REVIEW OF 103 CASES OF MINOR SALIVARY GLAND TUMORS

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Abstract–From 1972 to 1992, 518 cases of salivary gland tumors (major and minor) were registered in the Department of Surgical Pathology of Cancer Institute. Of these, 103 cases were minor tumors (56 female and 44 male). Three cases were excluded from the study because of the controversy regarding their diagnoses. The most common pathology was mixed tumor (69%) (benign pleomorphic adenoma) and the remaining 31%, were malignant. There were 20% adenoid cystic carcinoma and 7% muco-epidermoid carcinoma, with only 3% (or 3 cases) malignant mixed tumor, and finally 1% observed as acinic cell adenocarcinoma. The most common anatomic sites of these tumors were the hard and soft palate of 36% and 17%, respectively.

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Key words: minor salivary gland; mixed tumor; muco-epidermoid carcinoma

INTRODUCTION

Tumors of minor salivary gland are uncommon neoplasms of upper aerodigestive tract (I,II). The sites of origin are mainly related to the natural population density of the minor salivary glands in the mucosa of the upper aerodigestive tract (1,2,3). These tumors are uncommon before age 20 and rare under age 10 (3,4). There is no known causative factor of established ethiology .

Approximately, half of these tumors are malignant (3), mainly adenoid cystic carcinoma, mucoepidermal carcinoma, adenocarcinoma, malignant mixed tumors, etc. (3,5,6,7). The benign variant of these tumors is mainly a mixed pleomorphic adenoma. The initial lesion frequently shows a submucosal mass, often painless and without ulceration. The lesions are indolent, slow-growing and the history in some cases may go back to many years (10-20 or more).

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The only available curative therapy is surgery and radiation, and the mode of the therapy is mainly dependent on the histological grading (6,8,9,10).

MATERIALS AND METHODS

All the cases registered as salivary gland tumors, from 1972-1992, in the log books of the Department of Surgical Pathology, were reviewed. Relevant and well-established data were obtained from the pathologic reports, available documents, and other sources of information.

In each case, information regarding age, sex, place of birth, job, chief complaints, anatomical sites of lesion, duration of symptoms, results of biopsy, surgical treatment and final pathologic report was obtained.

RESULTS

From 1972 until 1992, a total of 518 cases of salivary gland tumors were diagnosed in Cancer Institute. One-hundred and three cases (29%) were minor salivary gland tumors, which form the subject of this study.

Three cases were excluded from this study because of controversy regarding their diagnoses. Fifty-six percent of the patients were female and 44% male, aged 11-89 years. The highest group (25 cases) were in the fifth decade of life and twenty-two cases were in the fourth decade (Table 1).

Anatomic distribution

As illustrated in Table 2, the anatomic distribution of minor salivary gland tumors shows that the hard and soft palates are the most common anatomic sites (36% and 17%, respectively), followed by the maxillary sinus

(14%), upper lip mucosa (12%), oral mucosa of the cheek area (5%), gingiva (5%), nasopharynx and pharynx (4%), tongue (3%), lower lip mucosa (2%), and finally the larynx (2%).

Pathologic distribution

The most common pathology (69%) was benign pleomorphic adenoma or mixed tumors of the minor salivary glands comprising 36 females and 33 males. The remaining 31% were malignant tumors in decreasing order of frequency as follows:

Adenoid cystic carcinoma: 20% (15% female and 5% male),

Muco-epidermoid carcinoma: 7% (2% female and 5% male),

Malignant mixed tumors: 3% (2% female and 1% male),

Acinic cell adenocarcinoma: 1% (male).

This pattern of distribution somehow, differs from literature where 50% of minor salivary glands are malignant. This finding is consistent with previous study by Pishva et al (11). Table 3 shows the pathologic distribution of these tumors.

