Case Report

Sialadenoma Papilliferum of the Palate: A Case Report

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Abstract

Sialadenoma papilliferum (SP) is a rare benign salivary gland tumor. Mostly, it occurs in association with minor salivary glands, especially at the posterior palate. The typical clinical features of this tumor are asymptomatic, slow growing, broad-based papillary projections of the oral mucosa. Here, we report a case of SP at the posterior palate of a 57-year-old woman. After incisional biopsy, complete excision of the tumor was performed. Histopathological examination showed parakeratinized stratified squamous epithelium which exhibits exophytic papillary projections along with underlying fibrocollagenous vascular connective tissue containing ductal structures lined by inner columnar cells and outer cuboidal cells. Based on these findings, the final diagnosis of SP was given. No recurrence was observed at 12 months follow-up. Reviews of previous case reports, clinical and histopathological differential diagnosis are discussed.

Keywords: Minor salivary gland, Palate, Sialadenoma papilliferum

Received Date: Jul 19,2017 **Accepted Date:** Oct 12,2017

doi: 10.14456/jdat.2018.19

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Introduction

Sialadenoma papilliferum (SP) is a rare, benign salivary gland tumor initially described and named by Abrams and Finck[1], since it has similar histological features to the benign neoplasm of the sweat gland, syringocystadenoma papilliferum. It was previously categorized in the ductal papilloma group, along with inverted ductal papilloma and intraductal papilloma.[2] However, based on the recent classification by WHO in 2017, SP has been classified as a separate entity.[3] Unique characteristics of SP are presented as papillary, exophytic projections of mucosal surface and endophytic proliferation of salivary duct epithelium.[4] Regarding the cellular origin

of the tumor, microscopic, immunohistochemical and ultrastructural studies have shown that the tumor cells exhibit features of various cell types of the salivary gland duct apparatus. Currently, most investigators believe that SP most likely originated from excretory ducts or excretory duct reserve cells; however, no consensus has been reached.[4,5] To date, about 71 cases of SP have been reported in the literatures written in English, with the majority of the cases occurred in relation with minor salivary glands especially at the palate.[1,5-27] Here, we report another case of SP at the hard palate in a 57-year-old female patient.

Case Report

A 57-year-old female patient came to the Dental Clinic of HRH Princess Maha Chakri Sirindhorn Medical Center complaining of a mass at the right posterior hard palate. She had noticed the presence of this painless and slow-growing mass for several months and had never sought any kind of treatment. Other histories including medical, dental or family history were not of relevant significance.

Intraoral examination revealed a well-defined and broad-based exophytic mass located at posterior hard palate on the right side. The surface of the lesion exhibited multiple small pink-colored papillary projections with white areas focally. The lesion was approximately 10x15x4 mm in size, positioned adjacent to the torus palatinus but was not associated with the upper removable denture that the patient was wearing (Fig. 1). Radiographic findings were unremarkable. Clinical differential diagnosis included squamous papilloma, verruca vulgaris, verrucous hyperplasia and verruciform xanthoma. Incisional biopsy and subsequent complete excision under local anesthesia were performed and specimens were submitted for histopathological examination, from which, a diagnosis of SP was given. Postoperative healing was uneventful and recurrence of the lesion was not observed at 12 months follow up.

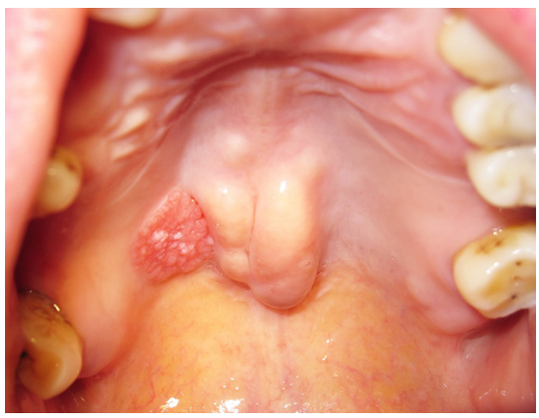

Figure 1 *Intraoral view of the well-defined, broad-based, papillomatous lesion at the posterior hard palate on the right side.*

Histopathological evaluation, as shown in Figure 2, 3 and 4, revealed a dome-shaped mass, which is surfaced by parakeratinized stratified squamous epithelium. The surface epithelium exhibits exophytic papillary projections with fibrovascular cores. The underlying fibrocollagenous vascular connective tissue contains ductal structures of variable sizes. The ductal structures are lined by inner columnar cells and outer cuboidal cells. The ductal lining epithelium is in continuity with surface squamous epithelium in some areas. Small papillary projections into ductal lumen are noted occasionally.

