PRE-MALIGNANT AND MALIGNANT LESIONS OF THE CERVIX UTERI: ITS CYTOHISTOLOGICAL CORRELATION

by

AGNESAMMA JACOB,* M.D.

N. SREEDEVI AMMA,** M.D.

and

K. T. MATHEW,*** M.D.

Introduction

The ready accessability of the cervix for examination has stimulated a vigorous attack on cancer of the cervix. In those countries where mass screening by cytology is undertaken, the incidence of this carcinoma has come down.

The accuracy of the cytology report depends mainly on having good correlation with histology. The present study is undertaken mainly to assess the acuracy of cytological diagnosis by comparison with histology.

Material and Methods

The target patients consisted of women with gynaecological complaints who have attended the out patient department of S.A.T. Hospital, Trivandrum. Smears were also collected from women who were examined in cancer detection camps in various parts of S. Kerala, sponsored by Kerala branch of Indian Cancer Society. Cervical scrape smears were taken and fixed in ethyl alcohol and ether in equal proportion for a period of fifteen to thirty minutes. Smears were stained with modified pap stain. Punch biopsies were taken from 145 cases after in-vivo staining with Schillers iodine or one per cent toluidine blue. Histopathological examination was done after routine processing and staining. Serial sections were taken and special staining, Periodic-Acid-Schiff and Gomoris silver impregnation for reticulin were done to demonstrate the basement membrane where ever necessary.

The lesions were classified as following:

Benign or Bland lesions,

Cervical Intra Epithelial Neoplasms (CIN) or Malignant lesions

Dysplasia (Mild—Moderate—Severe)

Carcinoma in situ.

Microinvasive carcinoma.

Invasive Carcinoma.

Results

Table I shows analysis of 2367 cases of cervical smears.

Carcinoma in situ is a condition in which there is absence of invasion and shows an epithelium as a surface lining in which no differentiation takes place through out its whole thickness (Fig. 1). The process may involve the gland. Dysplasia is a disorder in which the

*Tutor in Pathology, Medical College, Kottayam.

**Associate Professor of Pathology, Medical College, Trivandrum.

***Principal, Medical College, Alleppey.

Name of the Institution where the study was done.

Department of Pathology, Medical College, Trivandrum.

Accepted for publication on 16-11-78.

TABLE I

Cytological Pattern in 2367 Cervical Smears

		Percentage
Benign (Bland) lesions and normal	1654	69.83
Unsatisfactory	125	5.4
Mild dysplasia	166	7.05
Moderate dysplasia	194	8.19
Severe dysplasia	124	5.23
Carcinoma in situ	11	0.46
Invasive carcinoma	93	3.84

epithelial cells fail to mature. Depending on the degree of maturation the lesion is classified as mild, moderate and severe dysplasia. In microinvasive carcinoma, small aggregates of cells breaks through the basement membrane in one or more foci, to a depth of 5 mm or less below the level of the epithelium, in which lymphatic or vascular involvement is not demonstrated.

Carcinoma in situ is cytologically characterised by a mixture of dyskaryotic and cancerous cells. However, if the size of the lesion is small, a large number of normal cells may be present (Fig. 2). In dysplasia dyskaryotic cells are seen. Depending on the degree of epithelial abnormality, the type and maturity of the dyskaryotic cells vary. Thus if only superficial cell dyskaryosis is present the lesion is often of mild dysplasia (Fig. 3). In severe dysplasia the cells are often of parabasal and intermediate type (Fig. 4). In moderate dysplasia the cells are of a pattern intermediate between mild and severe dysplasia. Groups of malignant cells with a high degree of pleomorphism and nuclear hyprchromatism are seen in groups in invasive carcinoma. Carcinomatous cells arranged in typical adenomatous pattern was seen in a case of invasive adenocarcinoma of cervix.

Table II shows comparison of cytology and histology reports and Table III shows the percentage of accuracy.

TABLE II

A Comparison of Cytology and Histology Reports of 145 Cases

Histological Diagnosis		Cytological Diagnosis							
		Total	Invasive carcinoma	Carcinoma in situ	Dysplasia Severe	Moderate	Mild	Benign Lesions	Normal
Invasive Carcinoma		26	21	4	1	—	—	—	—
Microinvasive Carcinoma	2	6	—	3	2	—	—	—	1
Carcinoma in situ	4								
Dysplasia:									
Severe	11								
Moderate	23	55	—	—	10	25	5	15	—
Mild	21								
Benign lesions		53	—	—	—	4	5	41	3
Normal		5	—	—	—	—	2	—	3

TABLE III
Calculation of Percentage of Accuracy

				Percentage
Histology / Cytology	Invasive carcinoma / Carcinoma in situ / Dysplasia / Normal	..	5	3.45
Histology / Cytology	Carcinoma in situ / Microinvasive carcinoma / Dysplasia / Normal	..	3	2.1
Histology / Cytology	Dysplasia / Benign lesions	..	15	10.25
Under estimated all groups		..	23	15.8
Histology / Cytology	Normal / Dysplasia	..	2	1.37
Histology / Cytology	Normal/Benign lesions / Dysplasia	..	9	6.13
Histology / Cytology	Dysplasia/Benign lesions/ Normal / Carcinoma	..	Nil	
Over estimated all groups		..	11	7.5

Discussion

In the study of cervical lesions, exfoliative cytology may be used in three different ways, first, to screen populations of all women, both as a prophylactic measure, and to investigate the epidemiology of the lesions, second, as an investigative tool combined with colposcopy and colpomicroscopy to study the morphogenesis of carcinoma and malign lesions (Richart 1967) and third, to control the clinical management of the patients with malignant cervical lesions (Langley and Chrompton 1973).

