



# How can we reduce diagnostic errors related to oral lesions in healthcare centers?

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## To Editor,

Diagnostic errors pose a significant challenge to healthcare facilities. They are characterized by the failure to accurately and promptly determine a patient's health issues or effectively communicate this information to the patient. This failure encompasses shortcomings in establishing potential differential diagnoses, facilitating specialist referrals, and ensuring timely treatment.<sup>1</sup> A study conducted by Kondori et al. examined the diagnostic accuracy of dentists in identifying oral lesions. Their findings revealed that approximately 43% of diagnoses provided by dentists were incorrect. Among the dental professionals assessed, general dentists exhibited the highest misdiagnosis rate of 45.9%, followed by oral and maxillofacial surgeons at 42.8%, endodontists at 42.2%, and periodontists at 41.2%. The most commonly misdiagnosed conditions included hyperkeratotic lesions, focal inflammatory hyperplasia, periapical cysts/granulomas, and cancerous lesions.<sup>2</sup> These findings underscore the importance of enhancing diagnostic accuracy and communication within the dental healthcare setting to improve patient outcomes and prevent potential harm.

The issue of diagnostic accuracy extends beyond the dental field. A study by Sardella et al examined the referral practices of general medical and dental practitioners to specialist care for oral mucosal lesions. Their findings revealed that more than half of the professionals the patients were referred to could not provide a clinical diagnosis for the observed conditions. The most commonly misdiagnosed conditions by family physicians and general dental practitioners included atrophic candidiasis (97.2% incorrect), mucous membrane pemphigoid (90% incorrect), atrophic and erosive forms of lichen planus (89.2% incorrect), and squamous cell carcinoma (80% incorrect). Additionally, the study found

that only 40% of the differential diagnoses provided by referring professionals matched the specialist unit's final diagnosis.<sup>3</sup> A separate study by Coppola et al. further corroborated these findings, indicating that only 28.5% of patients seen by general dentists and physicians had a correct provisional diagnosis.<sup>4</sup>

Furthermore, a Japanese study highlighted that family dentists' misdiagnoses of malignant oral lesions was a significant risk factor for delayed referrals to specialized care facilities.<sup>5</sup> One of the primary contributors to these diagnostic errors is the lack of sufficient knowledge among dentists and physicians regarding non-dental issues, particularly lesions affecting the oral mucosa. These findings underscore the need for enhanced education, training, and interdisciplinary collaboration to improve diagnostic accuracy and ensure timely and appropriate patient management within the healthcare system. The lack of awareness regarding oral health and related specialties, such as oral medicine, among healthcare providers contributes to diagnostic errors.<sup>6</sup> A study from Iran found that the awareness levels of patients, physicians, and dentists about oral medicine were insufficient.<sup>7</sup>

Similarly, a study from Saudi Arabia by Almazrooa and Binmadi revealed that only 60% of medical practitioners were aware of the oral medicine specialty, and more than half had never referred patients to an oral medicine specialist.<sup>8</sup> Furthermore, Alrashdan et al evaluated the awareness of oral medicine among medical practitioners. They found that factors such as age group, higher degrees in medicine, country of graduation, and specialty type were significantly associated with oral medicine awareness.<sup>9</sup> These findings suggest that improving the awareness and understanding of oral health and related specialties, particularly oral medicine, among healthcare providers could enhance diagnostic accuracy and



facilitate appropriate patient referrals. Addressing this knowledge gap through targeted educational initiatives, interdisciplinary collaboration, and integrating oral health concepts into mainstream medical curricula could help mitigate the issue of diagnostic errors in healthcare settings.

Oral medicine is a specialized branch of dentistry dedicated to diagnosing and conservatively managing various conditions affecting the oral mucosa, salivary gland diseases, and orofacial pain and providing dental care for patients with underlying medical conditions as defined by the American Academy of Oral Medicine.<sup>6</sup> In 2016, the World Dental Parliament expanded the definition of oral medicine to encompass three essential domains: disease and condition status, psychosocial status, and physiological function.<sup>10</sup> This updated definition represents a significant shift from the traditional focus solely on disease presence or absence. It now emphasizes a more comprehensive approach that considers the patient's physical health, psychosocial well-being, and physiological function. By incorporating these additional dimensions, the new definition promotes a patient-centered approach that values the patient's holistic well-being, preferences, and values. This evolution in the definition of oral medicine reflects a broader understanding of healthcare beyond treating symptoms and addressing the patient as a whole individual.

The following recommendations are proposed based on the understanding of the oral medicine specialty to mitigate diagnostic errors and improve the management of oral lesions:

- Strengthening the educational foundation of dental students by incorporating comprehensive training in oral medicine.
- Broadening the scope of oral health-related topics in medical school curricula to ensure a deeper understanding of the interplay between oral health and overall well-being.
- Promoting awareness and knowledge of oral medicine through various channels, including conferences, seminars, academic journals, and social media platforms.

Furthermore, fostering interdisciplinary collaboration and communication between physicians and oral medicine specialists is crucial to effective patient care. By adopting a multifaceted approach that addresses these recommendations, healthcare providers can reduce

diagnostic errors and provide more comprehensive, patient-centered care for individuals with oral and orofacial health concerns in the future.

#### Competing Interests

None declared.

#### Ethical Approval

Not applicable.

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