Diagnostic criteria for unicystic ameloblastoma: ameloblastic versus ameloblastomatous epithelium

To the Editor:
Black et al. recently ably reviewed the diagnosis and treatment of ameloblastoma.1 In their Fig. 5, they illustrate histologic features of a putative “unicystic ameloblastoma.” Histologically, its obliquely sectioned columnar lining epithelium lacks ameloblastomatous features. That is, it lacks evidence of “reverse polarization”: Palisaded columnar cells with tall dark nuclei polarized away from the basement membrane by subnuclear clear cytoplasmic vacuoles are not observed.2,3 The lining epithelium additionally demonstrates small islands and cords of odontogenic epithelium budding into the connective tissue in a pattern not characteristically seen in ameloblastoma but typically observed in dental follicular tissue. In short, the ameloblastic epithelium illustrated in the authors’ Fig. 51 shows no evidence of ameloblastoma. The epithelial lining is ameloblastic but not ameloblastomatous, and dental follicular tissue appears to have been misinterpreted as unicystic ameloblastoma.4-6 The interpretation of histologic specimens is somewhat subjective, but I suspect that a panel of oral pathologists (for example, those of an editorial board) would invariably interpret tissue depicted in Fig. 51 as nonneoplastic odontogenic tissue.

If a pathologist were to encounter a gnathic cystic specimen evoking consideration of unicystic ameloblastoma, he or she might well consult the current literature to “match pictures,” to compare histologic features of test tissue to those of a published photomicrographic standard. If the pathologist were to use Fig. 5 as a model, the error could be perpetuated: Normal ameloblastic tissue could be misinterpreted as unicystic ameloblastoma. The recurrence rate of unicystic ameloblastoma is lower than that of conventional solid-multicystic ameloblastoma; hopefully, diagnostic error contributes little to this disparity.

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References


Response to Letter to the Editor: Diagnostic criteria for unicystic ameloblastoma: ameloblastic versus ameloblastomatous epithelium

In reply:
The photomicrograph of the lining of the unicystic ameloblastoma (our Fig. 5),1 that you doubt, is indeed

Fig. 1. Photograph taken from the same area of the cystic ameloblastoma specimen as in the original paper. The epithelium is artifactually detached toward the left edge of the picture. This series of photos were taken in continuity in order to show how this bland epithelium can be misleading as to its ameloblastic origin, and how it is continuity with more diagnostic areas in this case (H&E stain; magnification x10).
Fig. 2. This photograph is in continuity with Fig. 1 in the area of epithelial detachment. The epithelium shows two areas of thickening with more apparent ameloblastomatous features, although still not pathognomonic (H&E; magnification x10).

Fig. 3. This is a magnification of the thickened epithelium at the bottom of the photograph in Fig. 2 (H&E; magnification x40).

Fig. 4. This is a magnification of the granulation tissue lining the cyst wall in the site of the prior biopsy (H&E; magnification x10).

Fig. 5. Another magnification of the granulation tissue lining the cyst wall in the site of the prior biopsy (H&E; magnification x20).

Fig. 6. This is residual ameloblastic epithelium, with artificial disruption, adjacent to the granulation tissue (H&E; magnification x20).

Fig. 7. This is residual ameloblastic epithelium, with artificial disruption and detachment, adjacent to the granulation tissue (H&E; magnification x20).
the lining of a unicystic ameloblastoma with a focal mural and intraluminal component. The case was reviewed by multiple experts, in addition to the editorial board. Figs. 4, 5, and 6 are from the same case. The patient was 12 years old at the time of surgery. Her initial biopsy was a curettage that was studied at a Midwestern Oral and Maxillofacial Pathology Department. The diagnosis of conventional ameloblastoma was rendered on February 19, 2007, by a DDS, a diplomat of the American Board of Oral and Maxillofacial Pathology. We reviewed the slide and concurred. We believed the curettages sampled in the intracystic component and mural components led to the belief that this was conventional type. The resected specimen showed only minor residual intracystic tumor (thermally damaged) and a focus of intramural invasion, associated with biopsy site changes. In our article we state, “In cystic lesions with a flat bland epithelial lining with only focal areas of diagnostic ‘ameloblastic’ epithelium, the pathologist might be unsure of the best diagnosis.”1 We quote recommendations for dealing with this radiographic-histologic discrepancy dilemma. Fig. 5 represents such a troublesome area. I have gone back to the case and taken more pictures (Figs. 1-8 accompanying this letter) in continuity with Fig. 5 to show how this lining is in fact part of the lesion and also in continuity with the focal remaining albeit thermally damaged solid component.

After rendering the diagnosis of unicystic ameloblastoma with mural component, I sent the case to the Armed Forces Institute of Pathology for confirmation. The case was reviewed by an expert with a consultation report dated April 23, 2007. The expert concurred with our diagnosis.

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REFERENCE
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