

# QUIZ

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### CANALICULAR ADENOMA OF THE UPPER LIP

#### METACHRONOUS (MULTIFOCAL) CANALICULAR ADENOMA OF THE UPPER LIP: A CASE REPORT OF AN UNUSUAL FINDING

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We report a peculiar case of canalicular adenoma of the upper lip in a 57-year-old woman, presenting as two distinct asymptomatic nodules diagnosed and treated surgically within a 2-year period.

**Key words:** canalicular adenoma, histology, immunohistochemistry.

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#### Introduction

Canalicular adenoma (CA) is a distinctive tumor occurring almost exclusively in the upper lip [1-3]. It is a relatively rare neoplasm, but it is the second (or the third) most common tumor among benign tumors of minor salivary glands [4, 5]. A few cases of multiple foci of CA have been reported in the literature [6-12]. We present herein a new case of multifocal canalicular adenoma of the upper lip, involving a 57-year-old woman, and discuss histological and immunohistochemical characteristics of the tumor.

#### Case report

A 57-year-old female patient presented to the Dentistry Department with a tumor on the upper lip. Macroscopic examination revealed a well-circumscribed, smooth, firm, round nodule with a diameter of 0.5 cm (Fig. 1). Histologically, it was composed of anastomosing duct-like or trabecular structures lined with a single or double layer of columnar cells (Fig. 2),

which were immunoreactive to cytokeratin (Fig. 3), CD117 (Fig. 4) and S100 protein (Fig. 5). The histological texture and immunohistochemical characteristics of primary tumor, localized in the neighborhood, excised 2 years earlier, were similar to the microscopic picture of the presented neoplasm. The patient is currently free of disease 6 months after surgical excision of the tumor.

#### Discussion

Canalicular adenoma is a benign tumor which comprises 1% of salivary gland neoplasms. However, among intraoral minor salivary gland tumors it constitutes approximately 5.6%-11.7% of all studied cases [4, 5, 13-15].

It occurs typically (in about 90% of cases) in the upper lip [1-3] and buccal mucosa [13] of individuals usually over 60 years old. Infrequently it is found on the palate [16, 17] and in the parotid gland [8, 18, 19].

A few cases of multiple foci of CA have been reported in the literature. Most of them appeared as synchro-

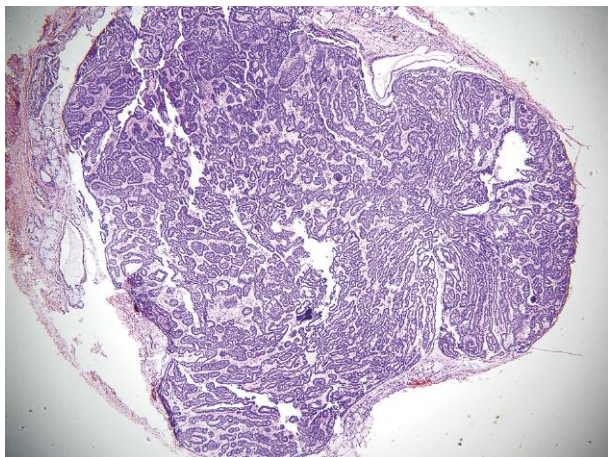


Fig. 1. Histological picture of the tumor on the upper lip. HE. Low magnification

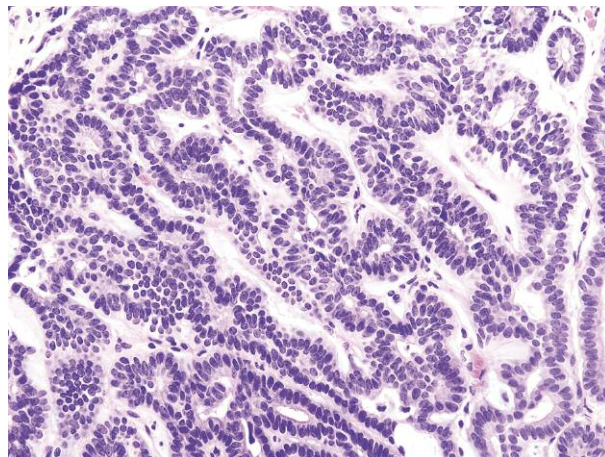


Fig. 2. Histological picture of the tumor on the upper lip. HE. High magnification

