

STUDY OF ENDOMETRIAL ASPIRATION CYTOLOGY AND ITS CORRELATION WITH HISTOPATHOLOGY

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SUMMARY

A total of 250 cases admitted with various gynaecological problems were subjected for endometrial aspiration cytology and curettage.

45.6% cases were in the age group of below 30 years. 48% presented with sterility while 44% with menstrual abnormalities. The incidence of menorrhagia was highest (59.09%) amongst all the menstrual abnormalities, followed by polymenorrhagia (18.77%); only 4.54% of the cases presented with metrorrhagia. On aspiration cytology adequate material was obtained in 92.4% of cases. Following endometrial curettage the material was adequate for histopathological diagnosis in 90.0% of cases. Cytological correlation with histopathology has shown highest correlation of 84.49% in secretory phase, followed by 68.75% in hormonal imbalance. Hundred percent correlation was observed in hyperplasia, tuberculosis and trophoblastic disease.

Introduction

The demand for testing endometrium for detecting pathological as well as hormonal status is increasing. Cytodiagnosis is extended very rapidly in various malignant and nonmalignant conditions. So the present study was undertaken to assess the case of collection of endometrial material and to assess the relative compatibility of aspiration cytology and histopathology.

Material and Methods

The study group comprised of 250 patients with various gynaecological disorders seen from March, 1987 to April 1988. After a thorough history and examination the patients were subjected for aspiration of endometrium. After cleaning the part an umbilical vein cannula was passed into uterine cavity and attached to 5 ml syringe. A gentle negative pressure was applied through syringe following to and fro movement in the uterine cavity and the material was aspirated. This material was spread over a slide and fixed immediately in 95% alcohol and ether.

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The staining was done by papanicolaou method. The dilatation and curettage of these cases was done following aspiration to obtain endometrium for histology. Cytology and histopathology reporting was done separately by two sets of pathologists.

Observations

The women were aged between 20-65 years and the maximum of 114(45.6%) cases were in the age group below 30 years.

The various presenting complaints was shown in Table I.

TABLE - I
PRESENTING COMPLAINTS
OF THE PATIENTS

Complaints	No. of cases	% age
Sterility : Primary	88	35.2
Secondary	32	12.8
Menstrual disorders	110	44.0
Ovarian lump	7	2.8
Prolapse	8	3.2
Secondary amenorrhoea	5	2.0
Total	250	100.0

Table II shows amount of material aspirated and curetted out for opinion.

TABLE - II
TABLE SHOWS AMOUNT OF MATERIAL
OBTAINED BY CYTOLOGIC ASPIRATION
AND CURETTING FOR HISTOPATHOLOGY

Amount	Cytological aspirate	Histopathology curetting
Adequate	231(92.4)	222(90.0)
Inadequate	19(7.6)	25(10.0)
Total	250(100.0)	250(100.0)

Figures in parentheses indicate percentage.

The cytological and histopathological diagnosis is depicted in Table III and IV respectively.

TABLE - III
CYTOLOGICAL DIAGNOSIS

Cytological diagnosis	No. of patients	Percentage
Secretory phase	135	54.0
Proliferative phase	57	22.8
Endometritis	12	4.8
Tuberculosis	3	1.2
Hyperplasia	6	2.4
Hormonal imbalance	16	6.4
Trophoblastic disease	2	0.8
Inconclusive	19	7.6
Total	250	100.0

TABLE - IV
DISTRIBUTION OF CASES ON
BASIS OF HISTOPATHOLOGY

Histopathology	No. of cases	Percentage
Secretory phase	127	50.8
Proliferative phase	41	16.4
Endometritis	6	2.4
Tuberculosis	4	1.6
Hyperplasia	6	2.4
Hormonal imbalance	37	14.8
Trophoblastic disease	2	0.8
Decidual reaction	1	0.4
Atrophic endometrium	1	0.4
Inconclusive	25	10.0
Total	250	100.0

