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Adenomatoid odontogenic tumor: a retrospective clinicopathological analysis of 24 cases from Pakistan

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Introduction and objectives: Adenomatoid odontogenic tumour (AOT) is a rare benign epithelial odontogenic tumour. A few studies have described the histological features of this uncommon tumour. The objective was to describe the histopathological features of AOT in a cohort of patients from Pakistan.

Methodology: We reviewed the haematoxylin and eosin-stained slides of cases of AOT diagnosed in our centre between 2009 to 2021.

Results: Twenty-four cases of AOT were studied, twelve were female (mean age was 19.5 years), and 12 were male (mean age -13.8 years). Tumour sites included maxilla (50%, n=12), mandible (20.8%, n=5), gingiva (8%, n=2), right buccal vestibule (4%, n=1), canine tooth (4%, n=1) and periapical region (4%, n=1). Histologically, most cases exhibited a predominantly solid growth pattern (95.8%, n=23) with a similar proportion of solid and duct-like areas. Lattice work pattern was also seen in most cases (87.5%, n=21). Eosinophilic amorphous material was found in all cases. Most tumours showed duct-like spaces (95%, n=23). Tiny foci of calcifying epithelial odontogenic tumour (CEOT)-like areas were seen in 37.5% (n=9) cases. Variable amounts of calcifications (dystrophic and psammomatous) (87.5%, n=22), osteodentin (20.8%, n=5) and fibrocollagenous stroma (33%, n=8) were seen. 12.5% (n=3) cases were associated with an impacted tooth. One case showed hybrid ossifying fibroma-like changes. 58.3% (n=14) showed macrocystic areas lined by stratified squamous epithelium. Follow-up was available in 12 patients, and no unequivocal recurrences were reported.

Discussion and conclusion: Our results validate the findings of other studies on the histopathological features of AOT. Our results suggest that AOTs usually show a predominantly solid pattern with duct-like spaces. The results of anatomic distribution are similar to published literature. Only a few cases with CEOT-like areas in AOTs have been reported in the past. Hybrid AOT with ossifying fibroma is very rare and was seen in one of our cases.

Keywords: adenomatoid odontogenic tumour, odontogenic tumour, histopathology

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