were found to be equally good.

As far as material processing is concerned, the endometrial fluid obtained with metal cannula is subjected to cytological study, which is a quick process. The material from suction curettage is studied for its histopathology which is time consuming, but of course gives higher accuracy.

It would not be out of place to compare the performance of Gravlee Jet Washer which is a widely used device for endometrial carcinoma screening. Very encouraging results in the range of 95-100% accuracy have been reported, but Twiggs *et al* (1976) have reported 11% unsatisfactory specimens when Gravlee Jet irrigation was routinely carried out by the resident doctors.

The above mentioned factors should be considered to determine whether routine endometrial screening would be practicable in Indian setup. It is recommended that the high risk population such as

those mentioned below should be screened—

* Patients with postmenopausal bleeding or any other suspicious symptoms

* Those awaiting hysterectomy for any reasons

* Patients with epidemiological factors for endometrial malignancy—diabetes, elderly age, nulliparity

* The perimenopausal patients on hormonal therapy can be screened periodically.

Summary

A study of 200 cases of endometrial aspiration with metal cannula and 100 cases of suction curettage with Vabra Aspirator was carried out. The metal cannula obtained inadequate smear in 27.5% cases while Vabra Aspirator gave adequate material in 83% cases with 88% accuracy. The metal cannula is not a very satisfactory instrument as there is a chance of missing malignancy. Vabra apparatus is useful only in cases where dilatation and curettage under anaesthesia would preferably be avoided, and endometrial study is being done for screening purpose.

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See Figs. on Art Paper II