

Pleomorphic adenoma. The results of a retrospective analysis of 104 patients treated at the Clinical Department of Cranio-Maxillofacial Surgery, Clinic of Otolaryngology and Laryngologic Oncology of the Military Institute of Medicine

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Article history: Received: 25.05.2017 Accepted: 25.07.2017 Published: 31.08.2017

ABSTRACT:

Pleomorphic adenoma, also known as tumor mixtus, is one of the most common types of benign neoplasm of the salivary gland, which presents as a slow growing, painless tumor. Major salivary glands are the typical localization of this neoplasm. It rarely undergoes malignant transformation, however may recur locally post resection. In this study, we present the results of a retrospective analysis of 104 patients treated at the Clinical Department of Cranio-Maxillofacial Surgery, Clinic of Otolaryngology and Laryngologic Oncology of the Military Institute of Medicine between 2004 and 2015 due to pleomorphic adenoma. The study confirmed the parotid gland as the most common location of tumor mixtus. In some cases, the large size of the tumor and its location were the cause of life-threatening complications.

KEYWORDS:

pleomorphic adenoma, tumor mixtus, parotid gland, parotidectomy

INTRODUCTION

It is estimated that neoplasms of the salivary glands constitute 2-10% of all head and neck tumors [1,2,3,4,5]. Pleomorphic adenoma, also known as 'the mixed tumor', is one of the most common benign tumors of the salivary glands [2,5]. In half of the cases, it is located in the parotid gland and less often it involves the submandibular, and rarely the sublingual gland [2,3]. In the submandibular gland, the malignant type is more common compared to the parotid gland [3]. Pleomorphic adenoma can be located outside the salivary glands, although it is rare. In the literature, there are reports of pleomorphic adenoma located in the palate, external auditory meatus, lacrimal gland or skin [6,7,8]. Benign tumors of the salivary glands, especially mix tumors, can become cancerous [1,3,5], therefore, oncology surveillance is always necessary.

The most common symptom of a salivary gland tumor was an asymmetry of the mandibular angle and the preauricular region as well as bulging or a well-defined mass that was not attached to the skin and was movable against the underlying tissue, increasing in size and producing pain sensation. The characteristic feature is the lack of facial palsy even if the tumor reaches great size. On macroscopic view, the pleomorphic adenoma is a slow-growing monofocal mass. It has well-defined borders and is surrounded by a fibrous capsule, however, it is often accompanied by satellite tumors and capsular infiltration, which can give rise to a relapse following a non-radical resection [5,9]. In addition to physical examination, the diagnostic workup includes fine-needle aspiration biopsy and ultrasound of the tumor itself and the surrounding lymph nodes. Ultimately, the material obtained during surgery is sent for pathology study.

The microscopic view is characteristic and includes both epithelial and mesenchymal elements. Cancer cells can form various glandular, ductal or trabecular structures [5]. The main complication of managing salivary gland tumors is the paresis or paralysis of the facial nerve. In most cases, partial or total regeneration of the nerve is observed. Moreover, the formation of salivary fistula or an excessive sweating of the operated site can also occur (Frey's syndrome) [9].

AIM OF THE STUDY

To determine the incidence of pleomorphic adenoma in relation to sex, age and location of the tumor based on the material of the Department.