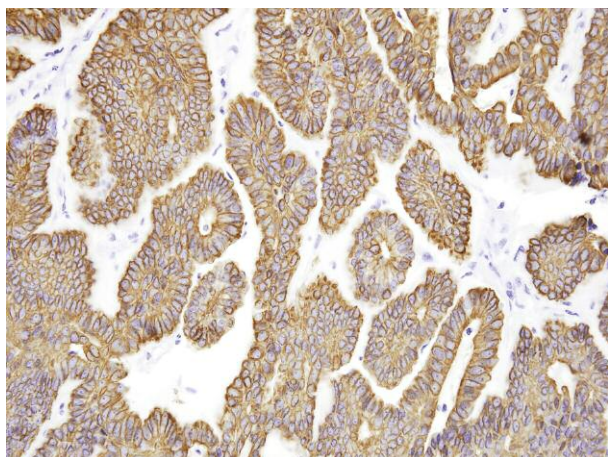


Fig. 3. Immunohistochemical reaction to cytokeratin 7

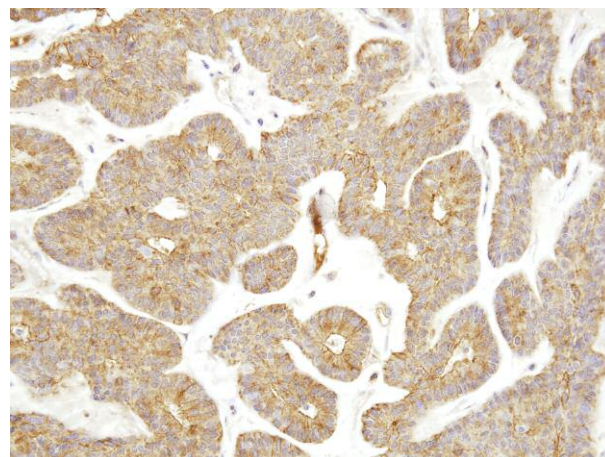


Fig. 4. Immunohistochemical reaction to CD117

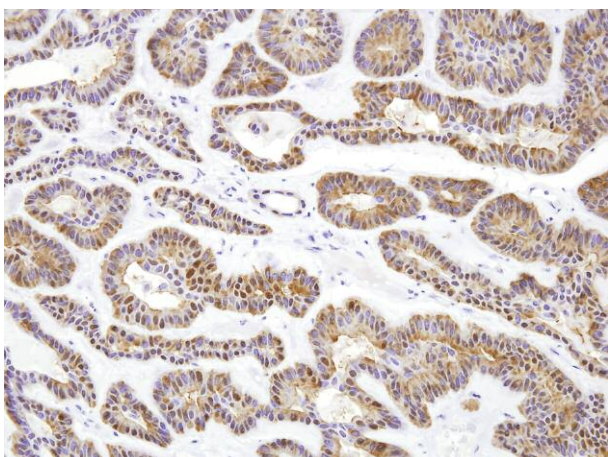


Fig. 5. Immunohistochemical reaction to S100 protein

nous, sometimes bilateral changes (Table 1). The exceptionally rare multifocal cases were presented by Rousseau [10] and by Khullar *et al.* [12]. The first author described a case that manifested with 13 clinically discrete tumor masses involving the upper lip and anterior buccal mucosa. In addition to the

clinical nodules, there were microscopic foci of tumor cells in the adjacent normal-appearing salivary gland tissue surrounding the tumors [10]. Khullar *et al.* presented a patient who had multiple canalicul adenomas in the upper lip and adjacent oral mucosa. A few months after these had been excised, several more tumors of the same type developed. He named the lesions adenomatosis of minor salivary glands [12].

There is some disagreement among investigators about whether canalicul adenoma is a unique entity. This tumor has often been referred to as a variant of basal cell adenoma. However, the World Health Organization's latest histological classification of salivary gland tumors [20] recognizes it as a separate entity under the broader heading of monomorphic adenoma, which is not related to any of the subtypes of basal cell adenomas.