Correlation of Cytology and Histopathology

When the results of cytological and histopathological diagnosis were correlated it was observed that out of 129 cases diagnosed as secretory on cytology, 109(84.49%) cases were correlated accu-

rately with histopathology (6 cases of histopathology slides were insufficient for diagnosis hence not included). Whereas only 32(64.0%) out of 50 cases (7 not included for comparison as specimen was inadequate on histopathology slide) of proliferative phase showed correlation with histopathology as well. Sixteen cases of hormonal imbalance diagnosed on cytology, 11(68.75%) were also diagnosed on histopathology. All cases of cytologically diagnosed tuberculosis, hyperplasia and trophoblastic disease showed accurate correlation with histopathology. But only 6 cases (50%) out of 12 of endometritis showed correlation with histopathology. Out of 19 inconclusive smears of cytology 11 were also inconclusive on histopathology (Table V).

Discussion

The present study has shown that aspirated material was adequate in 92.4%. It is believed that the material becomes adequate when it is aspirated in the later part of the cycle as compared to aspiration in the early part of the cycle.

The correlation between cytological findings and histological diagnosis, has shown 84.4% in secretory and 64.0% in proliferative and 100% in hyperplastic endometrium. Available literature has shown a variation of correlation (Table VI). This variation in correlation in phase endometrium could probably be either due to one or combination of more than one of the following factors such: as (1) inadequacy of sample, (2) low rate of exfoliation

TABLE - V
INTERPRETATION OF ENDOMETRIAL ASPIRATION :
CORRELATION OF CYTOLOGY AND HISTOPATHOLOGY

	Cytology	Histopathology	Correlated cytology with histopathology	Misdiagnosis
Secretory phase	*129	109	84.49%	13 (HI) 5 (Proliferative) 1 (Atrophic) 1 (Endometritis)
Proliferative phase	**50	32	64.0	5 (H.I) 11 (Secretory) 2 (Endometritis)
Hormonal Imbalance	16	11	68.75	4 (Secretory) 1 (Proliferative)
Endometritis	12	6	50.0	
Tuberculosis	3	3	100.0	
Hyperplasia	6	6	100.0	
Trophoblastic disease	2	2	100.0	
Inconclusive	19	11		

HI = Hormonal Imbalance

* 6 inadequate in histology hence not included.

** 7 inadequate in histology hence not included.

TABLE - VI
ENDOMETRIAL TYPES, COMPARISON WITH OTHER WORKERS

Worker	Secre- tory phase	Prolife- rative phase	Endo- metritis	Tuber- culosis	Horm- onal imbalance	Hyper- plasia	Malig- nancy	Atrophic endo- metritis
Fox et al (1962)	71.0	95.0	—	—	—	82.0	—	87.0
Nadkarni et al (1984)	86.6	86.1	—	2 cases missed	—	75.0	—	100.0
Aggarwal et al (1985)	95.5	86.5	—	—	—	64.5	83.3	—
Chakravorty et al (1986)	100.0	100.0	58.3	—	—	87.5	100.0	—
Present Study (1988)	94.4	64.0	50.0	100.0	68.7	100.0	—	—

of phase endometrium, (3) errors in cytological detection technique and interpretation, and (4) finally pattern of reporting. The correlation in hormonal imbalance with histological diagnosis is not shown in any of the series, though this pattern is adopted in our institute.

The high degree of accuracy between cytological and histological study in tubercular endometritis could be explained on the basis of the appreciable morphological criterion for diagnosis of the diseases. As in the trophoblastic disease the simple appearance of syncytial giant cells makes the diagnosis it was correlated with 100% of accuracy.

Aspiration cytology is a safe, simple and reliable technique without any complications. This can be used as an OPD procedure with safety, reliability and minimum discomfort to patient. The use of polythene umbilical vein cannula as a device for endometrial aspiration is good

enough to provide adequate cytological material for examination. The cytological correlation was found to be the best in tubercular endometritis, trophoblastic disease and hyperplasia of the endometrium. This study suggests that aspiration cytology can be utilized in the follow up of the patients with organic lesions particularly in tubercular endometritis and trophoblastic disease under treatment. A good positive correlation exists between cytology and histopathology in phase endometrium, so it can be used to assess the hormonal status.

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