

LETTER TO EDITOR

TRAINING UNDERGRADUATES TO DIAGNOSE ORAL CANCER

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Oral cancer is a silent threat, lurking in the shadows of dental practices. With rising incidence rates, understanding this disease has never been more crucial [1]. As, future dentists, undergraduates hold the power to make a significant impact through early detection. However, diagnosing oral cancer is not always straightforward. Many challenges lie ahead for these young dental professionals as they navigate their education and training [2].

Oral biopsies are a crucial diagnostic tool in the field of dentistry, allowing clinicians to obtain tissue samples for histological examination and the identification of various oral pathologies. However, performing these procedures effectively requires specialized training and expertise. To address this need, a well-structured and comprehensive training program for undergraduate students is essential [2,3].

Chairside learning, where students receive hands-on training under the supervision of experienced clinicians, has been recognized as a vital component of modern dental education [4]. This approach allows students to develop the necessary psychomotor, communication, and cognitive skills required for performing oral biopsies. [3,4] In addition, the use of structured clinical operative tests has been shown to be an effective method for assessing the practical abilities of dental students in tasks such as simple exodontia [4].

Early detection of precancerous lesions and conditions is crucial in reducing the burden of cancer and improving patient outcomes. This is particularly relevant for oral cancer, where five-year survival rates have not improved significantly over the past decades, primarily due to delays in detection [2,5]. Addressing this challenge requires a multifaceted approach, including the development of innovative technologies and the strengthening of undergraduate education in this critical area [3].

We as mentor should train our students to not to overlook oral mucosa and other parts of oral cavity while performing dental procedures. Another promising avenue for improving early detection is the application of deep learning-based approaches.

Deep learning, a subfield of artificial intelligence (AI), leverages artificial neural networks with multiple layers to analyze complex data patterns. This technology is showing immense promise in revolutionizing early detection of oral cancer, offering a more accurate, efficient, and potentially less invasive approach, such as the use of vision transformers to assist clinicians in the identification of oral squamous cell carcinoma in clinical photographs [5].

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