Benign pleomorphic adenoma

There were 69 cases of benign pleomorphic adenoma (BPA) in this study. A large variation in size was noted. They were a few millimeters to several centimeters in diameter. Their surfaces were lobular or nodular with distinct and clearcut outline. They were generally firm to hard or cartilaginous in consistency. On histologic examination, the capsule was often incomplete, and of variable density and thickness. Considerable histologic variation was noted in all. All cases had both epithelial and mesenchymal components, but variable in proportion. The epithelial components were arranged in sheets, cords and strands. The stroma was hyalinized, myxoid, chondroid or a mixture of them (Fig. 1).

Adenoid cystic carcinoma

There were 20 cases of adenoid cystic carcinoma (ACC), the most common malignant tumor in minor salivary gland. They were usually unilobular masses, few centimeters in diameter with solid appearance and infiltrative pattern.

The tumor cells were small and dark and were arranged in anastomotic cords, cribriform and tubular pattern; they were surrounded by PAS-positive material. Perineural invasion was most often noted (Fig. 2).

Mucoepidrmoid carcinoma

Seven cases were mucoepidermoid carcinoma. These tumors were composed of two different kinds of epithelial, mucousal and squamous cells or epidermoid cells. In the low grade lesion, the majority of cells were mucous type and were arranged around cystic spaces, often mucin-filled. The high grade lesion was characterized by a predominance of squamous cell type. Intermediate cells were frequently seen in some cases (Fig. 3).

Table 1. Age distribution of minor salivary gland tumors.

Age group (years)	No. of female	No. of male	Total
0-10	–	–	–
11-20	5	2	7
21-30	4	4	8
31-40	11	11	22
41-50	14	11	25
51-60	14	5	19
61-70	7	5	12
>71	1	6	7
Total	56	44	100

Table 2. Anatomic distribution of minor salivary gland tumors.

Site	%	No. of female	No. of male
Hard palate	36	27	9
Soft palate	17	7	10
Maxillary sinus	14	10	4
Upper lip mucosa	12	3	9
Oral mucosa (cheek)	5	2	3
Gingiva	5	1	4
Nasopharynx & pharynx	4	1	3
Tongue	3	2	1
Others	4	3	1
Total	100	56	44

Table 3. Pathological distribution of minor salivary gland tumors.

Diagnosis	%	No. of female	No. of male
Total mixed tumor	69	36	33
Adenoid cystic carcinoma	20	15	5
Muco-epidermoid carcinoma	6	3	3
Malignant mixed tumors	4	2	2
Acinic cell adenocarcinoma	1	–	1
Total	100	56	44

