# CLINICO PATHOLOGICAL STUDY OF CERVICAL LESIONS

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by gynaecologists for early detection of vix like chronic cervicitis, erosion, uncancer as well as for the hormonal evalu- healthy cervix and laceration are the ation, chromosomal make up, sex determination and determination of host sensitivity response to radiation therapy. The realisation that invasive cancer of the cervix is preceded by recognisable precancerous histological and cytological changes was one of the most basic contribution that aroused greater interest in the possibility of preventing cancer by early cytological detection. The importance of cytology in early detection of cervical carcinoma is very well known. However, its role is less well understood as far as the inflammatory lesions of the Cervix are concerned (Domadia and Vaidya, 1974). It has been observed that invasive carcinoma is preceded by carcinoma in situ. Changes occurring in the epithelium prior to develepment of in situ carcinoma, although morphologically recognizable are not universally accepted. Inspite of accumulating evidence in support of proposition that cervical atypia is a phase in the development of cervical carcinoma, direct proof

Vaginal cytology today is widely used is still not available. Lesions of the cercommonest benign conditions showing typical cellular changes (Bechtold and Reichner, 1952; Lerch et al, 1963; Kaufman et al, 1967; Mali et al, 1969; Langley, 1975). Hence it is of paramount importance to detect these lesions early enough and treat them adequately if the cancer of the cervix is to be warded off (Wahi et al. 1969).

> In India, like many developing countries in the world majority of women do not have protection of an annual 'Pap' test. In western countries the 'Pap' test has become a household word and thousands of young women are being saved by early detection of cancer of cervix. In view of this a study was undertaken to detect the incidence of precancerous lesions so that early preventive treatment may be possible for susceptible cases.

### Material and Methods

One hundred and twenty-five cases attending gynaecology department of Medical College, Aurangabad, from different age groups, parity and socioeconomic conditions were included in the present study. The complete clinical history recording and general and systemic examinations were undertaken. Speculum and

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vaginal examinations were done, cervical smears were taken with cotton swab method as described by Koss (1968). Smears were fixed in 50:50 ether alcohol mixture for a minimum of 15 minutes and then stained by Papanicolaou stain (Papanicolaou, 1942).

Out of 125 cases of cervical erosion in non-pregnant women only 50 cases were coupled with cervical biopsy. The cytological criteria used for diagnosis of normal and abnormal smears were that of W.H.O. (1973). Histological lesions were diagnosed according to the criteria of Novak (1967).

#### Observations

Cytology smears of 125 cases of cervical erosion in non-pregnant women were analysed. In 75 cases only cytology was done, whereas in 50 cases biopsies were also done. Out of 50 cases, in 17 cases histopathologically cervical epithelium was not observed, therefore histopathological correlation was possible only in 33 cases.

Cervical erosion was common in the age group 26 to 40 years. Peak (27.2%) was observed in 31 to 35 years age group.

Cervical erosion was frequent in multiparous women. Maximum cases (28.8%) belonged to the group of women having history of 3 full term normal deliveries. In the majority of cases (73.6%) there was no history of menstrual abnormalities. Incidence of clinical varieties of cervical erosion is shown in Table I.

Leucorrhea alone was found in 27.2% and leucorrhea + backache in 45.6%

vaginal examinations were done, cervical Intermittent bleeding was found in 19.2% smears were taken with cotton swab of the cases.

Cytologically all smears except 6 showed inflammation (Figs. 1, 2, 3). Chronic cervicitis was observed in 41.6% of the cases, whereas 50.2% cases showed dysplasia (Table II, III). In situ carcinoma was observed in 2.4% cases (Fig. 4). Only 1 case revealed invasive carcinoma.

