Case report

Adenomatoid hyperplasia of the palate mimicking clinically as a salivary gland tumor

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Abstract: This report describes an illustrative case of adenomatoid hyperplasia (AH) of the minor salivary glands on the palate of a 31-year-old man. The clinical features of the present lesion corresponded with those of pleomorphic adenoma, but histologically large lobules of normal-appearing mucous acini were found. The cell proliferative activity demonstrated in histological sections, by an immunohistochemical staining of proliferating cell nuclear antigen and Ki-67, showed no statistically significant differences among AH and a matched control group of normal palatal salivary glands. This case suggests that AH apparently exhibits an idiopathic, focal hypertrophic lesion of intraoral mucous glands with limited growth potential. (J. Oral Sci. 43, 135-138, 2001)

Key words: adenomatoid hyperplasia; minor salivary gland; oral cavity; proliferation marker; tumor-like lesion.

Introduction

Adenomatoid hyperplasia (AH) of the minor salivary glands is an uncommon clinicopathologic entity usually affecting the palate and mimicking a benign or malignant tumor of salivary gland origin (1,2). It is a non-inflammatory and non-neoplastic focal enlargement of uncertain etiology of the intraoral mucous glands. Until 1999, 97 cases of AH had been reported in the English and Japanese literature

(3-24), where three large series were reported (5,10,14). This lesion has attracted a great interest in the dental journals but has received only scant attention in the medical literature (25). In fact, the World Health Organization Classification of Salivary Gland Tumours did not include AH in a list of tumor-like lesions (26). To our knowledge, only three case reports have appeared in otolaryngologic journals (8,15,23).

The aim of this paper was to present an additional case of AH which demonstrate the typical clinicopathologic characteristics in a 31-year-old man. Further, an attempt was made to analyze the proliferative activity of AH by immunohistochemistry.

Clinical Summary

A 31-year-old Japanese man was referred for evaluation of a painless mass on the palate. He reported that he had first noticed the small swelling approximately 3 months before. There was no history of trauma or inflammation at this site. The tumor, which was on the left central palate, was relatively soft, well-circumscribed, hemispheric in shape and 12 mm in maximum diameter (Fig. 1). The covering mucosa was intact and normal in color. Physical examination, other than the palatal mass and laboratory findings, was unremarkable. Prior to the surgical excision, scintigraphy and MRI were obtained that showed no evidence of malignant disease. A preliminary clinical diagnosis of a pleomorphic adenoma was made and the lesion was excised, under general anesthesia. Uneventful healing was observed and there have been no signs of recurrence 2 years after excision.

Pathological Findings

The lesion was composed entirely of multiple clusters

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Fig. 1 Clinical aspect of the palatal mass.

of normal-appearing mucous acini surrounded by fibrofatty tissue (Fig. 2). Acini appeared to be hypertrophic and filled with excessive mucous (Fig. 3). Focal areas of mucous spillage were observed but there was no inflammatory reaction (Fig. 4). In contrast to the hypertrophic acini, ductal elements were inconspicuous. No areas of fibrosis were evident. The overlying epithelium was intact but acanthotic. Because of the inability to ensure that the entire mass was AH, additional sections were cut; nothing of significance was found.

In order to analyze the cell proliferative activity of AH, immunohistochemical studies including proliferating cell nuclear antigen (PC10, 1:200, Biogenex, CA, USA) and Ki-67 (MiB-1, 1:50, Zymed, CA, USA) were performed by the streptavidin-biotin-peroxidase complex method. As a matched control group, normal palatal salivary glands obtained from 5 male patients with an age range of 25 to 40 years were used. The numbers of immunopositive nuclei were counted and the percentage was calculated. The labeling index of AH was 1.6% with proliferating cell nuclear antigen and 1.7% with Ki-67, and that of control group was 1.4% and 1.8%, respectively. No statistically significant differences were obtained using the Student's *t*-test.

