EDITORIAL

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Understanding of oral potentially malignant disorders and epithelial dysplasia among oral and maxillofacial surgeons

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Oral mucosal diseases have various etiologic factors; however, the characteristics of each disease are similar. Moreover, even the same disease can present as various clinical symptoms as it progresses, making treatment difficult. Oral mucosal diseases can be diagnosed and treated not only in dentistry but also in otolaryngology, internal medicine, and pediatrics, which can confuse patients. Oral and maxillofacial surgeons tend to be interested in diseases that require surgical treatment and less interested in oral mucosal diseases as these are often managed at the oral medicine department through biopsies or medications.

However, as society ages, the number of patients visiting hospitals for oral mucosal diseases has been increasing recently. Furthermore, the interest in precancerous lesions increasing along with as interest in oral cancer. The term "potentially malignant diseases of the oral cavity" has been recently used to integrate precancerous lesions and precancerous conditions with a risk of malignant transformation.

As stated by the World Health Organization, oral potentially malignant disorders (OPMDs) represent "a heterogeneous group of clinically defined conditions associated with a variable risk of progression to oral squamous cell carcinoma"[1,2]. OPMDs include leukoplakia, proliferative verrucous leukoplakia, erythroplakia, erythroleukoplakia, oral submucous fibrosis, actinic cheilitis, palatal lesions associated with reverse smoking, smokeless tobacco keratosis, oral lichenoid pathoses, and heritable conditions with cancer predisposition, such as Fanconi anemia, congenital dyskeratosis, and xeroderma pigmentosum[3]. A meta-analysis of the literature revealed that the overall malignant transformation rate of OPMDs is approximately 8%[4].

Leukoplakia, erythroplakia, and erythroleukoplakia are clinical terms. These disorders of the oral mucosa are closely associated with the degree of epithelial dysplasia. Dysplasia is observed in some cases of leukoplakia but is consistently observed in cases with erythroplakia and erythroleukoplakia.

The cytological changes in dysplastic epithelial cells include abnormal variations in nuclear size, nuclear shape, cell size, and cell shape; increased nuclear-to-cytoplasmic ratio, nuclear size, and nucleoli number and size; and hyperchromasia. Architectural alterations include irregular epithelial stratification, loss of polarity of basal cells, drop-shaped rete ridges, increased number of mitotic figures, abnormal superficial mitotic figures, premature keratinization in single cells, keratin pearls within rete ridges, and loss of epithelial cell cohesion[1-3].

Despite recent advances in biomarker research and molecular profiling for predicting the risk for malignant transformation, investigation on biomarker is still lacking, and further prospective clinical studies are warranted. The standard method for predicting the risk for malignant transformation is histopathologic grading of oral epithelial dysplasia and consideration of clinical factors.

Traditionally, oral epithelial dysplasia can be classified into three grades of severity: mild epithelial dysplasia with alterations limited mainly to the basal and parabasal layers, moderate epithelial dysplasia with dysplastic changes extending to the midportion of the epithelium, and severe epithelial dysplasia with alterations mostly in epithelial thickness[3]. Carcinoma *in situ* in the oral cavity is considered synonymous with severe dysplasia[1]. However, this traditional definition

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does not fully reflect the complexity of oral epithelial dysplasia grading. Alternatively, some authorities advocate the use of a binary grading system, i.e., low-grade versus high-grade dysplasia. This binary system categorizes oral epithelial dysplasia as having a low or high risk for malignant transformation[5]. The cutoff points between low- and high-grade dysplasia are four architectural and five cytological changes, irrespective of the level of dysplasia within the epithelium[5]. Such a two-tier system may have improved reproducibility than the three-tier system. However, outcome studies are still warranted to validate the efficacy of binary scoring before it can be routinely applied clinically[1].

Mehanna et al.[6] reported that the mean malignant transformation rate for mild/moderate dysplasia was 10% compared with 24% for severe dysplasia/carcinoma *in situ*. Furthermore, the risk of progression to oral cancer significantly increases for all grades of dysplasia[6]. A population-based cohort study reported an overall hazard ratio of 4.9 for mild dysplasia, 6.8 for moderate dysplasia, and 15.8 for severe dysplasia[7]. A recent meta-analysis also revealed a six-fold increase in the odds of malignant transformation in high-risk lesions compared with low-risk lesions in the binary grading of oral epithelial dysplasia[8].

Oral mucosa with no mild dysplasia and adverse clinical outcomes is often conservatively managed with risk factor modification and periodic clinical reevaluation rather than surgical excision. Some oral mucosa with no or minimal dysplasia may disappear or diminish in size within a few months after the modification. However, if the lesion increases in size over time, additional biopsies may be performed. Moreover, for lesions with mild dysplasia and adverse clinical outcomes, surgical excision and/or short-interval clinical follow-up may be considered[6,9]. Moderate or severe epithelial dysplasia in the oral mucosa is treated with complete excision and close clinical follow-up. Complete removal can be achieved with equal efficacy by surgical excision, electrocautery, cryosurgery, or laser ablation[6,9].

Even after removal or obvious resolution of oral leukoplakia, the reported overall recurrence rates range from 7% to 38%, and the development of additional lesions is common[10]. Therefore, long-term postoperative follow-up is crucial.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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