

CASE REPORT

A case with tumor of left parotid gland and denture stomatitis

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Abstract

The article discuss the case of an edentulous patient presented to the dental clinic for pain and burning sensation of oral mucosa and diagnosed subsequently with oxyphilic adenoma. A 58-year-old patient, with maxillary edentulism, treated with complete denture, presented to the Clinic of Prosthetic Dentistry of the Faculty of Dental Medicine, University of Medicine and Pharmacy of Craiova, Romania, for pain of oral mucosa and bad stability of denture. The diagnosis of erythematous denture stomatitis as consequence of salivary flow reduction was establish after patient's clinical examination, and by unstimulated sialometry. Clinical exam suggested hyposalivation could be a consequence of a tumor situated at the level of the left parotid gland. The echography confirmed the diagnosis of left parotid gland tumor. The tumor was surgical removed and histopathological exam confirmed oxyphilic adenoma. Education of patient for wearing new denture while maintaining a strict oral hygiene and dealing with low salivary flow was the treatment for denture stomatitis. General dentist has an important role in finding and diagnosing patients with systemic diseases, especially salivary tumors.

Keywords: denture stomatitis, parotid gland, oxyphilic adenoma.

Introduction

A rare tumor of salivary gland origin, oxyphilic adenoma, is known also as oncocytoma, oncocytic adenoma, oxyphilic granular cell adenoma and eosinophilic adenoma [1]. The incidence of this tumor in parotid gland is less then 1% [2]. It occurs mostly in persons between 50 and 70 years of age [3]. The main aspect of the tumor is the oncocyte, a large epithelial cell, with round, central nucleus and granular cytoplasm [4]. Oncocytic cells presence was noted in other salivary glands, like minor salivary glands [5] but also in organs like parathyroid [6], thyroid [7], adrenal glands [8, 9], bile duct [10], naso-lachrymal duct [11] and renal tissues [12, 13]. These cells have the potential of malignant transformation, toward oncocytic carcinoma [7, 12, 14].

Oxyphilic adenoma sometimes goes unobserved, but sometimes it is accompanied by a reduced salivary flow and oral mucosa alterations. Dentist has an important role in diagnosing cases with salivary gland tumors like oncocytoma and referring them for adequate treatment.

Aim

We present the rare case of a 58-year-old woman with oncocytoma of the left parotid gland and discuss the characteristics of this rare entity.

Patient and Methods

The patient, P.E., women, aged of 58 years, from countryside, presented to the Clinic of Prosthetic Dentistry of the Faculty of Dental Medicine, University of Medicine and Pharmacy of Craiova, Romania for pain of oral mucosa and bad stability of denture. Patient had a total

maxillary edentulism with a complete denture. The patient complained of dysphagia, pain and burning sensation of the oral mucosa, difficulties in phonation and dry mouth.

Clinical examination showed the maxillary edentulous area covered by a fragile, dry mucosa mucosa with a moderate atrophy and increased hyperemia of the palatal mucosa (Figure 1).

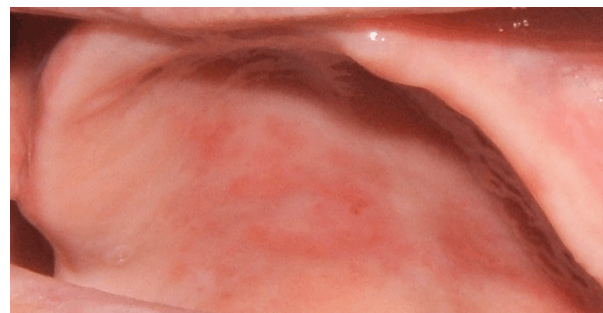


Figure 1 – Denture stomatitis.

The patient had a mild facial asymmetry induced by a tumoral mass developed at the level of left parotid gland. The tumoral mass was well circumscribed, about 3×3 cm in dimensions, and movable on adjacent tissues. The preauricular lymph nodes, retroauricular lymph nodes and latero-cervical lymph nodes were not palpable.

Unstimulated sialometry by filter paper technique has shown a decreasing of salivary flow and the pH salivary measurement revealed a 6.1 value. The patient was sent to Oral and Maxillofacial Surgery Clinic for subsequent diagnostic and treatment.

