4. DISCRIMINANT ANALYSIS OF CYTOMORPHOMETRIC MEASUREMENTS OF ORAL EPITHELIAL CELLS IN THE DIAGNOSIS OF ORAL PREMALIGNANCY AND MALIGNANCY

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The cytomorphometric measurements (nuclear diameter and cell diameter) of oral epithelial cells were subjected to discriminant analysis for the diagnosis of oral premalignancy and malignancy. Of the group of oral premalignant diseases, leukoplakia was studied and the malignant group oral squamous cell carcinoma (OSCC) was studied.

Smear and biopsy samples were collected from 136 lesions clinically diagnosed as oral leukoplakia or OSCC and 40 subjects with clinically normal buccal mucosa. The mean nuclear diameter (ND) and cell diameter (CD) values were obtained from the smears for each case. These samples were grouped according to the histopathological diagnosis. The study group is given below.

Group	Histopathological Diagnosis	Number of Samples
1	Normal	40
2	Hyperkeratosis or hyperplasia and acanthosis or squamous cell papilloma	58
3	Epithelial Dysplasia	27
4	Squamous Cell Carcinoma	51

When the discriminant analysis was carried out for nuclear and cell diameter values in between the groups, the discrimination was poor for group 2 and the normal samples whereas group 3 and group 4 were clearly discriminated from the normal samples ($p < 0.05$). The lesions with dysplasia (group 3) could be discriminated from lesions with hyperkeratosis, hyperplasia and acanthosis (group 2). Equations were obtained for discrimination between the groups in order to identify a new lesion as to which group it belongs.

This shows that the discrimination of dysplastic lesions and squamous cell carcinoma from the normal and non-dysplastic lesions would be possible by cytomorphometric measurements of the oral smears.