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Colposcopy in the Management of Cervical Dysplasia

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A follow-up study was carried out on 27 patients with high dysplasia and 133 patients with mild dysplasia for at least 1 year, using mainly cytodiagnosis and colposcopy. Advanced cases were identified in 25.9% of the first group and 8.3% in the latter group. It was demonstrated that these advanced cases could be found without fail from colposcopic findngs combined with cytodiagnosis.

(Key Words: Follow up study of cervical, Dysplasia, Cytology, Colposcopy)

INTRODUCTION

Dysplasia in the uterine cervix is considered to be a predictive lesion of cervical cancer. Therefore, it may be the best preventive measure at present to find and treat this dysplasia.

All types of dysplasia do not progress so far as to become cancerous, and some of them heal naturally. Therefore, all patients with these types of dysplasia do not require medical treatment (2, 3).

It is therefore sufficient to select and treat only the patients with progressive dysplasia (3). The follow-up study was carried out using cytodiagnosis and colposcopy in order to discover the progressive cases early and hence enable the eradication of the cervical cancer.

MATERIALS AND METHODS

Out of 10,000 patients who were registered at the ambulatory clinic for oncology in the Department of Obstetrics and Gynecology Tokai University, School of Medicine during 1975 and 1983, 76 patients were found to suffer from severe dysplasia and 188 patients from mild dysplasia. The patients whose lesions progressed to maglinancy within 1 year were excluded, and the follow-up study was carried out for more than one year on both 27 patients with severe dysplasia and 133 patients with mild dysplasia who were finally selected and used as subjects for this study. 12 patients with moderate dysplasia, whose progress was similar to that of the patients with mild dysplasia, were included in this group of mild dysplasia and were studied by follow-up observation.

The test samples for cytodiagnosis were collected with swabs from the utero-vaginal part of the patients who visited the ambulatory clinic for oncology. The utero-vaginal parts were processed with a sufficient amount of 2% acetic acid. Then, the lesions were observed using a Zeis colposcope.

In order to describe the findings on the lesions as well as their location and scope, the eyepiece of the colposcope was graduated radially and concentrically, and the zoom lens was adjusted in such a manner as to set the outermost circle of graduation to overlap with the utero-vaginal part. These were recorded exactly (Fig. 1).

The findings through colposcopy were classified according to the IFCPC classification, but mosaic, punctation and white epithelium in the atypical transformation zone were further subdivided into 2 categories (1, 16), respectively. For mosaic epithelia, those classified as M_1, were of a weak white colour with reticular

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vessels of uniform diameter and order. Those classified as M_2, were of a strong white colour and the reticular vessels were various in their diameter and cut off in some places from the central vessel (Fig. 2).

For punctation, classified as P_1, were cases in which the number of red spots was small and their arrangement irregular, also the diameter of blood vessels was small and the white tone of the epithelium was weak. Classified as P_2 were cases in which the epithelium appeared to be hypertrophic, and the blood vessels were large in diameter and ran windingly on the surface (Fig. 3).

As for white epithelia, these were classified as W_1, in which the white tone was weak and the surface appeared to be smooth. When the white tone was strong, the epithelium was hypertrophic and the surface appeared to be rough and uneven, these were classified as W_2 (Fig. 4).

RESULTS

Supposing that the estimated diagnosis of severe dysplasia by cytodiagnosis falls under the category of III_b, 36 out of 76 total cases 47.4% were correctly diagnosed. In the same manner, 28.2% of the cases were correctly diagnosed for mild dysplasia. 3.9% and 7.5% of the cases were overdiagnosed for the former and the latter dysplasia, respectively. And, the rest 48.7% and 64.3% of the cases were underdiagnosed, respectively. All the cases which were diagnosed as negative by cytodiagnosis were discovered by colposcopy (Table 1).

For colposcopy, the cases which fell under the category of M_1, P_1, W_1, were counted as those in the group with a wider range when the cases had single and more than one findings. The cases under the category of M_2, P_2, W_2, were counted separately from those with a single finding and those with multiple findings. The cases which had the findings under the category of M_2, P_2, W_2, mixed with those under the category of M_1, P_1, W_1, were counted as those with significant findings only (Table 2 and Table 3).

66.8% of the patients with severe dysplasia and 41.2% of those with mild dysplasia fell under the category of M_2, P_2, W_2. We recognized that the colposcopical findings deteriorated in response to the severity of the lesions. And, 6 negative cases were found by colposcopy other than these. 4 out of these 6 cases were those with intra-cervical lesions, and the number of the cases with true false negative findings was 2 (Table 4).