TABLE II
Cytological Diagnosis in 125 Cases of Cervical
Erosion

Cytological diagnosis	No. of cases	Percen- tage
Chronic cervicitis     Inflammation with     dysplasia	52	41.6
(a) Grade I (b) Grade II (c) Grade III 3. In Situ carcinoma 4. Invasive carcinoma	46 13 4 3	36.8 10.2 3.2 2.4 0.8
5. Non-inflammatory non-dysplastic sim- ple erosion	6	4.8

TABLE III
Histological Diagnosis in 50 Cases of Cervical
Erosion

Histology	No. of cases	Percen- tage
1. Epithelium not		
observed	17	34.0
2. Chronic cervicitis	7	14.0
3. Dysplasia grade I	19	38.0
4. Dysplasia grade II	2	4.0
5. Dysplasia grade III	2	4.0
6. In situ carcinoma	2	4.0
7. Invasive carcinoma	1	2.0

TABLE I
Clinical Varieties of Cervical Erosion

Sm	nall	Mod	lerate	La	rge	
No. of cases	Percen- tage	No. of cases	Percen- tage	No. of cases	Percen- tage	Total
32	25.6	69	55.2	24	19.2	125

Histologically, epithelium was not observed in 17 cases (Table III). Out of the remaining 33 cases dysplasia grade I (Fig. 5) was common (38%), whereas grade II and grade III (Fig. 6) each was present in 4%. Two cases showed in situ carcinoma and 1 case showed invasive carcinoma (Fig. 7).

Out of 17 cases in which surface epitheleum could not be observed, majority (47%) belonged to inflammatory group, as shown in Table IV.

TABLE IV
Cytological Diagnosis in 17 Cases of Cervical
Erosion in Which Histologically Epithelium was
not Observed

Cytological diagnosis	No. of cases	Percen- tage
Simple erosion	1	5.8
Inflammation	8	47.0
Dysplasia grade 1	3	17.5
Dysplasia grade II	5	29.4

Cytohistological correlation was possible in 33 cases only. Out of 9 cytologically diagnosed cases of pure inflammation, histologically 7 showed inflammation and 2 showed inflammation with dysplasia grade I. Out of 3 cytologically diagnosed cases of dysplasia-II, histologically 1 case showed dysplasia grade I. In rest of the cases, there was 100% cytohistological correlation (Table VII).

#### Discussion

Cervical erosion is a very common lesion in gynaecological practice, being responsible for common symptoms like backache, white discharge, abdominal pain, intermittent and irregular bleeding. In the present study 125 cases of cervical erosion in non-pregnant women were analysed. The commonest clinical symptoms were leucorrhea and backache (45.6%). Sunandabai et al (1968) have

TABLE V
Cytohistological Correlation in 33 Cases

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Cytological diagnosis	liagnosis			Histologic	Histological diagnosis		1
		Inflam- mation	Dysplasia I	Dysplasia II	Dysplasia III	In situ carcinoma	Invasive
	No. of % Cases	No. of % Cases	No. of % Cases				
Inflammation	9 27.27	T. TT. T	2 22.2				
Dysplasia I	16 48.48	1	16 100.0	1	1	.1	1
Dysplasia II	3 9.09	T.	1 33.3	2 66.6	i	1	1
Dysplasia III	2 6.06	1	1	1	2 100	1	1
In situ carcinoma	2 6.06	1	1	1	1	2 100	1
Invasive carcinoma	1 3.03	-	1	-	-	1	1 100
Total	33 100	1	19 –	- 2	2	1	1

TABLE VIII
Comparison of smear pattern in erosion cases

Author's name	No. of						0	Cytology	logy	-	-				
and year	erosion	Normal	nal	Inflam- mation	-m	Dysplasia I	asia	Dysplasia II	asia	Dysplasia III	sia	In situ carcinoma		Invasive	ve
		No. %	%	No.	%	No.	%	No. %	%	No. %	26	No.		No.	200
Dixit and Virkar (1971)	099	95	14.3	20	3.33	438 66.3	66.3	105 15.9	15.9	2 0.3	0.3		ı	1	1
Joshi (1972)	100	1	1	92 92	92	14 14	14	70	10	23	2	2 2	23	1	-
Chakravarty et al (1974)	1949	1	1	1		42	2.1 19 0.97	19	76.0	12	9.0	7 0.35	0.35	24	1.2
Present study	125	9	8.8	52	52 41.6	46	46 36.8	13 10.2	10.2	4	3.2	က	2.4 1 0.8	1	0

