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Peripheral Ameloblastoma: A study of 18 cases and utilization of Ber-EP4 immunohistochemistry to rule out a diagnosis of Intraoral Basal Cell Carcinoma

Peripheral ameloblastoma can be differentiated from intraoral basal cell carcinoma by using Ber-EP4, calretinin and EMA immunohistochemical stains.

Peripheral ameloblastoma (PA) is a rare odontogenic tumor, arising in the mucosa of tooth-bearing areas of the jaws, that typically shows no radiographic evidence of bone involvement. It bears close histologic resemblance to intraoral basal cell carcinoma (IOBCC), an extremely rare entity. In our experience from previous published data, three cases of IOBCC were initially misdiagnosed as PA and were later differentiated from PA on the basis of Ber-EP4 protein expression. The aim of this study was to rule out a diagnosis of IOBCC, by utilization of Ber-EP4 immunohistochemistry, in all previously diagnosed cases of PA from the University of Florida Oral Pathology (UFOP) Biopsy Service Archives.

With Institutional Review Board (IRB) approval, eighteen cases of PA were retrieved from the UFOP Biopsy Service Archives. We describe the clinicopathologic features of these cases and discuss Ber-EP4 immunohistochemical staining which was performed to rule out a potential diagnosis of IOBCC in these cases. In addition, we conducted calretinin and epithelial membrane antigen (EMA) staining for one case of PA.

Results: The majority of PAs presented in the lingual gingiva of posterior mandible. Men were affected twice as often as women, and the average age at the time of diagnosis was 59 years. Thirteen lesions showed no reactivity to Ber-EP4, four displayed patchy membranous immunoreactivity, and one demonstrated non-specific reactivity.

Conclusion: We suggest that all cases of PA that present with histologic overlap with basal cell carcinoma, particularly those from incisional biopsies, appear significantly infiltrative, or appear ulcerated, and/or demonstrate recurrence, should be evaluated with Ber-EP4 to rule out a diagnosis of IOBCC.