As a result of follow-up carried out for more than 1 year in patients with severe dysplasia the lesions regressed in 14 patients (51.9%), they were unchanged in 6 patients (22.2%), and progressed into CIS in 7 patients (25.9%). (60.9%) regressed, (30.8%) were unchanged and (8.3%) progressed into CIS, in patients with mild dysplasia (Table 5).

As a result of follow-up cytodiagnosis on the lesions of 14 patients with severe dysplasia which regressed, all the lesions were found to have improved by cytodiagnostic findings. Characteristic of cases with lesions which persisted or regressed was that no improvement could be detected in the cytodiagnostic findings.

As for mild dysplasia, some improvement was observed in cases with lesions that regressed. However, as the cells do not adequately reflect the state of mild-dysplasia itself, some cases with lesions which progressed were found negative from the cytodiagnostic point of view. Therefore, this fact suggested that cytodiagnosis could not always be an adequate indicator for follow-up (Table 6).

In the follow-up study by colposcopy, some improvement was observed in the cases with severe dysplasia in which the lesions regressed, but this improvement was not marked. Marked progress in lesions was observed in cases with lesions which persisted or progressed (Table 7).

As for mild dysplasia, the findings observed by colposcopy disappeared in 57 (70.4%) of 81 cases with the lesions which regressed. However, the findings did not reflect the progress of the lesion in cases with lesions which progressed although no improvement was observed in these cases (Table 8).

Taking up the range of abnormal findings which occupied the field of vision through the colposcope for follow-up study, shrinkage was observed in cases where lesions regressed, and the colposcopic findings were enlarged in cases in which the lesions progressed, as in the case of severe dysplasia (Table 9).

As for mild dysplasia, there were many cases in which the lesion regressed and where the lesions observed by colposcopy disappeared. Fre-

quent enlargement of the colposcopic findings was not observed even in cases where the lesions progressed.

When cytodiagnosis was combined with colposcopy (5, 6) in the follow-up study of each case, regression was observed by cytodiagnosis or by colposcopy from almost all cases with severe dysplasia which regressed. But it was noted that there was one case with colposcopic findings which deteriorated. It was also noted in the cases with the lesions which persisted that the colposcopical findings were various even in the cases where the cytodiagnostic findings were similar (Table 10).

In the cases with the lesions which progressed, the deterioration of colposcopic findings was markedly observed compared with that of cytodiagnostic findings (Table 11).

In the cases with mild dysplasia which regressed, and improving tendency was much clearer in the colposcopic findings than in the cytodiagnostic findings. The colposcopic findings were less various than the cytodiagnostic findings in cases with lesions which persisted. And in cases with lesions which progressed, deterioration was observed in either the cytodiagnositc or the colposcopic findings, or in both.

DISCUSSION

Cytodiagnosis is recommended as a primary means to discover cervical cancer, and, in fact, not less than 98% of discovery may be attained by cytodiagnosis in case where the invassive cancer is searched for. But, in the case of invassive cancer, it is difficult to attain 100% healing rate (18, 19). Especially in the case of young patients, it is important to preserve the uterus intact in order to enable to carry out parturition (8, 13). For that purpose, colposcopy was used on patients with dysplasia which is a predictive lesion of cancer, and a follow-up observation was carried out on them as well (14). Through observation of the advanced cases, we an effort was made for early treatment in order to prevent the cervical cancer and to avoid unnecessary excessive treatment.

Dysplasias were classified into only 2 categories such as "severe" and "mild". The prognosis of "moderate" was almost equivalent as "mild" although they could be classified histologically into different categories (9).

As for classification of colposcopical findings, various systems for subclassification were reported. In one system, each of M, P and W is divided further into 3 subclassifications, and combinations of M, P or W make up subclassifications in another system. But in this study, each of M, P and W were divided into 2 subclassifications, so that those who were not sufficiently skilled in colposcopy could classify the findings, and that the classified (12, 16, 20) findings could be adequately associated with the prognoses.

When these colposcopic subclassifications are combined with cytodiagnostic data in the follow-up observation on the patients with dysplasia, the cases with advanced dysplasia can be found in their early stage, and the cervical cancer can be effectively prevented.

CONCLUSION

Cervical intraepithelial neoplasm (CIN) in the uterus, has the properties of a malignant lesion. Most types of CIS may possibly by completely healed by the treatment of the cervix only, thus preserving the uterus intact.