similarly reported leucorrhea in 76.5% of their cases. Majority of cases in the present series (47.2%) belonged to age group 31-40 years and the frequency of the cases in the age group 21-30 was 31.2%. On correlating the grade of dysplasia with age group it was found that dysplasia grade I and grade II were common between 31-40 years; dysplasia grade III was common over a wider age group nearly 31-50 years. The mean age for dysplasia, carcinoma in situ and invasive carcinoma in the present series were 37.3, 48.3 and 40 years respectively. It has been thought that dysplasia precedes carcinoma in situ and carcinoma in situ may persist for a long time before invasive carcinoma may develop. From our finding stated above it appears that dysplasia certainly develops below the age of 40 years and cancer develops later. This observation supports the view of chronological progression from dysplasia to invasive carcinma ultimately.

According to Chakravarty et al (1974) anaplasia and dysplasia do not depend upon race or religion but it is better correlated with socio-economic status, hygienic conditions and sexual practices. The present group of cases regardless of their casts came from low socio-economic strata living in most unhygienic surroundings.

Erosion was more frequent in multiparous women (91.2%) as compared to nulliparous (8.2%) in the present series of cases. Kleegman (1940) and Dass and Bhargava (1963) have also reported a high incidence of erosion in multiparous women. Repeated trauma of frequent deliveries seems to be responsible as a contributory factor in producing cervical erosion. The incidence of dysplasia in cases of erosion was high in multiparous women (95.2%) as against 4.8% in nulliparous women.

All the cases of carcinoma in situ and

invasive carcinoma belonged to multiparous women. This once again emphasizes the importance of multiparity in contributing to pathogenesis of dysplasia and other premalignant or malignant lesions of cervix.

There is no specific cytological picture diagnostic of erosion. However, erosion may be suspected if large numbers of endocervical cells are recovered from scrapping taken direct from erosion. The other findings consist of mainly an over all pattern of inflammation (Watchel, 1969). The greatest value of cytology in the study of erosion is to assess the presence of premalignant or malignant changes in the cervical epithelium. Cytological findings of cervical erosion by other authors are shown in Table VI.

Dixit and Virkar (1971) have not reported even a single case of carcinoma in situ or invasive carcinoma in their series. However, Joshi (1972) has reported carcinoma in situ in 2% cases of cervical erosion and invasive carcinoma in 1% of cervical erosion in her series. Chakarvarty et al (1974) have reported 73 cases of dysplasia from a total of 1949 cases of cervical erosion; they encountered however only 7 cases of carcinoma in situ and 24 cases of invasive carcinoma in their series. Domadia and Vaidya (1974) encountered 39 cases of dysplasia, 34 cases of suspicious malignancy and 20 cases positive for malignancy in a total of 463 cases. Kroll (1970) has reported an incidence of 3.7% malignancy in cervical erosion.

In most of the cases cytological finding correlated with histological findings. Disparity was however observed in 2 cases of inflammation and 1 case of moderate dysplasia. Two cases cytologically belonging to inflammatory group showed mild dysplasia from histological studies and one case of moderate dysplasia diagnosed cyto-

logically showed on histological examination only mild dysplasia. The only possible explanation for such a lack of correlation seems to be the error of sampling which can occur in cytological smear as well as in removal of tissue for biopsy. Collecting material for cytology while visualizing directly the erosion of cervix may avoid sampling error. Similarly, choice of tissue removed for biopsy may not necessarily show the severest cytological change possible in histological slide. A cone biopsy may be a solution to this and must therefore be advocated whenever possible. An alternative solution to this problem may be employing colposcopy for obtaining biopsy material so as to enhance the accuracy of cytolological correlation (Odell et al, 1968; Ortiz et al, 1969).

