

Oral Potentially Malignant Epithelial Lesions and Associated Risk in the Contralateral Mucosa

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Abstract:Statement of the problem: Early detection of potentially malignant epithelial lesions (PMELs) is aimed at improving survival rates as carcinogenesis is a multistep process and prevention is possible if these lesions are detected at an early and reversible stage of the disease. Objectives: This prospective clinical study was designed to determine the prevalence of bilateral mirror-image PMELs in patients presenting with unilateral PMELs clinically. A modified brush biopsy technique was employed to detect early cytological epithelial changes if any, in the contralateral normal oral mucosa. Materials and method: Sixty individuals presenting with unilateral PMELs were selected for this study. These comprised 30 (50%) Indians, 24 (40%) Chinese, 5 (8.3%) Malays and one (1.7%) Nepalese. All selected cases had histopathological confirmation of their primary existing lesion(s) as inclusion criteria in this study. Cases which had subsequently presented with a lesion contralateral to the existing lesion were also subjected to scalpel incisional biopsy on this second lesion. The remaining cases which presented with a unilateral PMEL at the time of this clinical study were subjected to a brush biopsy on the clinically normal looking mucosa contralateral to the existing lesion. Results: A total of 70 lesions were detected in 60 patients. The most common PMEL found was oral lichen planus. Of the 60 patients studied, 26 exhibited mirror-image lesions either metachronously (73%) or synchronously (27%). The remaining cases that had undergone brush biopsy on the contralateral side to the existing PMEL yielded normal histological results. Conclusions: Present findings demonstrated that patients presenting with PMELs in the upper aerodigestive tract are at greater risk of developing a second lesion most probably on the contralateral mirror-image site. However the efficacy of brush biopsy method in detecting epithelial changes remained inconclusive due to the small sample examined.

Keywords: Oral potentially malignant epithelial lesions, oral mucosa, clinical study, screening

Introduction

Early detection of potentially malignant epithelial lesions (PMELs) is aimed at improving survival rates as carcinogenesis is a multistep process and prevention is possible if these lesions are detected at an early and reversible stage of the disease.¹⁾

The concept of 'field cancerization' suggests that premalignant change may occur in any area of the oral mucosa when exposed to a carcinogen (namely, tobacco and alcohol ingestion). This in turn increases the risk of patients with oral cancer developing multiple primary tumours and secondary tumour recurrence following complete excision of the primary tumour.²⁾

A recent study has shown that abnormal histological changes could occur in clinically normal looking mucosa of patients with oral cancer and precancerous lesions.³⁾

This prospective clinical study was designed to determine the prevalence of bilateral mirror-image PMELs in patients presenting with unilateral PMELs clinically.

Materials and Methods

Sample

Sixty individuals presenting with unilateral PMELs were selected

for this study. These comprised 30 (50%) Indians, 24 (40%) Chinese, 5 (8.3%) Malays and one (1.7%) Nepalese. There were 33 (55%) females and 27 (45%) males, with an overall mean age of 50.2 years (Range: 30 –71 years).

Histopathological examination

All selected cases had histopathological confirmation of their primary existing lesion(s) as inclusion criteria in this study. Cases which had subsequently presented with a lesion contralateral to the existing lesion were also subjected to scalpel incisional biopsy on this second lesion.

Cytobrush examination

The remaining cases which presented with a unilateral PMEL at the time of this clinical study were subjected to a brush biopsy on the clinically normal looking mucosa contralateral to the existing lesion (Fig. 1).

The sites of all lesions and normal mucosa were charted (Fig. 2).

Results and Discussion

A total of 70 lesions were detected in 60 patients. The most common PMEL found was oral lichen planus. Of the 60 patients studied, 26 exhibited mirror-image lesions either metachronously (73%) or synchronously (27%). The remaining cases that had undergone brush biopsy on the contralateral side to the existing PMEL yielded normal histological results.

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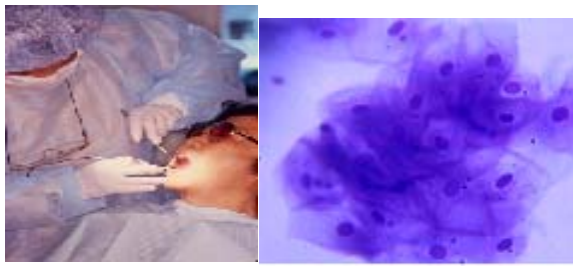


Fig. 1 Brush biopsy taking and cytosmear

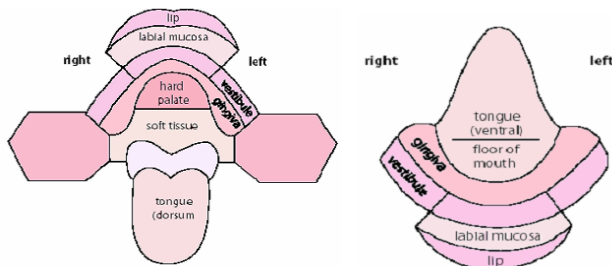
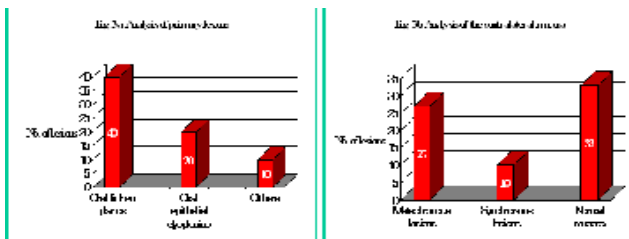


Fig. 2. Topographic chart of oral mucosa



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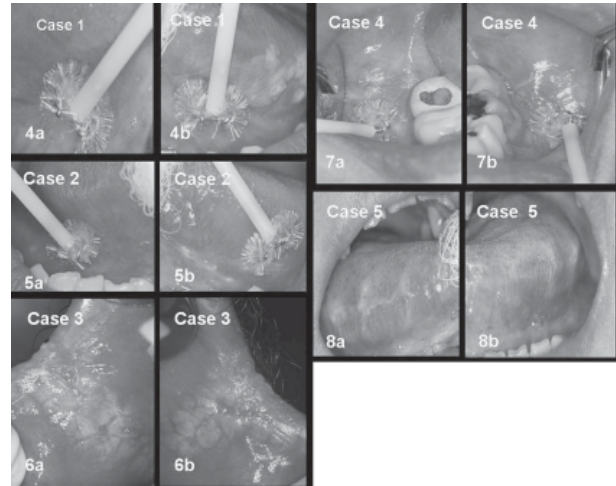


Fig. 4-8. Examples of case studied: Case 1: 47-year-old Chinese female, no habits, and presenting with leukoplakia (L) ventral tongue and normal contralateral mucosa (4a,b); Case 2: 28-year-old Nepalese male, no habits, and presenting with leukoplakia (L) ventral tongue and normal contralateral mucosa (5a,b); Case 3: 39-year-old Indian male, smokes beedi x 25 years, and presenting with chronic hyperplastic candidiasis commissural mucosa bilaterally (6a,b); Case 4: 52-year-old Chinese female, no habits, and presenting with lichen planus/lichenoid reaction (R) and (L) buccal mucosa (7a,b); Case 5: 52-year-old Chinese female, no habits, and presenting with leukoplakia (R) and (L) ventrolateral tongue (8a,b).

Present findings demonstrated that patients presenting with PMELs in the upper aerodigestive tract are at greater risk of developing a second lesion most probably on the contralateral mirror-image site.

However the efficacy of brush biopsy method in detecting epithelial changes remained inconclusive due to the small sample examined

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