

# ENDOMETRIAL ASPIRATION CYTOLOGY IN DYSFUNCTIONAL UTERINE BLEEDING

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## SUMMARY

A correlative study of endometrial histo-pathological findings with vaginal, cervical and endometrial cytology was carried out in 73 patients of suspected dysfunctional uterine bleeding.

Out of these 44 showed normal endometrium, 7 showed cysto-glandular hyperplasia, 3 adenomatous hyperplasia, 14 endometritis, 1 carcinoma of cervix and 5 adenocarcinoma of endometrium.

Cytological findings in these cases are discussed.

### *Introduction*

Exfoliative cytology has an unique place in the study of female genital tract lesions. Study of vaginal and cervical smears has become very popular in the detection of malignant and pre-malignant lesions of cervix.

Vaginal smear has also been used in the study of endometrial lesions with considerable success.

Direct aspiration of cellular material from endometrial cavity has proved to be more reliable and a variety of appliances have come into use for this purpose.

With a view to correlate the vaginal, cervical and endometrial cytological findings with histological appearances of endometrial scrapings in conditions of

uterine bleeding, the present study was carried out.

### *Material and Methods*

One hundred patients who attended to Government General Hospital, Guntur for uterine bleeding were selected for this study. History as well as other information regarding diabetes, hypertension, hormone therapy were recorded.

A thorough physical examination was done and the findings were recorded.

Vaginal smear was taken from posterior fornix with gloved finger at speculum examination and also a lateral wall scrape smear for hormonal study. Cervical scrape smear from ectocervix was taken with a wooden spatula.

Ten milligrams of calmose was given intravenously. A pelvic examination was done to ascertain the position and

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size of uterus. A menstrual regulator syringe was introduced into the uterine cavity and a gentle suction was applied. The aspirated material was expelled onto clean glass slides and smears were made. A dilatation and curettage was performed.

All the smears were fixed in absolute methylalcohol immediately after collection and stained by papanicolaou's method. The uterine scrapings were submitted for histopathological study.

#### Observations

Out of the 100 cases selected for the study, 24 endometrial smears were unsatisfactory and hence excluded from the study.

In 3 cases, uterine curettings were insufficient and these 3 were also disregarded. Hence the correlative study was made with a total 73 cases.

The Table shows the agewise analysis of these cases as per histopathological diagnosis.

explained by a probable non-reactive endometrium.

Cervical smears revealed no abnormality. Endometrial smears showed mostly discrete cells with mild pleomorphism and scanty cytoplasm alongwith small clusters of cells with minimal size variations. Minimal number of inflammatory cells and a moderate quantity of red blood cells were also seen. The average size of endometrial cells is 7 x 5 microns.

In 12 cases, histopathology revealed a secretory endometrium. Hormonal pattern was progestational in vaginal smears. One of the cervical smears showed cells of squamous cell carcinoma in situ. But cervix biopsy showed only severe dysplasia.

Endometrial smear in all these 12 cases showed plenty of large clusters of endometrial cells with a few discrete cells. Individual cells showed minimal pleomorphism and average size was 11 x 7 microns.

In 13 cases endometrium revealed

TABLE I  
*Agewise Classification According to Histopathological Diagnosis*

Diagnosis	A G E				Total
	15 to 25	26 to 40	41 to 50	51 to 55	
Prolif. phase	6	17	9	—	32
Secretory phase	1	10	1	—	12
Cystoglandular Hyperplasia	2	3	1	1	7
Adenomatous hyperplasia	2	2	1	—	3
Endometritis	—	7	4	—	13
Carcinoma cervix	—	—	4	1	1
Endometrial carcinoma	—	—	—	1	5
Total	11	39	20	3	73

In 32 cases endometrium was found to be in proliferative phase. Vaginal smear showed oestrogenic pattern in 16 cases, progestational pattern in 15 cases and in 1 case hormonal assessment could not be made due to a scanty smear. The progestational pattern of smears might be

chronic endometritis. These include 2 cases of post-abortional endometritis and 1 case of missed abortion.

The vaginal and cervical smears did not show any particular characteristic features.