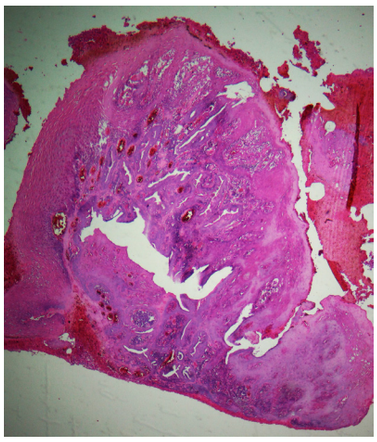

Figure 2 *Histopathological findings (hematoxylin-eosin staining) (magnification x40): Parakeratinized stratified squamous surface epithelium exhibits exophytic growth and forms papillary projections with fibrovascular cores. The underlying connective tissue stroma exhibits ductal structures of variable sizes.*

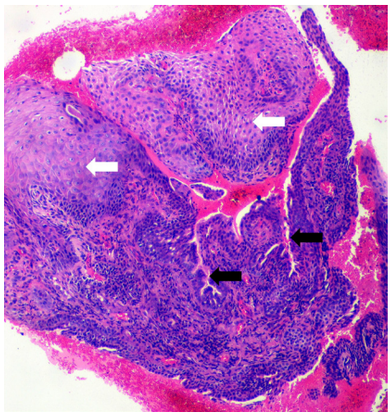

Figure 3 *Histopathological findings (hematoxylin-eosin staining) (magnification x100): Transition of surface parakeratinized stratified squamous (white arrow) to endophytic proliferation of ductal epithelium (black arrow).*

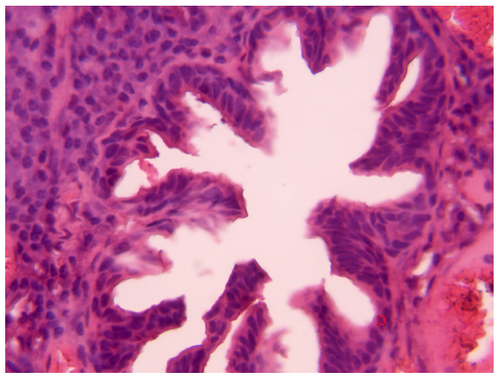

Figure 4 *Histopathological findings (hematoxylin-eosin staining) (magnification x400): Ductal structures are lined by inner columnar cells and outer cuboidal cells. Small projections into the lumen are observed.*

Discussion

In the 47-year period after the first report of SP[1], about 71 cases of SP have been reported in the English-language literatures as shown in Table 1. Sixty percent of the reported SP cases were involved with minor salivary glands, especially at the palate, at which most of the cases occurred at the hard palate (45.1 %), junction of hard and soft palate (9.9 %) and soft palate (5.6 %), respectively. In addition, SP was also found at buccal mucosa (8.5 %), upper lip (4.2 %), floor of mouth (2.8 %), tongue (2.8 %) and retromolar pad (2.8 %). As for major salivary glands, only involvement with parotid gland was reported in 5.6 % of the SP cases. Interestingly, there have been reports of a few SP cases occurring at uncommon areas, such as in the bronchus (4.2 %), nasal cavity (2.8 %), esophagus (2.8 %), adenoids (1.4 %) and faucial pillar (1.4 %). Among the 71 reported SP cases, 5 cases (7.0 %) were associated with malignant transformation (Table 1).

Table 1 *Reported cases of Sialadenoma papilliferum from 1969-2017*

Sites	Number of cases (Percentages)	References
Total number of cases	71 (100)	
Minor salivary gland		
Hard palate	32 (45.1)	5-7, 9-12, 15, 16, 18-24, 26, 27
Hard/Soft palate	7 (9.9)	1, 8, 13, 14, 17, 25
Buccal mucosa	6 (8.5)	15, 18, 28-31
Soft palate	4 (5.6)	11, 22, 24, 32
Upper lip	3 (4.2)	15, 33, 34
Floor of mouth	2 (2.8)	35, 36
Tongue	2 (2.8)	37, 38
Retromolar pad	2 (2.8)	39, 40
Major salivary gland		
Parotid gland	4 (5.6)	1, 41-43
Other areas		
Bronchus	3 (4.2)	44-46
Nasal cavity	2 (2.8)	47, 48
Esophagus	2 (2.8)	49, 50
Adenoids	1 (1.4)	51
Faucial pillar	1 (1.4)	52
Malignancy association	5 (7.0)	25, 32, 35, 37, 40