MATERIALS AND METHODS

The study was based on the retrospective analysis of 168 patients treated for salivary gland tumors at the Cranio-Maxillofacial Surgical Unit of the Department of Otolaryngology and Laryngological Oncology, Military Institute of Medicine, Warsaw, over the years 2004 to 2015 (Fig.1.). The study included history taking, retrospective analysis of inpatient and outpatient medical records, pathology reports and imaging studies. Among 168 patients, Warthin's tumor was diagnosed in 52 patients, adenocarcinoma – in 12, and multiform adenoma in 104 patients (Table 1). The last group was subjected to a more detailed analysis. Our study included 58 females (56%) and 46 males (44%) aged 13 – 81. Therefore, a slight dominance of women in the incidence of pleomorphic adenoma reported in the literature has been confirmed in our study [5]. Mean age of the patients was 51. The most common location of the mixed tumor was the salivary glands, which were involved in 86 patients. In 69 cases, the tumor developed in the parotid gland, and in 17 cases – in the submandibular gland. No sublingual involvement was observed in our study. Moreover, the tumor was located in the palate in 10 patients, while in buccal, labial and gingival mucosa in 8 patients (Fig.2.). The history was less than 12 months in 161 patients, and it did not exceed 5 years in 7 cases. Three patients had history of resection of a salivary gland tumor (pleomorphic adenoma) at another facility (submandibular gland - 1, parotid gland - 2). In 5 cases, the tumor was accompanied by inflammation, which occurred following the diagnostic biopsy and resolved after a course of antibiotics. All patients were treated surgically. Tumors of small salivary glands or submandibular glands were removed with the entire gland. Most tumors of the parotid gland developed in the superficial part and were managed by superficial parotidectomy. In other locations location, including the deep portion of the

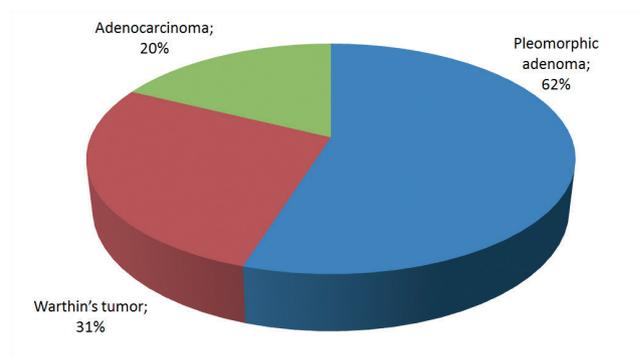


Fig. 1. Patients treated for salivary gland tumors at the Cranio-Maxillofacial Surgical Unit of the Department of Otolaryngology and Oncologic Laryngology, Military Institute of Medicine, Warsaw, 2004-2015 (total of 168 patients)

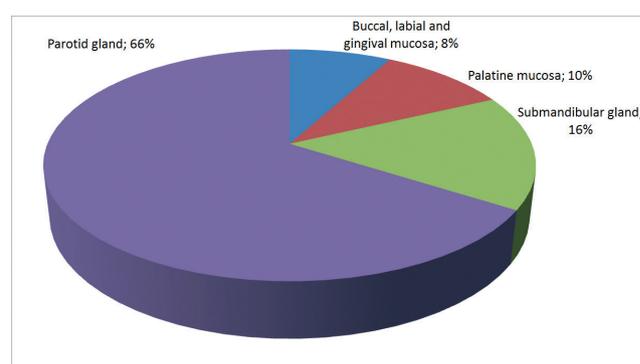


Fig. 2. Location of pleomorphic adenoma in patients treated at the Cranio-Maxillofacial Surgical Unit of the Department of Otolaryngology and Laryngological Oncology, Military Institute of Medicine, 2004-2015 (total of 104 patients).

parotid gland, the entire gland was excised sparing the facial nerve. The relapse occurred in 6 patients. In one patient, the pleomorphic adenoma underwent malignant transformation.

DISCUSSION

The study confirmed the incidence, location of pleomorphic adenocarcinoma of the salivary glands reported by other authors [1,2,3,4,5]. Taking the histological type into consideration and resigning from previously performed enucleation of the tumor allowed to minimize the risk of relapse [5], which was less than 7% in our study, while the reported figure in the literature is 33.5% [1]. Although the tumor is benign and the surgical techniques [5] eliminate the risk of recurrence, it should be emphasized that in some instances, the location of the tumor can influence the quality of life or even be life-threatening. The case of a patient

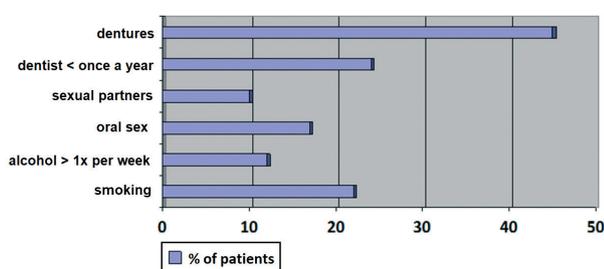


Fig. 3. Frequency of head and neck cancer risk factors.

