

Recent Developments in Oral Epithelial Dysplasia Grading: A Critical Appraisal

The final goal of a histopathological examination is to assess the course of the presenting lesion. Histopathology is considered the gold standard in segregating benign and malignant entities, but its use in grading oral epithelial dysplasia (OED) has been a constant debate. Interobserver agreement in most studies on OED has averaged between poor to fair. Application of molecular predictive model could solve the disagreement at the histopathological level. But, in order to conduct genetic analysis, it is vital to categorize the entities based on the current diagnostic gold standard, which in turn is histopathological grading. Thus, improvising the standard of histopathological grading would aid in formulating a much reliable molecular predictive model.¹ The current scheme of dysplasia grading involves assessment of both the architectural and cytological parameters as set by the World Health Organization (WHO) in 2005. Although the individual dysplastic features mentioned by the WHO are highly objective, a decision on dysplasia grading involves combining several of these dysplastic features and assessment of the level or thickness of the involved epithelium. Thus though the individual cytological/architectural features in itself is relatively objective, the final dysplasia grade is based on a relatively subjective assessment of the presence/absence of the combination of these individual dysplastic features.^{1,2}

Although multiple modifications have been proposed for OED grading, none could account for the significant interobserver bias. One such modification was proposed by Kujan et al. They suggested a binary system to indicate the prognostic status of the dysplastic lesion. They proposed that lesions with minimum four architectural changes and five cytological changes are at a higher risk for malignant transformation in comparison to low risk lesions with less than four architectural and five cytological changes.³ The major disadvantage of the binary system was the interobserver bias in stratifying intermediate lesions (moderate dysplasia) in to high/low risk category.

The logical decision to improve the reproducibility or objectivity of OED grading would be to increase the number of observers. Even so, the resulting bias between the observers has to be tackled for arriving at a final diagnosis. The answer for the same was illustrated by Speight et al in a recent study wherein they employed a three stage histopathological review system for OED grading. Serial sections of the lesional tissue were examined by two pathologists in a blinded fashion. The resulting interpretation if matched was considered the final diagnosis. Diagnostic discrepancies were resolved by third opinion from an independent pathologist. Further discrepancies were resolved in a consensus meeting.⁴ Employing the three tier histopathological review system will provide a step wise algorithm which would significantly reduce the interobserver bias and increase the probability of rendering an accurate final diagnosis.

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