

Oral and maxillofacial radiology: The challenge of change

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Oral and maxillofacial radiologists may teach, practice, and/or conduct research with regard to any aspect of radiology. They are also responsible for establishing guidelines for radiographic selection criteria, radiation safety, and quality assurance. Some oral and maxillofacial radiologists have joint appointments in medical radiology. This provides a collaborative working environment with medical radiologists, who generally are not conversant with the diagnostic imaging of the jaws.

Many oral surgeons argue that they do not need to obtain radiology reports, as they could biopsy the lesion and send samples for histologic examination. This assumption is not necessarily true for many reasons, not the least of which is that the role of the radiologist in a multidisciplinary team goes beyond diagnosis. A radiologist should also identify the precise extent of a lesion and its relationship to adjacent vital structures, report cortical perforation and soft tissue involvement, recommend additional imaging modalities, and report incidental findings. Nevertheless, many oral pathologists insist that diagnosis can be made through biopsy alone. This idea has been overstated to the point of losing its originality. To overcome this turf war, our multidisciplinary teams should take note of the many diagnoses that depend mostly on radiological rather than clinical or histological evidence. For instance, ossifying fibroma and fibrous dysplasia of the jaw often show similar histological features, making distinguishing between the two entities on the basis of histology difficult, if not impossible.¹ Here is where the radiologist provides useful diagnostic data, enabling the appropriate distinction of the former, which is a metabolic disease usually requiring no treatment, from the latter, which is a true neoplasm that requires resection.¹ Additionally, secondary infection

of developmental lesions can mask their characteristic microscopic features, which makes the diagnosis even more difficult, as oral pathologists tend to diagnose these cases as infected cystic wall. Therefore, expert imaging interpretation should help guide pathologists in appropriately analyzing histopathological findings.² Another noteworthy example is the small dentigerous cyst. Histologic features are insufficient to distinguish between a small dentigerous cyst and a large dental follicle. It may seem that identifying a cystic cavity at the time of surgery may be the only reliable way to arrive at a definitive diagnosis; however, a radiographic sign of expansion will confirm the diagnosis of dentigerous cyst.³ What is more, the histological features of some lesions of the jaws may overlap and pose a diagnostic challenge to the pathologist. For example, craniopharyngioma usually masquerades as ameloblastoma. Clinical information is crucial to render the proper diagnosis since craniopharyngioma is located in the body of the sphenoid bone, a site that precludes the diagnosis of ameloblastoma. A retrospective analysis of 566 second-opinion histopathology referrals showed 58 (10%) of the referred cases resulted in a significant change in diagnosis, impacting patient management.⁴ Therefore, the radiologist can help determine the need for a second opinion in patients with a biopsy-based diagnosis, especially when the radiographic interpretation does not support or even suggest the given diagnosis. The clinical, radiographic, and histological findings should thus all be indispensable elements taken together in differential diagnosis.

Unfortunately, for many decades, oral and maxillofacial radiologists were only dignified technologists who knew how to place a film in the mouth and troubleshoot dark room errors. However, it is we radiologists who should take the blame for underestimating the importance of oral and maxillofacial radiology in a multidisciplinary team practice. More oral radiologists should participate in and contribute to multidisciplinary team meetings along with pathologists and other clinical specialists to improve di-

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agnosis, disease staging, and patient management decisions. Attending clinicopathological conferences, contributing interpretive reports, suggesting imaging protocols, monitoring quality control, and discussing advances in imaging are all ways oral radiologists can contribute their expertise.⁵

Multidisciplinary team meetings remain part of clinical governance and must be encouraged.⁶ Although radiologists provide expertise through radiographic interpretation skills, the professional environment of the meeting can influence how these skills contribute to team discussions. This consequently affects the perception of the value radiological expertise contributes to the meeting. Regular attendance at such meetings offers radiologists the opportunity to develop an awareness of correlation patterns among clinical, radiological, and pathological presentations, which could improve team members' skills in interpreting all these types of diagnostic data.

References

1. Toyosawa S, Yuki M, Kishino M, Ogawa Y, Ueda T, Murakami S, et al. Ossifying fibroma vs fibrous dysplasia of the jaw: molecular and immunological characterization. *Mod Pathol* 2007; 20: 389-96.
2. Benn A, Altini M. Dentigerous cysts of inflammatory origin. A clinicopathologic study. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1996; 81: 203-9.
3. Daley TD, Wysocki GP. The small dentigerous cyst. A diagnostic dilemma. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 1995; 79: 77-81.
4. Mullin MH, Brierley DJ, Speight PM. Second opinion reporting in head and neck pathology: the pattern of referrals and impact on final diagnosis. *Oral Surg Oral Med Oral Pathol Oral Radiol* 2015; 119: 656-60.
5. Kane B, Luz S, O'Briain DS, McDermott R. Multidisciplinary team meetings and their impact on workflow in radiology and pathology departments. *BMC Med* 2007; 5: 15.
6. Alcantara SB, Reed W, Willis K, Lee W, Brennan P, Lewis S. Radiologist participation in multi-disciplinary teams in breast cancer improves reflective practice, decision making and isolation. *Eur J Cancer Care (Engl)* 2014; 23: 616-23.