The echographic exam of the tumoral mass indicated the presence of a heterogeneous structure and the computerized tomography pointed out the presence of a

tumor situated at the level of the left parotid gland having 28–30–31 mm in dimensions, with well-determined edges, and a consistence similar to the normal salivary parenchyma. The laboratory exams had normal values, excepting the VHS, which was moderately increased. The tumor was surgical removed by a total parotidectomy with the preservation of the facial nerve. The tumoral mass was processed through the paraffin histological technique. The sections obtained were stained with Hematoxylin–Eosin (HE), Phosphotungstic Acid–Hematein (PTAH) and trichromic Goldner–Szekely (GS).

Results

The examination of the surgical sample showed an isolated, well-determined mass of approximately 3/3 cm and with regular edges. On section surface, the aspect was solid and yellowish.

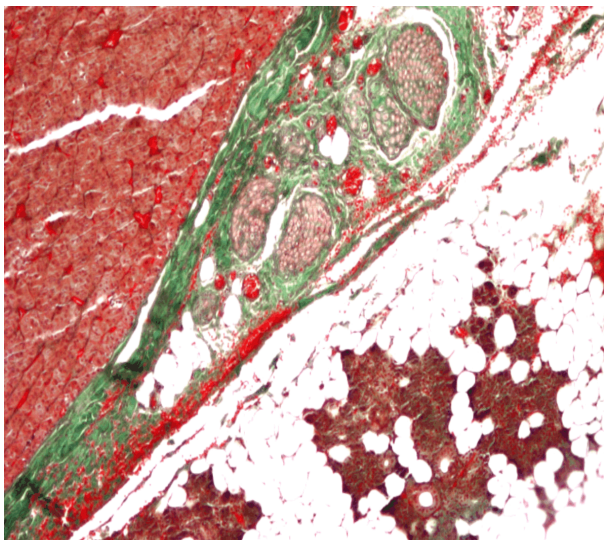


Figure 2 – Oxyphilic adenoma: the capsule of the tumor. Trichromic Goldner–Szekely staining, $\times 40$.

Histopathologically, the tumor consisted of an oxyphilic adenomatous proliferation in a reduced fibrovascular stroma (Figure 2).

The microscopic aspect is characteristic for the oxy-

philic adenoma (oncocytoma). The tumor pattern is solid, and the stromal component has a fibrovascular aspect (Figure 3). The main cell component of this tumor is the oncocyte (Figure 4). The oncocyte is a polygonal cell with well-defined edges, abundant cytoplasm, intensely eosinophilic and smoothly granulated, with a round nucleus, lax chromatin pattern and an obvious nucleus (Figure 5). The intensity of the eosinophilia varies, and “light” and “dark” stained cells are often present. Numerous mitochondria existing in these cells cause this strongly eosinophilic, finely granular cytoplasm aspect, highlighted by the PTAH stain, in the form of dark-blue intracytoplasmatic granules (Figure 6).

After the surgical treatment, patient came back to general dentist for local treatment. The patient received a new denture and she has been counseled to maintain a good hygiene of the denture and to use artificial saliva to keep moisture in her mouth.

Discussion

Oxyphilic adenoma (oncocytoma) is a rare type of salivary tumor, with controversial histogenesis. Oncocytoma accounts for 0.5–1.5% of salivary gland tumors [15–19]. Regular dental check-ups or visits caused by problems produced by hyposalivation are moments when dentist observe this disease in the dental clinic. One of these problems is denture stomatitis in complete denture wearers.

Denture stomatitis represents the most frequent complication encountered in patients with dentures, especially maxillary ones, 33% according to Frenkel *et al.* (2000) [20]. In the etiology of denture stomatitis, local, traumatic, microbial and systemic factors occur. A series of other ailments, which lead to hyposalivation, like tumors of salivary glands, cause the increasing of stomatitis frequency in denture wearers [21].

Clinical aspects of oncocytoma resemble those of other benign salivary gland tumors, patients presenting with a solitary slow-growing painless parotid mass [17, 19, 22–26], frequently hardly observed.