Discussion

Our comprehensive review of the literature uncovered 80 cases of AH in Caucasians with black and Hispanic populations (3-14,17). Although several authors claimed that this lesion very rarely occurs in Asians (10,16,22), to our knowledge, 17 cases including 13 Japanese patients have been documented in Asian individuals (14-16,18-24). Thus, it is not as rare in Asians as generally believed.

Reviewing these 97 reported cases, 83 lesions (86%)

Fig. 2 Palatal lesion with normal overlying epithelium and aggregates of hypertrophic mucous acini surrounded by fibrofatty tissue (HE; original magnification $\times 2.3$).

Fig. 3 Normal-appearing mucous acini (HE; original magnification $\times 40$).

Fig. 4 Focal area of mucous spillage (HE; original magnification $\times 100$).

occurred on the palate. Other oral sites were the mandibular retromolar area (7 cases) (6,7,10,14,16,20), tongue (3 cases) (10,17), buccal mucosa (2 cases) (10) and lip (2 cases) (10). As has been pointed out previously, this lesion may occur at any site on the oral mucosa where mucous salivary glands normally exist (15). There was a male:female ratio of occurrence of 2:1. Middle-aged patients were more frequently affected; however a wide age range of 9 to 79 years has been reported (10). All lesions presented as a solitary, well-circumscribed asymptomatic tumor-like mass, except for four painful cases (11,14,16) and four multiple lesions (14). Almost all were 10 to 15 mm in diameter, where the largest size was 40 mm (13). Since the majority of cases were discovered incidentally, the duration could not be ascertained. With one exception (14), no recurrence has been documented. Therefore, once the diagnosis of AH has been done in a biopsy, no further treatment is needed.

The significance of AH lies in the clinical resemblance to an intraoral minor salivary gland tumor, but histologically it is easily distinguished from a true neoplastic process (1,2). The bulk of the lesion was composed of multiple clusters of otherwise normal-appearing mucous salivary glands. The acini appeared hypertrophic and filled with mucous. In contrast, ductal structures were inconspicuous throughout the lesion. Focal areas of mucous spillage and fibrosis were sometimes discovered. Chronic inflammation was generally patchy or absent. It is interesting to note that no serous acinar hypertrophy was found in cases of AH arising from the mixed salivary glands. The overlying epithelium was intact, occasionally exhibiting pseudoepitheliomatous hyperplasia. In the superficial part of the lesion, one case showed features consistent with lichen planus (12) and the other lesion coexisted with pigmented nevus (23).

Analysis of the proliferative activity of AH has been studied only once in the literature (24). Ohuchi et al. showed that mean number of argyrophilic nuclear organizer regions increased in a stepwise fashion from normal salivary glands to AH and pleomorphic adenoma (24). In the present study, there were no statistical differences in the labeling indices among AH and control salivary glands. These results clearly demonstrate that AH has little or no proliferative activity.

The etiology of AH is uncertain (1,2). No history of drug use or the occurrence of any concomitant disease, which cause enlargement of the salivary glands prior to or at the time of diagnosis, was recorded (5,10,14). Because the palate is the most preferred site of occurrence, chronic local trauma such as dental prosthetic appliances and smoking has been proposed as a likely cause (14). However, only 20 patients with palatal AH were denture wearers or

tobacco smokers (4,6,12,14,18,21). Moreover, this theory is not favored in patients with extrapalatal lesion. In most cases, the nature of AH is idiopathic (10).

Although a variety of salivary gland type tumor and tumor-like lesions may arise from the upper respiratory tract (25,27), we were unable to find reference to a sinonasal AH by a MEDLINE search. If we compare intraoral AH with those reported in the literature, we find similarities in some respects to seromucinous hamartoma in the nasopharynx (28-31). Whether this type of glandular hamartoma is an upper respiratory analogue to the intraoral AH is, at present, unclear. We believe that recently reported tumor-like enlargements of the major sublingual glands and AH are not the same entity, despite their similarities (32,33).

In conclusion, this case is fairly typical of the rare condition of AH. Pathologists and clinicians should be aware of the existence of this type of a minor salivary gland lesion, that is clinically suspected to be a salivary gland tumor, because of therapeutic and prognostic implications.

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