Basal cell adenoma is a benign epithelial neoplasm with a uniform histological appearance dominated by basaloid cells. These cells may be distributed in various arrangements as solid, trabecular, tubular and membranous [21]. In contrast, canalicul adenoma is char-

Table I. Multiple canalicular adenomas of minor salivary glands. Data from literature

NO	AGE	SEX	LOCATION	TUMORS' CHARACTERISTICS	RECURRENT TUMOR (MO)	AUTHOR (YEAR)	REFERENCE NO.
1	78	F	upper lip	2 nodules on the right side and another 2 lesions on the left side	Yes (12)	Mansueto <i>et al.</i> (2009)	[6]
2	76	F	upper lip	2 distinct masses on the right and left side of the upper lip, 0.8 cm and 1.1 cm in diameter, respectively	n.d.	Yoon <i>et al.</i> (2006)	[7]
3	26	M	parotid glands	lobulated masses in both parotid glands	n.d.	Liess <i>et al.</i> (2006)	[8]
4	68	F	upper lip	22 nodules up to 2 cm in diameter	No (48)	Queiroz <i>et al.</i> (2004)	[9]
5	64	M	upper lip & buccal mucosa	13 submucosal nodules up to 1.1 cm in diameter	No (6)	Rousseau <i>et al.</i> (1999)	[10]
6	75	F	buccal mucosa	2 distinct masses in the left cheek mucosa and the third lesion appeared 9 months later	Yes (9, 21)	Nelson <i>et al.</i> (1995)	[11]
7	59	M	upper lip & buccala	6 lesions of the buccal mucosa and one – the largest, 1.5 cm in diameter in the upper lip; next 14 new nodules confined to the upper lip and buccal mucosa were excised 1 and 6 month later	n.d.	Khullar <i>et al.</i> (1992)	[12]

F – female, M – male, n.d. – no data available

acterized by a complex cellular pattern of anastomosing duct-like, trabecular or papillary-like structures lined by a single layer of tall columnar epithelial cells embedded in a loose, fibrous, and highly vascular connective tissue stroma [21-23]. What is more, the results of several immunohistochemical studies showed a distinct immunoprofile for both neoplasms [21].

Canalicular adenoma needs to be distinguished from ductal and epithelial-rich pleomorphic adenomas, basaloid or purely myoepithelial tumors, and especially from adenocarcinomas. One must remember that canalicular adenoma and both polymorphous low-grade adenocarcinoma (PLGA) as well as adenoid cystic carcinoma (ACC) may share some histological characteristics that can cause difficulties in their differentiation, and the over-diagnosis of malignant neoplasm may result in unjustified radiotherapy or extensive and aggressive surgery.

Immunohistochemistry can be helpful in the diagnosis of minor salivary gland neoplasms. The cells of the canalicular adenoma showed an immunohistochemical profile that indicates an excretory duct origin: most of these cells were immunoreactive to pancytokeratins (AE1/AE3), and S-100 protein, but were negative for smooth muscle actin (SMA), vimentin and CK13 or CK14 [23-25]. Rare focal staining with anti-epithelial membrane antigen was also noted [25]. Canalicular adenoma did not demonstrate p63 staining, consistent with this tumor's putative luminal duct

cell differentiation. Contrarily, nuclear p63 reactivity was uniformly positive in polymorphous low-grade adenocarcinoma. Positive reactivity was also identified in the majority of cases of adenoid cystic carcinoma primarily in the nonluminal myoepithelial-like cells surrounding luminal cells. All basal cell adenomas of parotid origin stained strongly for p63, too. However, none of the basal cell adenomas originating in the upper lip expressed p63 [26]. Vimentin is an important marker to differentiate between canalicular adenoma and polymorphous low-grade adenocarcinoma; vimentin is only expressed by PLGA [27]. Additionally, the pattern of GFAP immunoreactivity may be an adjunct to differential diagnosis of canalicular adenoma and PLGA. Ninety-six percent of canalicular adenomas demonstrated a distinctive linear immunoreactive pattern among cells in proximity to the connective tissue interface [28].

This tumor has an excellent prognosis after conservative surgical treatment in all locations [24]. However, patients with canalicular adenoma may need a longer follow-up due to its tendency towards multifocal occurrence and late (up to 11 years) recurrence [29].

*The authors declare no conflict of interest.*



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