

Angiogenic squamous dysplasia-like phenomenon in oral epithelial precursor lesions

Type:

Article

Abstract:

Statement of the problem: Dysplasia, the morphological yardstick of epithelial precursor lesions, is the collective term for a variety of architectural and cytological changes within the altered oral epithelium. Angiogenic squamous dysplasia (ASD), a distinct morphological characteristic in pre-invasive bronchial lesions, describes the presence of capillary tufts that are closely juxtaposed to and projecting into the dysplastic bronchial epithelium. Objective: To determine whether ASD-like phenomenon occurs in oral epithelial precursor lesions, and to speculate on its relevance. Methods: Twenty cases each of mild, moderate and severe oral dysplasia (inclusive of carcinoma-in-situ), and 10 normal oral mucosa (normal controls) were serial sectioned for H and E staining, and for microvessel density (MVD) scoring with CD31, CD34 and CD105. Microcapillary pattern images were digitally captured for 3-D reconstruction. Results: Oral ASD foci consisting of CD31- and CD34-positive capillary loops abutting onto the overlying dysplastic oral epithelium (and causing it to assume an irregular or papillary surface configuration) were identified in moderate (3/20; 15%) and severe dysplasia (13/20; 65%), but not in normal oral mucosa and mild dysplasia. MVD score demonstrated increasing vascularity as epithelium progressed from normal to severe dysplasia ($p < 0.05$). CD105 demonstrated increase neo-vascularization in all dysplasia grades ($p < 0.05$). Conclusions: These preliminary Findings taken together suggest that: 1. ASD-like phenomenon may be an important intermediary biomarker in oral precursor lesions; and 2. architectural alterations of the entire disturbed mucosa may be a more useful pre-malignancy index.

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