The value of cytology diagnosis depends mainly on having good correlation with histology diagnosis. In the present study, cyto-histo correlation was done to assess the accuracy of cytology diagnosis. Table I shows the analysis of 145 lesions of the cervix studied by cytology and proved by histology.

False negative means underestimation of the severity of the lesion. Of the 26 cases of histologically proved invasive carcinoma, 4 cases were cytologically interpreted as carcinoma in situ, I as severe dysplasia. Two cases of carcinoma in situ were diagnosed as severe dysplasia and I was misdiagnosed as normal. Of the 55 cases of dysplasia, 15 cases were underestimated as benign lesions. When the underestimation of the disease process as a whole is considered the value of false negative is 15.8 percentage. However, only I case of carcinoma in situ was reported as completely negative for

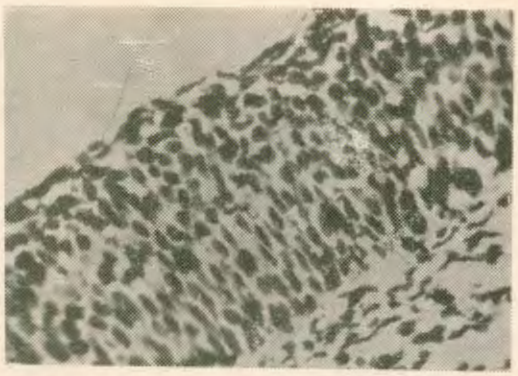

Fig. 1
Carcinoma in situ.

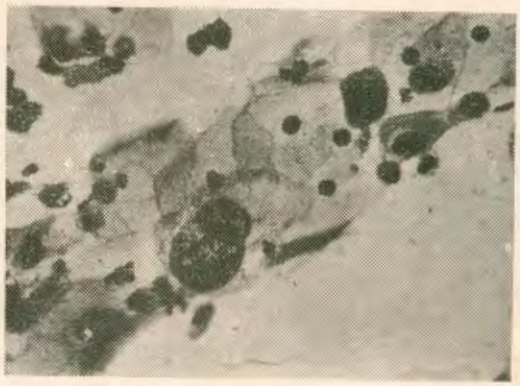

Fig. 2
Cervical smear in a case of carcinoma in situ.

Fig. 3
Cervical smear—a case of mild dysplasia.

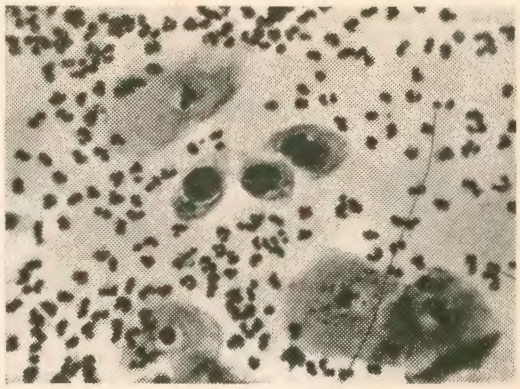

Fig. 4
Cervical smear—a case of severe dysplasia.

Pre-malignant and Malignant Lesions of the Cervix—A. Jacob et al. pp. 1206-1209

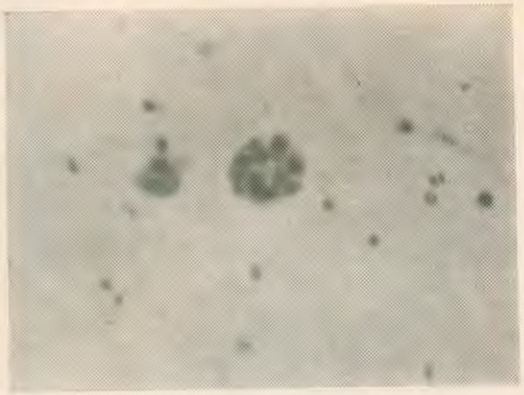

Fig. 5
Cervical smear—a case of infiltrating adenocarcinoma cervix.

Multiple Severe Congenital Malformations of the Foetus—Gulati and Kalra pp. 1246-1247

Fig. 1
Skiagram P.A. view of chest showing right side of thoracic cage well developed as compared to the left. Scoliosis of thoraco-lumbar spine is also evident with convexity to left.

Fig. 2
Skiagram lateral view of the foetus showing lordosis of lumbosacral spine. Huge omphalocoele with gut and other abdominal contents are seen lying outside the abdominal cavity.

Fig. 3
Photograph of foetus with omphalocoele, attached placenta, talipes equinovarum deformity of feet and poorly defined external genitalia-2 labioscrotal swellings and a single urogenital sinus opening in which a polythene tube is introduced and is escaping through abdomi