

Letter

Nuclear grooves in intermediate cells

A number of studies have shown that the presence of intranuclear inclusions and nuclear groove are cytological diagnostic features of papillary carcinoma of the thyroid.¹ The presence of nuclear grooves on vaginal smears is also an interesting topic to be studied.

In a 4 month prospective observation (from August to November 1998) in cytology laboratory of the Department of Histology, Faculty of Medicine, University of Indonesia, nuclear grooves in the nuclei of intermediate cells have been observed. The specimens were collected from upper one third vaginal walls of the author's private patients. Relationship between the presence of nuclear grooves and the patient's age, day from the last menstrual period, and presence of inflammation were studied. The X² was used in this study.

The number of nuclear grooves in a low power microscope field does not relate to the patient's age (Table 1).

Table 1. Relationship between the number of nuclear grooves and patient's age

Patient's age (yr.)	Patients with	
	NG 0-1	NG > 1
< 35	8	5
≥ 35	15	5
Total	23	10

X² = 0.73, P > 0.05

NG = the amount of nuclear grooves field

No relationship was found between the number nuclear grooves and the time when samples were collected counted from the first day of the last menstrual period (Table 2). Observation could be made only in 30 patients, because 2 patients have had menopause and another 1 patient had used the Depo-progestin injections.

There was no relationship either between the presence of inflammation and the number of nuclear grooves (Table 3)

Table 2. Relationship between the number of nuclear grooves and the time of sample collection

Time of collection	Patients with	
	NG 0-1	NG > 1
< 14 days	9	3
≥ 14 days	11	7
Total	20	10

Table 3. Relationship between the number of nuclear grooves and the presence of inflammation

Inflammation	Patients with	
	NG 0-1	NG > 1
Present	8	5
Not present	15	5
Total	23	10

X² = 0.73 P > 0.05

The grooved nuclei appear to be a reflection of irregularity and indentation of the nuclear membrane.² The typical nuclear grooves are usually seen in squamous intermediate cells as a thin line running through the longitudinal axis. Usually several nuclear grooves can be seen in the five observation fields.³ In a study, nuclear grooves were found in 39 % and 43 % of intermediate cells, in proliferative phase and mid-cycle respectively.³ In a series of inflammatory changes, the presence of nuclear grooves does not seem to become the hallmark of intermediate cell atypic changes.

In this brief observation it is still doubtful whether nuclear grooves present in the intermediate cells from the upper third vaginal wall. Further investigations should be conducted.

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References

1. Gould E, Watzak L, Chamizo W, Albores-Saavedra. Nuclear in cytologic preparations: A study of the utility of this feature

- in the diagnosis of papillary carcinoma. *Acta Cytol* 1989; 33:16-20.
- Rupp M, Ehya M. Nuclear grooves in the aspiration cytology of papillary carcinoma of the thyroid. *Acta Cytol* 1989; 33:21-6.

Table 1. Relationship between the number of nuclear grooves and the presence of metastasis

Number of nuclear grooves	Metastasis	
	Present	Absent
0-1	1	1
2-3	1	1
4-5	1	1
6-7	1	1
8-9	1	1
10-11	1	1
12-13	1	1
14-15	1	1
16-17	1	1
18-19	1	1
20-21	1	1
22-23	1	1
24-25	1	1
26-27	1	1
28-29	1	1
30-31	1	1
32-33	1	1
34-35	1	1
36-37	1	1
38-39	1	1
40-41	1	1
42-43	1	1
44-45	1	1
46-47	1	1
48-49	1	1
50-51	1	1
52-53	1	1
54-55	1	1
56-57	1	1
58-59	1	1
60-61	1	1
62-63	1	1
64-65	1	1
66-67	1	1
68-69	1	1
70-71	1	1
72-73	1	1
74-75	1	1
76-77	1	1
78-79	1	1
80-81	1	1
82-83	1	1
84-85	1	1
86-87	1	1
88-89	1	1
90-91	1	1
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