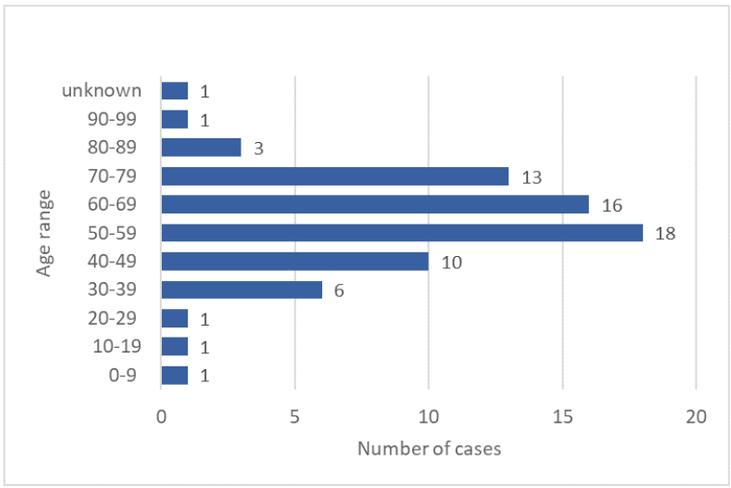

Figure 5 *Age distribution of the reported SP cases.*

According to the literatures, SP occurred in patients aged between 2-96 years old (mean±SD: 57.24±16.98 years) with high occurrences at the age ranges of 50-59 (18 cases), 60-69 (16 cases), and 70-79 (13 cases), respectively (Fig. 5). In addition, the prevalence of SP showed a male predilection demonstrated as the male to female ratio of 1.8:1.

Clinically, SP closely resembles oral squamous papilloma with similar features of asymptomatic and slow-growing, papillary exophytic mass which can occur in various areas of the oral cavity. Squamous papillomas are known to be induced by human papillomavirus infection.[53] But, so far, association between SP and human papillomavirus infection has not been established. Other clinical differential diagnosis includes verruca vulgaris, verruciform xanthoma and verrucous hyperplasia.

Histopathological features of SP are unique due to its biphasic growth pattern. Lesions that should be considered in the histopathological differential diagnosis include squamous papilloma, verruca vulgaris, verrucous hyperplasia and verruciform xanthoma. Squamous papilloma and verruca vulgaris are composed only of exophytic component with multiple papillary projections and fibrovascular cores. In addition, human papillomavirus-induced cytological changes such as koilocytes can be observed. While squamous papilloma is usually a pedunculated mass with stalk, verruca vulgaris is generally a sessile mass and exhibits convergence of rete ridges towards center of the lesion.[54] Verrucous hyperplasia also demonstrates exophytic growth with sharp or blunt-ended papillary surface due to hyperkeratosis and acanthosis. Broad-based rete ridges are observed in majority of cases. However, if invasion into the underlying connective tissue are noted, a diagnosis of verrucous carcinoma should be rendered.[54,55] Verruciform xanthoma demonstrates mild papillary surface with hyperkeratotic and acanthotic epithelium. The diagnostic feature of verruciform xanthoma is the collection of CD68, Periodic acid Schiff-positive, diastase-resistant foam cells at the connective tissue papilla.[54,56] Due to overlapping features of these lesions, adequate biopsy to include the periphery and deep portions of the lesion and careful evaluation of the specimen are, therefore, critical.

Origins of SP have been investigated by several groups. Previous ultrastructural study suggested that the tumor cells were in close resemblance with intercalated ductal cells.[12] However, more current immunohistochemical studies supported that SP may be derived from excretory ducts. The inner ductal cells expressed CK 7, 8, 14, 19 and were negative for vimentin and smooth muscle actin (SMA).[24] The outer myoepithelial cells expressed p63, p40, SMA, S-100 and Glial fibrillary

acidic protein (GFAP).[4,5] In addition, the squamous cells expressed CK 13 and 19.[6,24] The histopathological features of both squamous and ductal components as well as the immunoprofile of tumor cells as ductal and myoepithelial cells are most suggestive of excretory duct or excretory duct reserve cell as origin of SP.[5,24]

Most of the SP cases are benign in nature and are treated by complete excision. However, to date, 2 rare SP cases with recurrence have been reported.[13,29] Malignant transformation of SP has been controversial. There have been 5 published cases suggesting of malignancy associated with SP, all of which showed different clinical and histopathologicalal features.[37,40] The first case reported malignant SP based on its ability to metastasize.[32] One other case showed only dysplastic changes of the exophytic squamous component,[35] while the other two cases reported only adenocarcinoma of the glandular component.[25,37] There was only one case which exhibited malignant features of both the exophytic and endophytic portions.[40] The reported adenocarcinoma associated with SP included epithelial-myoepithelial carcinoma[25], mucoepidermoid carcinoma[37] and cystadenocarcinoma.[40] Behavior and prognosis of malignant counterpart of SP have been elusive due to its rarity.

Ethical approval

Informed consent from the patient has been obtained.

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