Juvenile intraoral pleomorphic adenoma: report of five cases and review of the literature


Abstract. The aim of this study is to report on five cases of intraoral pleomorphic adenoma (PA) in patients under 18 years of age and to review the literature. Intraoral salivary gland tumours were reviewed in two Brazilian institutions and five cases of PA in patients under 18 years of age were found. Clinical data were obtained from the medical records and paraffin-embedded tissues were sectioned for proliferating cell nuclear antigen (PCNA) and p53 immunohistochemical analysis. Four patients were female and one was male; two cases affected the palate, two the upper lip and one the tongue. All five patients were treated surgically and after long follow-up periods no recurrences were observed. Tumour cells were weakly positive for PCNA and negative for p53. PA should be considered in the differential diagnosis of submucosal nodules in young patients. In youngsters, PA seems to have similar biological characteristics as in adults, with low recurrence rates after surgical resection.

Introduction

Pleomorphic adenoma (PA) is the most common salivary gland tumour, accounting for about 40–70% of all major and minor salivary gland tumours.14,16 On clinical examination, PA is usually a painless mass with slow rate of growth. Histologically, it is characterized by a great variety of tissues presenting epithelial cells arranged in cord-like and duct-like cell patterns, along with areas of epidermoid metaplasia. The intercellular matrix shows fibrous, hyaline, myxoid, cartilaginous and osseous areas. Myoepithelial cells are responsible for such pleomorphic extracellular matrix production.59

About 5–10% of minor salivary gland PA affects patients aged 20 years and under, the majority occurring in the second decade of life.1–8,15 This present report describes five cases of intraoral PA affecting young patients as well as the immunostaining for PCNA and p53.

Material and methods

The files from the Department of Oral Pathology, School of Dentistry of Piracicaba/UNICAMP and the Department of Head and Neck Surgery and Ototorhinolaryngology at the AC Camargo Hospital were reviewed and patients aged 18 years old or younger were selected for this study. Clinical data such as age, gender, complaint, site, size, treatment and follow-up were recorded.

Histopathological slides were reviewed and paraffin-embedded tissues were sectioned for immunohistochemical analysis with PCNA (PC-10, Dakopatts, Denmark, dilution 1:4000) and p53 (DO-7 Clone, Dako A/S, Denmark, dilution 1:200) primary antibodies by immunoperoxidase technique.

Results

Five cases of intraoral PA in patients 18 years old or younger were found. Four cases were found to have occurred in females and one in a male. Two patients were 18 years old, one was 17, one was 15 and the youngest was 11 years old. The complaint time ranged from 2–96 months (average 36.4 months). Two
cases affected the upper lip and the soft palate; hard palate and tongue were involved in one case each (Table 1).

All five lesions were asymptomatic, slow-growing, firm, submucosal nodules with diameters ranging from 1.0–3.0 cm (Fig. 1). The two cases involving the palate did not show radiographic evidence of bone involvement. The clinical diagnosis was for a salivary gland tumour, possibly pleomorphic adenoma, in four cases, while case four was interpreted as a benign mesenchymal neoplasm, possibly neuroma or neurofibroma. All cases were treated surgically.

Histopathological analysis of the surgical specimens revealed cellular areas with epithelial cells arranged in cord and duct-like structures filled with eosinophilic material in all cases. Areas containing rounded cells with clear cytoplasm were found in one case. Hyaline and fibrous matrices were found in all cases, and mucoid and condroid matrices were also present in three (Fig. 2). Four cases showed well-defined capsules, while the tongue lesion was not encapsulated. Immunostaining was weakly positive for PCNA and negative for p53 in all cases. The follow-ups ranged from 5–39 years (average 22.2 years) and no recurrences were observed.