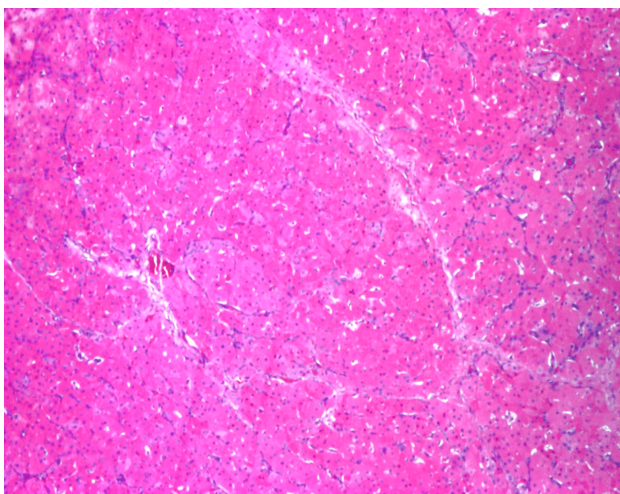


Figure 3 – Oxyphilic adenoma: proliferation of oncocytes with solid pattern in a reduced fibroconjunctive stroma. HE staining, $\times 40$.

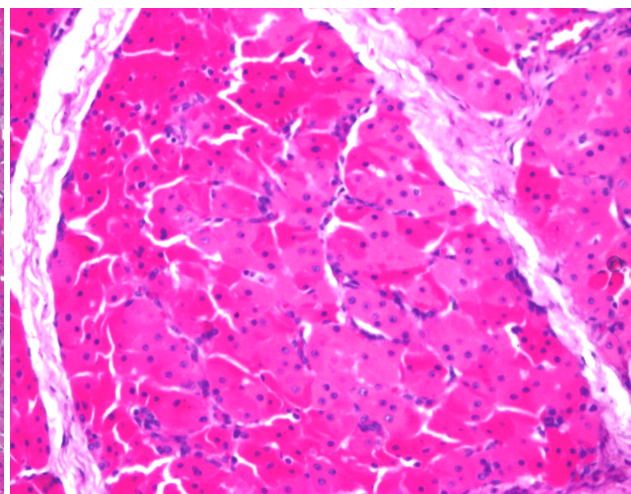


Figure 4 – Oxyphilic adenoma: proliferation of oncocytes with solid pattern. HE staining, $\times 100$.

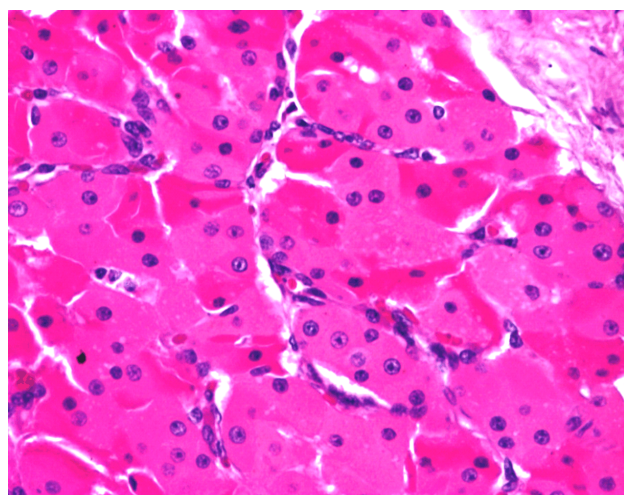


Figure 5 – Oxyphilic adenoma: oncocytes, detail. HE staining, ×200.

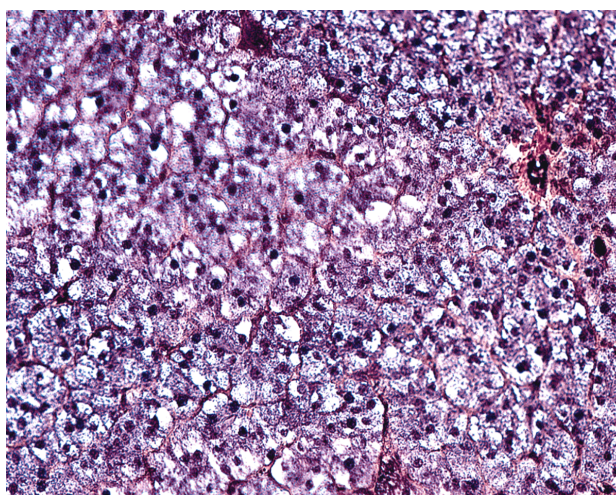


Figure 6 – Oxyphilic adenoma: oncocytes with dark-blue intracytoplasmic granulations (mitochondria). PTAH staining, ×200.

