

ENDOMETRIAL ASPIRATION CYTOLOGY AND BIOPSY IN WOMEN WITH ABNORMAL UTERINE HAEMORRHAGE*

by

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This communication deals with the problem of diagnosing pre-malignant lesions of the endometrium.

While results the world over show a positive control over cancer cervix, the spectre of endometrial cancer has shown a steady rise.

The statistics in literature on the frequency of endometrial carcinoma vary considerably. In general, however, endometrial carcinoma has increased during the last few years as compared with carcinoma of the cervix. Forty years ago the ratio of endometrial carcinoma to cervical carcinoma was 1:14.8 according to Hinselmann. 10 to 20 years ago it was 1:3.4. Today however, in larger gynaecological hospitals abroad endometrial carcinoma is diagnosed as often as cervical cancer. (Gore and Hertig 1962); Wynder *et al*, (1966) Holt (1977). This is not so in India yet.

What is more, there is also a racial variation. In Jewish women in New York City the ratio of these two carcinomas is 1:0.3 (They rarely develop

cervical carcinomas); in all other white women the ratio is 1:1.29 and in Negro women it is 1:5.2 and in Japanese women the ratio is 1:24.4.

It is a disease of the older age group at present, so with increasing longevity, we will have more cases. The average age is 57 years and the average life expectancy in India is fast approaching that.

In view of this, we decided to undertake a study to evaluate the value of endometrial aspiration cytology in certain selected cases at a hospital in Bombay on an Out-Patient basis.

Our aims were to study:

- (1) the incidence of precancerous lesions of the endometrium in women with abnormal bleeding patterns.
- (2) Whether endometrial cytology was adequate to diagnose these conditions.
- (3) What was the best aspiration.
- (4) Correlation with histology.

Material and Methods

A hundred and seven women who complained of abnormal uterine bleeding were included in this study. Those previously under hormone therapy were excluded. Two hundred and ninety-one cervico-vaginal smears were done on these. Although endometrial aspirations were performed in 107, they were suc-

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cessful in only 95 patients. We were able to get adequate tissue for histology in 64 cases and histology-cytology correlation was done in them. In our Clinic, aspiration was done by means of a metal endometrial cannula attached to a 20 cc glass syringe. Recently, in the latter part of our series we made use of the Vabra Aspirator which we found to be more effective in obtaining an adequate amount of material from the endometrial cavity.

Cytological Diagnosis of Endometrial Hyperplasia

Lateral vaginal wall smears for hormone evaluation along with endometrial aspiration smears should be considered.

In the vaginal smears, an estrogen active pattern premenstrually in a menstruating woman and at any time in a post-menopausal woman are significant.

well-preserved smears to say whether the cells are from proliferative or secretory endometrial pattern.

Atypical cells indicate the presence of some pathology usually hyperplasia, polyps or adenomyosis. Here the cells, though abnormal do not satisfy all criteria of malignancy.

Adenocarcinoma is characterised by cells showing anisonucleosis. The clusters are loose indicating lack of cohesiveness. The nuclei are large with excess coarse chromatin and contain a pink nucleolus which is diagnostic. The cytoplasm contains vacuoles, pushing the nucleus to the periphery. Often there is phagocytosis. The background contains many RBC's, histiocytes and cellular debris.

Results

Table 1 summarises the results.

TABLE 1
Results—Histology and Cytology Correlated

Histology	Cases	Malignant	Atypical	Normal	Unsatis
Adenocarcinoma	-	-	-	-	-
Hyperplasia	12	-	9	2	1
Proliferative	40	-	2	36	2
Secretory	7	-	-	7	-
Products of Conception	1	-	1	-	-
Inadequate tissue	4	-	-	4	-
Total	64	-	12	49	3

A high Karyopyknotic index, a large number of eosinophilic cells and a pattern characterised by singly occurring superficial cells with a clean background should warrant an aspirate from the endometrium, if not done earlier.

Endometrial cells seen in the aspirate can be classified as normal, atypical or frankly malignant. Normal cells may be glandular or stromal. It is possible in

Histology of the microbiopsy taken on aspiration is compared with the cytology report of the aspirate.

There were no cases of endometrial carcinoma. There were 12 patients who had hyperplasia of the endometrium on histology, 9 of whom showed atypical endometrial cells, 2 had normal cells and 1 was unsatisfactory for opinion. Of the 40 women who had a normal prolifera-

tive endometrium histologically, 36 revealed normal endometrial cells, 2 atypical cells and 2 smears were unsatisfactory. Seven patients showed a secretory endometrium histologically and normal endometrial cells cytologically. We had 1 case who had bleeding due to retained products of conception, and her cytology slides showed placental villi. Four cases had normal endometrial cells in their aspiration smears, but the tissue was found to be inadequate for histology diagnosis.

Analysis of lateral vaginal wall smears in these cases showed that 14 patients had an estrogen active smear premenstrually. Out of these, 9 showed atypical cells in their aspirates cytologically. Histology revealed 12 patients with endometrial hyperplasia.

Our incidence of hyperplasia is 18.75%. Malhotra and Chandra (1976) reported 29.1% in a similar study of symptomatic premenopausal women.

Out of our 12 cases, only 2 were treated with hormones. The use of combination pill over 5-6 months controlled the bleeding and follow-up aspiration biopsy showed an endometrial pattern compatible with therapy. On withdrawal of this therapy the patients lapsed into menopause. Mild degrees of endometrial hyperplasia, therefore, can be considered as a transient phase in ovarian withdrawal prior to menopause and can be treated conservatively.

In the other 10 cases, hysterectomy was performed. Out of these, 2 had small myomas and 4 had adenomyosis on histology of the specimen.

Photograph 1 shows both normal and hyperplastic endometrial cells (lower power) from the aspirate of a patient aged 42 years. Photograph 2 shows the

normal cells on high power. Photograph 3 shows the hyperplastic cells on high power. Photograph 4 shows the hyperplasia of the endometrium on aspiration biopsy specimen. This patient had adenomyosis on hysterectomy specimen.

Discussion

The development of better aspiration techniques have improved the accuracy of diagnosis of endometrial cancer by cervico-vaginal cytology alone. Recent workers in the field have reported an accuracy of 84 to 82%. It is Rascoe (1963) who by combining aspiration cytology and microbiopsy achieved a diagnostic accuracy of 100%.

However, all authors report a small but significant number of cases where the technique of aspiration failed or the tissue removed was inadequate for opinion. Isaac and Wilhoite (1974) could not insert the cannula in 6% of cases and it was difficult in 20%. Dennis and Barnett (1973) report a 7% failure. In our series, whenever difficulty was encountered, the procedure was abandoned in favour of a D & C under anaesthesia.

Like carcinoma in other parts of the body, most endometrial carcinomas are preceded by a precancerous state. Retrospective, prospective and concurrent studies reported in literature reveal that cases of endometrial hyperplasias have a statistically higher chance of developing adenocarcinoma of the endometrium. Hence, in women with dysfunctional uterine haemorrhage around the age of 40, the possibility of endometrial hyperplasia must be considered carefully in planning treatment. For this purpose the technique of endometrial cytology and microbiopsy will serve as an important diagnostic tool in the armamentarium of the gynaecologist.

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See Figs. on Art Paper I