Discussion

Pleomorphic adenomas are more prevalent in the 4th to 6th decades of life, however cases in the first two decades have been reported. Krolls et al. reviewed 430 cases of salivary gland lesions in children and found 55 cases of pleomorphic adenomas, 11 of them affecting minor salivary glands. Nevertheless, site, age or gender were not described. Byars et al. reported two cases, without specifying age or gender of involved patients. Yamamoto et al. reviewed the Japanese literature and found 10 cases of PA of the minor salivary gland in patients under 18 years of age, eight in the palate and two in the lower lip. We found in the English literature 16 well-documented cases of PA involving the minor salivary glands in juvenile patients (Table 2).

In youngsters as in adults, intraoral PA affects mainly the palate, in 19 out of 26 cases (73%) reviewed in the literature. Three cases of PA have been described in the buccal mucosa, two in the tongue, and two in the lower lip. Two of our cases seem to be the first PAs described in the upper lip in juvenile patients. Most of the reported cases were in females (88.5%) with a 7.5:1.0 female: male ratio, higher when compared to adults (1.5:1). Despite this evident prevalence in youngsters, only 26 cases were reported, therefore a larger sample is necessary in order to obtain more reliable conclusions. Cases have been reported in patients as young as 3 months up to 18 years, with a mean of 11.8 years and, according to Table 2, 50% were in patients younger than 10 years of age.

<table>
<thead>
<tr>
<th>Case</th>
<th>Age</th>
<th>Gender</th>
<th>Complaint time (months)</th>
<th>Site</th>
<th>Size (cm)</th>
<th>Treatment</th>
<th>Follow-up (years)</th>
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<tbody>
<tr>
<td>1</td>
<td>11</td>
<td>M</td>
<td>24</td>
<td>Soft palate</td>
<td>3.0</td>
<td>Surgical excision</td>
<td>9</td>
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<td>2</td>
<td>15</td>
<td>F</td>
<td>2</td>
<td>Upper lip</td>
<td>1.0</td>
<td>Surgical excision</td>
<td>5</td>
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<tr>
<td>3</td>
<td>17</td>
<td>F</td>
<td>48</td>
<td>Hard palate</td>
<td>3.0</td>
<td>Surgical excision</td>
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<td>4</td>
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<td>Tongue</td>
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<td>Surgical excision</td>
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The most common symptom of PA reported was a submucosal lump, although few cases showed ulceration, pain and bleeding. The size of the lesions ranged from 0.8–5.0 cm (average 2.6 cm). As the lesions usually were asymptomatic, there was a large interval between the first symptoms and diagnosis, ranging from 2 days to 15 years (average 25 months).

Incisional biopsy and fine-needle aspiration biopsy were performed in some cases, however, surgical excision was commonly the first procedure. Computerized tomography and magnetic resonance imaging are useful in determining the size of lesions and to verify bone involvement. Differential diagnosis of the palatal lesions includes other minor salivary gland tumours, particularly mucoepidermoid carcinoma, as well as other benign and malignant mesenchymal lesions such as neurofibroma and rhabdomyosarcoma. For lesions affecting the buccal mucosa, lip and tongue, lipoma, neurofibroma and other benign mesenchymal tumours should be considered as the possible diagnosis. Surgical excision is the treatment of choice and it was performed in all reported cases. However, in cases where histopathological examination revealed positive surgical margins, additional surgery was indicated.

PCNA, an auxiliary protein of DNA polymerase, has been used as a cell proliferation marker in paraffin-embedded specimens. The slow-growing pattern seen in our cases is probably related to discrete tumour cell proliferation showed by the faint PCNA immunoreexpression. Our cases showed no p53 protein expression, which could also be related to the lower cell proliferation rates suggested by PCNA expression. The absence of recurrence after long follow-up periods suggests that these tumours with negative or weak staining for PCNA and p53 should have a good prognosis. This seems to be the rule for PA in general.

The follow-up of patients with salivary gland tumours should be long due to the possibility of late recurrences. Our cases were followed up for at least 5 years. Although uncommon, pleomorphic adenoma should be considered in the differential diagnosis of young patients with swellings in the oral cavity, particularly in the palate, lips, tongue and buccal mucosa. The biological behaviour in young patients seems to be similar to that in adults, with a very low recurrence rate after complete surgical resection.

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References


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