On the contrary, dysplasia is reversible. In our hospital, only 25.9% of severe dysplasia progressed into CIS which required medical treatment. And almost all (91.7%) mild dysplasia cases persisted or regressed, and no further medical treatment was required. Therefore, in our follow-up study, the property of dysplasia, which progressed or regressed, was studied according to the classification which might be more accurate than the IFCPC classification by cytodiagnosis, and the following results were noted. For severe dysplasia, dysplasia regressed when both cytodiagnostic and colposcopic findings were good, and dysplasia progressed into the condition which required medical treatment when either cytodiagnostic or colposcopic findings became malignant. Even in the case of mild dysplasia, it was proven that the progress in the lesions was suggested by the deterioration of either cytodiagnostic or colposcopic findings.

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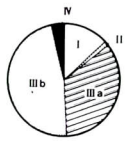
Table 1 Classification of PAP. smear severe dysplasia

PAP.	I	II	IIIa	IIIb	IV	V	Total
NO.	10	1	28	36	3	0	76
%	13.2	1.3	34.2	47.4	3.9	0	100



Classification of PAP. smear mild dysplasia

PAP.	I	II	IIIa	IIIb	IV	V	Total
NO.	89	32	53	12	2	0	188
%	47.3	17.0	28.2	6.4	1.1		100

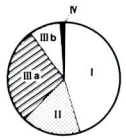


Table 2 Colposcopical findings of severe dysplasia

P_1	M_1	W_1		P_2	M_2	W_2	P_2M_2	P_2W_2	W_2P_2	$P_2M_2W_2$	aV		Total
4	10	13		8	11	14	1	2	2	3	13		81
4.9	12.3	16.0	33.2	9.9	13.6	17.3	1.2	2.5	2.5	3.8	16.0	66.8	100%

Table 3 Colposcopical findings of mild dysplasia

P_1	M_1	W_1		P_2	M_2	W_2	P_2M_2	P_2W_2	W_2P_2	$P_2M_2W_2$	aV		Total
28	51	33		12	30	12	12	4	1	1	7		191
14.7	26.8	17.3	58.8	6.3	15.7	6.3	6.3	2.0	0.5	0.5	3.6	41.2	100%

Table 4 Prognosis of 27 cases of severe dysplasia

regression	14	51.9
persistence	6	22.2
progress	7	25.9
Total	27	100%

Table 5 Prognosis of 133 cases of mild dysplasia

regression	81	60.9
persistence	41	30.8
progress	11	8.3
Total	133	100%

Table 6 Colposcopical findings of follow up in mild dysplasia

		N	UCF	P_1	M_1	W_1		P_2	M_2	W_2	P_2W_2	P_2W_2	M_2P_2	M_2W_2	$P_2W_2W_2$	aV	
regress	initial	0	9	14	25	15	63	6	9	3	8	0	0		0	1	27
	results	57	11	13	18	10	93	3	6	2	2	0	1		0	3	17
persistence	initial		1	9	10	10	30	2	5	3	1	2	1	0	0	3	17
	results		2	1	18	9	30	0	5	3	2	1	1	1	0	1	14
progress	initial		0	1	4	2	7	0	4	0	1	1	0	0	0	0	6
	results		0	1	3	2	6	0	4	1	0	0	1	0	1	0	7

Table 7 Colp oscopical findings of follow up in severe dysplasia

		N	P_1	M_1	W_1		P_2	M_2	W_2	p_2M_2	aV		Total
regression	initial		0	4	6	10	1	1	3	1	1	7	17
	results	9	0	2	3	14	1	1	1	0	0	3	
persistence	initial		1	0	2	3	1	1	0	2	0	4	7
	results	0	0	1	1	1	3	1	1	0	0	6	
progress	initial		0	2	2	4	1	2	1	1	0	5	9
	results		0	0	1	1	1	4	3	0	0	8	

Table 8 Segment area of abnormal colposcopical findings in severe dysplasia

area	1	2	3	4	5	6	7	8	aV
regression	5	3	0	1	0	0	0	0	1.07
persistence	2	2	1	1	0	0	0	0	2.17
progress	3	1	0	1	1	0	0	1	3.14

Table 9 Segment area of abnormal colposcopical findings in mild dysplasia

area	1	2	3	4	5	6	7	8	aV.
regression	19	13	5	6	0	1	0	3	2.33
persistence	12	9	3	7	0	0	0	2	2.60
progress	4	2	1	3	0	1	0	0	2.64

Table 10 Smear & Colposcopical findings combination of severe dysplasia

regression	Smear	↓	→	→	↓	→
	Colp.	↓	↓	→	→	↑
	Mo.	4	3	3	3	1
persistence	Smear		→	→	→	
	Colp.		↑	→	↓	
			2	[3]	1	
progress	Smear		→	→	↑	
	Colp.		→	↑	↑	
			1	[5]	1	