Only histopathological exam could establish certain diagnosis. There are controversies regarding tumor histogenesis [1]. For oxyphilic adenoma, the prevailing and exclusive type of cells are the oncocytes. The ultrastructural studies confirmed the great cytoplasmatic richness in mitochondria of these cells. Sometimes, these can fill the cytoplasm entirely, but a volume of about 60% is typical [25]. Ultrastructurally, mitochondria vary in shape from round to elongate to irregular.

Desmosomal cell attachments are usually evident. Some oncocytes border glandular lumens, and in such cases tight junctions and microvilli are observed [26]. The oncocytes can present variations of the cellular and nuclear volume, but the mitosis is rare [26]. Other studies indicated foci of sebaceous metaplasia, mucosa or squamous and even structures similar to psammomatous bodies [27]. Brandwein & Huvos [28] estimated that 11% of the oncocytoomas present clear cells, these being able to dominate the histological picture or they can appear as solitary foci of clear metaplasia. When they are predominant, it could be the variant of oncocytooma with clear cells [29]. The clear aspect of these cells appear because of the accumulation of great quantities of glycogen in the cytoplasm of the oncocytic cells, which can be highlighted by staining with PAS (Periodic Acid–Schiff) before and after tissue digestion with diastase. The arrangement of these clear cells is organically, the typical oncocytes can be inside of these nodules. These clear cells were particularly common in multinodular oncocytic hyperplasia [28].

The compact disposing of the oncocytary cells is in the form of trabeculas, round aggregations, diffuse strata and rarely in the form of glandular structures, separated by thinly fibrous septa or by a poor stroma made up of lax connective tissue [27]. Occasionally, such tumors can contain one or more micro- and macrocystic structures. Some of these have an associated lymphoid infiltrate and resembled Warthin's tumor. Some authors included the Warthin's tumors developed in the minor salivary glands in the category of oncocytary cystadenomas [30].

Other tumors with oncocytes has to be excluded, including the benign mixed tumor, malignant oncocytooma,

adenoid cystic carcinoma, muco-epidermoid carcinoma, and adenocarcinoma [2]. The oncocytic metaplasia involves the alteration of the ductal or acinary cells and takes place after 50 years, and become common after the age of 70 [2]. The oncocytoosis consists of the diffuse proliferation of the oncocytes in the salivary glands, which lead to the total substitution of the salivary parenchyma [20, 25].

According to Brandwein & Huvos, the oncocytooma appears from a single nodule proliferation, well defined by a fine fiber capsule, while the oncocytoosis should in the presence of multiple encapsulated nodular foci, of oncocytic proliferation [28]. Mixed tumor and mucoepidermoid carcinoma are the two salivary gland neoplasms that most frequently demonstrate oncocytic metaplasia. The differential diagnosis is easy if taking into consideration the patterns and the cytological differentiations of these two tumoral entities [7].

Treatment of parotid benign oncocytoomas is complete surgical resection, and most follow a benign outcome [17]. Differential diagnosis with carcinoma has to be well established since conservative parotidectomy is not radical enough to treat oncocytic carcinoma of the parotid gland. Elective neck dissection is recommended for patients with cancer stage T2 to T4 [2]. Histopathological diagnostic is very important to guide subsequent treatment of oncocytooma.

☐ Conclusions

General dentist has an important role in finding and diagnosing patients with systemic diseases, especially salivary tumors. In this case, patient presented to dentist for denture stomatitis, and its investigation conducted to the diagnosis of salivary tumor. For this patient, histopathological exam showed a well-delimited tumor, without malignant transformation. Specific microscopic aspect was of oxyphilic adenoma, with oncocytic cells. Surgical treatment had a benign outcome.

Conflict of interests

The authors declare that they have no conflict of interests.

Author contribution

All authors have equally contributed to this article.

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