According to Chandra (1971) severe dysplasia may be mistaken as carcinoma in situ, however, in the present series cytological correlation for the cases of severe dysplasia, carcinoma in situ and invasive carcinoma was 100%, nevertheless, the number of cases in this group was rather small. Thus cytology can help to predict the histopathological changes in the cervix and play its more useful role during follow up of cases under necessary treatment. Cytology also helps in selecting cases for special biopsies, especially for cone biopsy.

#### Summary

One hundred and twenty-five cases of cervical erosion in non-pregnant women were analysed for incidence of dysplasia, carcinoma in situ and invasive carcinoma, and for correlation with clinical findings. Leucorrhea and backache were the commonest presenting symptoms (72.8% of cases). Highest incidence was found in age group 31-35 years. Erosion was more common in multiparous women especially having 3 or more deliveries. Incidence of

severe dysplasia, carcinoma in situ and invasive carcinoma was 3.2%, 2.4% and 0.8% respectively. In majority of cases correlation was possible between cytology and histopathology. In minor group of cases where correlation may be lacking, repeated cytological examination and use of special biopsy procedures such as cone biopsy and use of colposcopy to obtain the biopsy material should obtain total correlation between the two.

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#### References

- Bechtold, E. and Reichner, N. B.: (1952)
   Quoted by Reference 10 1968.
- Chakravarty, B. N., Poddar, D. L., Sarkar, S. K. and Dass, N. The Congress proceeding, 6th Asian Congress of Obst. & Gynec. 17-25, 1974.
- 3. Chandra, K. I. C. M. R.: 5: 17, 1971.
- Dass, A. and Bhargava, V.: J. Obst. & Gynec. India. 13: 394, 1963.
- Dixit, S. S. and Virkar, K. D.: I.C.M.R.
   22, 1971.
- Domadia, M. M. and Vaidya, P. R.: The Congress Proceedings 6th Asian Congress. Obst. & Gynec. 95-99, 1974.
- 7. Joshi, S. D. Vaginal cytology in cervical

- erosion. Dissertation for M. D. (Poona University), 1972.
- 8. Kaufman, R. H., Johnson, W. A., Spjut, H. J. and Smith, A.: Acta. Cytol. 11: 1, 1967.
- Kleegman, S. (1940) Quoted by Reference 19.
- Koss, L. G., Diagnostic cytology and its histopathological basis, 2nd Edn. J. B. Lippin Cott. company, Philadelphia Toronto, 1968.
- Kroll, U. M. Brit. Med. Jour. 2: 640, 1970.
- Langley, F. A.: J. App. Med. 1: 297, 1975.
- Lerch, V., Okagaki, T., Austian, J. H., Kevorkian, A. Y. and Youge A. P.: Act. Cytol. 7: 183, 1963.
- Mali, S., Luthra, U. K. and Wahi, P. N., Ind. J. Med. Res. 57: 624, 1969.
- Novak and Woodruff. Novak's Gynecologic and Obstetric Pathology with clinical and endocrine relations. 6th Edn.
   W. B. Saunders Company, Phildelphia and London, 1967.
- Odell, L. D., Merrick, F. W. and Ortiz, R. (1968). Quoted by Chandra, 1971.
- Ortiz, R., Newton, M. and Langlais,
   P. L. Obst. & Gynec. 34: 303, 1969.
- 18. Papanicolaou, G. N. (1942) Quoted by Reference 10.
- Sunandabai K. Rohtagi, P., Tiagi, K. G. and Nagran, S. S.: J. Obst. & Gynec. Ind. 18: 703, 1968.
- Wahi, P. N., Luthra, U. K., Mali, S.
   Ind. J. Med. Res. 57: 617, 1969.
- Watehel, E. G.: Exfoliative Cytology in Gynecological Practice 2nd Edn. Butterworth, 1969.
- W.H.O. Cytology of the Female Genital Tract. No. 8, 1973.