Table 11 Smear & colposcopical findings combination of mild dysplasia

regression	Smear	↓	→	→	↓	↑				
	Colp.	↓	↓	→	→	↓				
		[23]	[35]	13	10	1				
persistence	Smear	↓	→	→	↓	↑	↑	→	↑	↓
	Colp.	↓	↓	→	→	↓	→	↑	↑	↑
		1	3	[16]	[8]	1	[7]	4	1	1
progress	Smear	→	→	→	↑	↑	↓			
	Colp.	↓	→	↑	→	↑	↑			
		1	1	[3]	[3]	2	1			

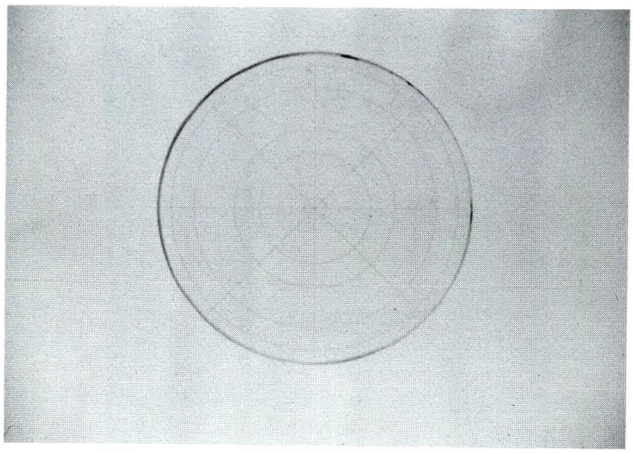


Fig. 1 The measure of colposcopical finding

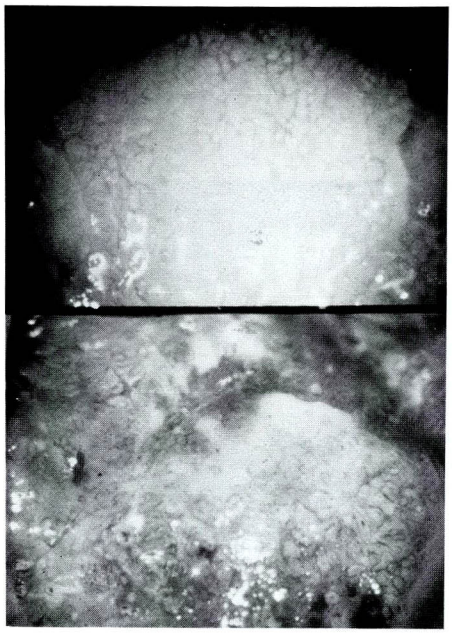


Fig. 2 Colposcopical findings of mosaic
upper M_1
under M_2

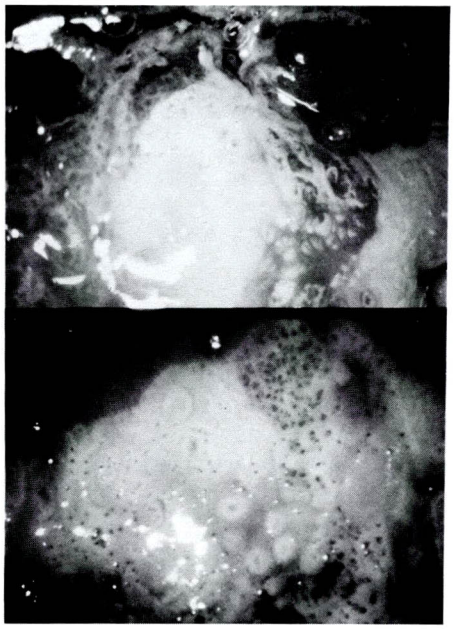


Fig. 3 Colposcopical findings of punctation
upper P_1
under P_2

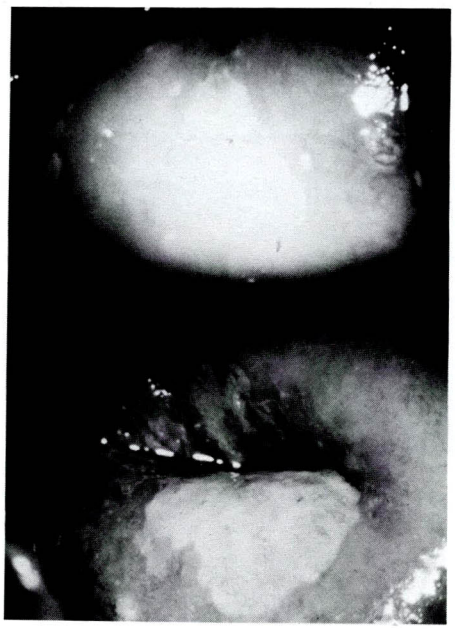


Fig. 4 Colposcopical findings of white epithelium
upper W_1
under W_2