

4. CHEMILUMINESCENCE AND TOLUIDINE BLUE AS DIAGNOSTIC TOOLS IN EARLY DETECTION OF LEUKOPLAKIA

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Introduction. The recognition and management of premalignant disorders, and the understanding of their potential progression to oral cancer will minimize the morbidity and mortality, from treatment and will have a direct effect on patient survival. Estimates of the prevalence of oral potentially malignant disorders suggest an overall figure of between 2 to 3%, with the vast majority appearing clinically as leukoplakias, and usually presenting on the floor of the mouth, ventro-lateral tongue and buccal mucosa. Clinical examination alone cannot differentiate between dysplastic and non-dysplastic leukoplakia, and may confound the degree of dysplastic change. Although histologic examination of tissue from a biopsy is the gold standard for diagnosing oral cancer, chemiluminescence and toluidine blue are principal strategies to conventional examination used to assess the patient's lesions at risk of malignant transformation.

Methods and materials. A total of 10 patients with clinical appearance of premalignant lesions were included from the outpatients attending Dental clinic Nr. 2, USMF "N. Testemitanu", Chisinau. Among the subjects, minimum age was 18 years and maximum was 65 years, with a mean age of 40.7 years, and the majority (37.7%) of them belonged to the fourth decade of their life. The gender ratio among the observed patients tilted in favour of men. All clinical presentations of PMD disease had been new, with untreated oral mucosal lesions confirmed on provisional, incision biopsy diagnosis. Patients with a previous history of oral cancer or pre-cancer, those presenting with widespread multi-focal potentially malignant disease, and patients who had previously undergone radiotherapy treatment for a head and neck malignancy were excluded. These patients were subjected to conventional oral examination followed by toluidine blue staining and chemiluminescent examination with Microlux DL and biopsy for histopathological confirmation.

Results. Of the 10 lesions examined 4 were defined as clinically benign. While 6 were defined as suspected lesions (pre-malignant or malignant). Furthermore, 2 out of the total 3 negative lesions to toluidine blue staining were histologically benign lesions while 6 out of the 7 staining toluidine blue positive were histologically defined as precancerous or cancerous lesions. The floor of the mouth and the lateral tongue (30%) were the most frequently involved site, followed by buccal mucosa (20%), the gingiva (10%) and alveolus (10%). Histological examinations revealed that 2/10 were benign lesions and 8/10 were precancerous or cancerous lesions, including leukoplakias.

Conclusion. Chemiluminescent light and staining with toluidine blue can be used as a general oral mucosal examination system and may in particular improve the visualization of potentially premalignant lesions. Although it is an easy, safe, minimal time consuming, and noninvasive protocol, it has only adjunctive utility and it does not replace biopsy for the diagnosis of leukoplakia.