Endometrial smears showed sheets of

decidual cells in the 2 cases of post-abortional endometritis and 1 case of missed abortion. In the other cases discrete endometrial cells with small to medium size clusters were seen along with moderate numbers of red blood cells and inflammatory cells.

In 1 case among the above, clusters of endometrial cells were seen with moderate pleomorphism and a diagnosis of adenocarcinoma of endometrium was made. However, the endometrial curettings revealed no malignancy. This constitutes 1 false positive case in this study.

Seven cases of cystoglandular hyperplasia and 3 cases of adenomatous hyperplasia were diagnosed by histopathology. Vaginal smears showed an oestrogenic pattern in all the cases and cervical smear revealed no abnormality.

Endometrial smears showed characteristics similar to proliferative phase.

One case of carcinoma of cervix was detected cytologically and confirmed by biopsy.

Five cases of adenocarcinoma of endometrium were diagnosed among the 73 cases. Out of these, 4 cases were positively diagnosed by endometrial cytology. Large clusters of cells with marked pleomorphism were seen in 2 cases. Some clusters also showed cells arranged in papillary formations. Glandular pattern was seen in 1 case and in the other case sheets of pleomorphic cells were seen.

In one case only a suspicious diagnosis was made as the cells showed only minimal pleomorphism. All these above cases were confirmed by endometrial biopsy.

Hormonal pattern could be studied in only 1 case among the above and that showed oestrogenic pattern.

In 2 of the above cases hysterectomy

was done and the diagnosis was again confirmed.

### Discussion

Though the vaginal smear is also used in the detection of endometrial carcinoma, direct sampling proves to be more reliable. The length of time the endometrial cells take to reach the vaginal pool, alterations in PH., inflammatory conditions of cervix and vagina and dilution of cytological material by other secretions in posterior pool—all materially alter the morphological features of the cells and render the diagnosis difficult. Also confusion may occur between the endometrial cells and endocervical columnar cells and histocytes. Direct sampling is more advantageous and enhances the accuracy rate. Only disadvantage is that utmost care has to be taken and in some occasions, there may be failure in aspiration.

A wide variety of appliances have been used for the purpose of endometrial aspiration. In 1943, Cary devised an intrauterine aspiration cannula. Reagan and Sommerville (1954) used a blunt tipped laryngeal cannula with an attached syringe. Ayre (1955) employed a rotating brush. Fox (1962) used a brush made up of a malleable wire staff and bristles of cellulose fibers and used a vibrator to shake off the material from bristles into 0.85 per cent saline solution.

Torres *et al* (1969) devised a polyethylene tubing attached to a syringe. The Gravlee Jet-washer consisting of a double lumen polyethylene tube has the advantage of a negative pressure operation and there is no limit to the amount of irrigant that can be used (Dowling, *et al* 1969).

Some others used a high vacuum aspiration.

Torres *et al* (1969) made a direct smear from the washings of a jet-washer whereas Dowling (1969), and Creaseman and Weed (1976) centrifuged the washings, made cell-blocks, prepared sections and studied them. Whatever method they employed, every author claimed a higher success rate with direct sampling than with a vaginal smear.

Aspiration would be difficult in cervical stenosis and atrophic endometrium. Doran and Thompson (1968) reported a failure rate of 10.82%, Torres *et al* 11.6%, Dowling *et al* (1969) 27%, and Anderson *et al* (1976), 17% with saline irrigation, 32% with brush, 25% with vacuum aspiration and 21% with Jet-Wash.

Watchel (1969) opines that attempts to correlate cytological findings with cyclical changes of endometrium are not fruitful. In our series also we noted the same excepting that large clusters of cells are usually seen in secretory phase.

Inflammatory conditions revealed abundant inflammatory cells. Also 2 cases of postabortal endometritis and one case of missed abortion showed plenty of decidual cells in endometrial smears.

In hyperplastic conditions, the endometrial smears did not show any characteristic features.

The chief value of cytology is in earlier detection of malignancy. In our present series, we could diagnose one case of carcinoma of cervix and 4 cases of endometrial carcinoma. In one case a suspicious diagnosis was made.

There was one false positive cases out of 73 cases (1.3%).

Hence it can be concluded that endometrial cytology could be used as a reliable screening procedure for diagnosis of endometrial carcinoma.

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See Fig. on Art Paper VII