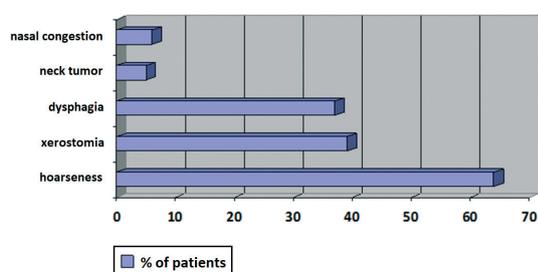


Fig. 4. Frequency of symptoms.

with a large tumor of the submandibular gland reaching the bifurcation of the common carotid artery is worth mentioning. The tumor displaced the airways, which resulted in dyspnea. Even a light pressure applied to the tumor caused bradycardia (40/min) due to the compression of the carotid body. In another patient, the tumor was located in the palate and, by compressing the bone, it caused formation of an oronasal fistula, so that the patient required an obturator after surgery. Comparing our results with the study conducted 11 years ago at our Department [9], we concluded an increase in the overall incidence of salivary neoplasms as well as a decreased age limit of the patients.

CONCLUSIONS

- The parotid gland is the most common location of the pleomorphic adenocarcinoma.

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Tab. I. Patients with lesions requiring oncology treatment.

	SEX	AGE	CLINICAL DIAGNOSIS	HISTOLOGY
1	F	76	tongue mass	fibroma
2	F	65	nasopharyngeal mass	oncocytooma
3	M	72	neck tumor	chronic inflammation of submandibular gland
4	M	61	exophytic mass of lateral tongue surface	leukoplakia
5	F	53	palatine tonsil tumor	benign cyst
6	F	62	upper lip tumor	benign cyst
7	F	58	neck tumor	chronic inflammation of submandibular gland
8	F	69	parotid gland tumor	Pleomorphic adenoma
9	M	64	palatine tonsil tumor	benign cyst
10	M	62	soft palate lesion	leukoplakia
11	F	60	tongue tumor	fibroma
12	F	72	parotid gland tumor	Pleomorphic adenoma
13	M	69	palatine arch lesion	papilloma
14	M	48	submandibular gland tumor	Pleomorphic adenoma
15	M	79	laryngeal mass	Planoepithelial carcinoma T2NoMo
16	M	60	thyroid mass	Papillary cancer
17	F	57	neck tumor	adenocarcinoma (metastatic breast cancer)
18	M	67	tongue mass	Planoepithelial carcinoma T3N1Mo

- In most cases, the tumor develops in the superficial part of the parotid gland.
- Removal of the superficial part (if it contains tumor) or the resection of the entire parotid gland sparing the facial nerve (if the tumor is located in the deep part) is currently considered the method of choice.
- The location in the proximity of important anatomical structures

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Word count: 1100 Tables: 1 Figures: 4 References: 9

Access the article online: DOI: 10.5604/01.3001.0010.2246 Table of content: <https://otolaryngologypl.com/resources/html/articlesList?issueId=10155>

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Competing interests: The authors declare that they have no competing interests.

Cite this article as: Korba M., Chloupek A., Dąbrowski J., Piętka T., Domański W., Biernacka B., Leśniak W.: Pleomorphic adenoma. The results of a retrospective analysis of 104 patients treated at the Clinical Department of Cranio-Maxillofacial Surgery, Clinic of Otolaryngology and Laryngologic Oncology of the Military Institute of Medicine; *Otolaryngol. Pol.* 2017; 71 (4): 33–36