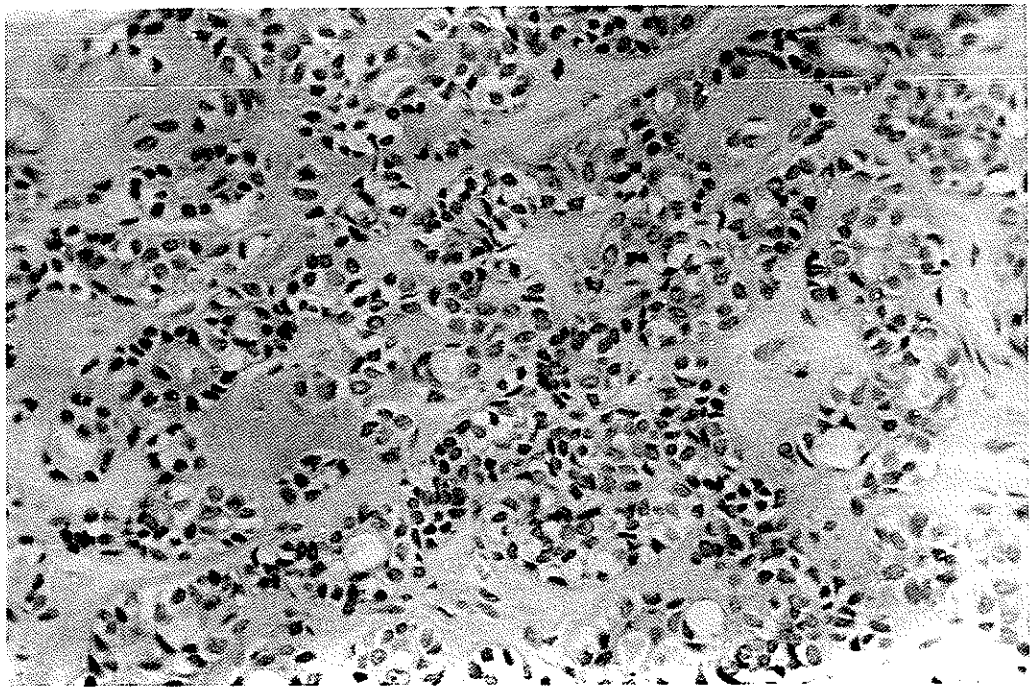

Fig. 1. Pleomorphic adenoma: tumor composed of both mesenchymal and epithelial components in various proportion (No. 52-89323 Pathol Lab, CA Inst.).

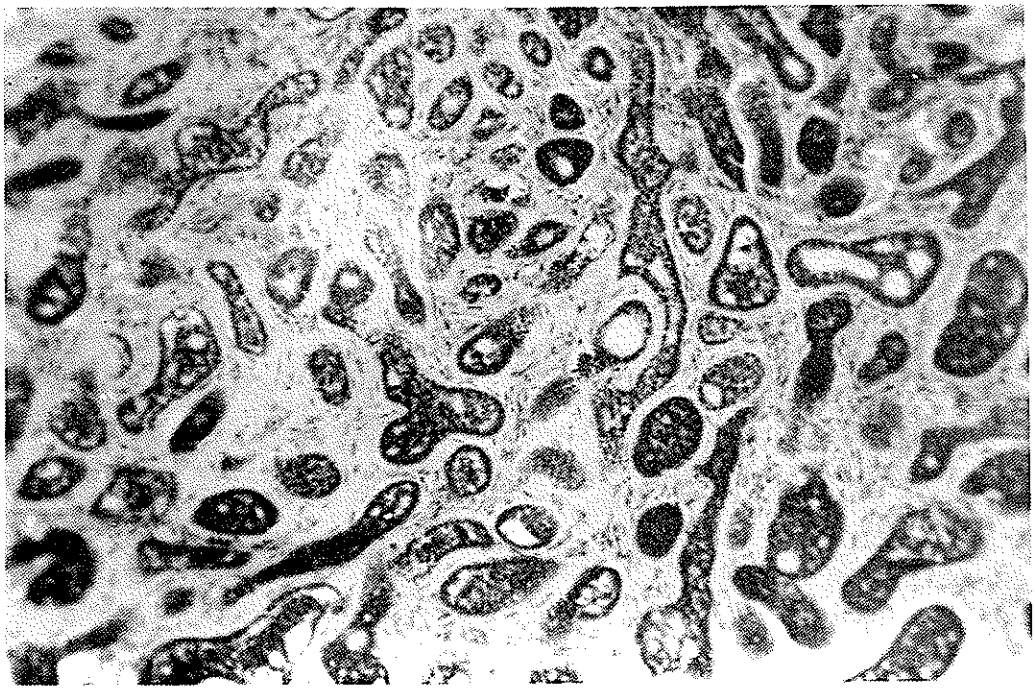

Fig. 2. Adenoid cystic carcinoma: tumor composed of small cells with dense small nuclei arranged in cribriform plates and cords (No. 66-5137 Pathol Lab, CA Inst.).

Malignant mixed tumor

Four cases were malignant mixed tumors. There were two types of malignant mixed tumor. The so-called true malignant mixed tumor presented in two forms:

1. The histologically benign but metastazing form and the heterogenous carcinoma, and sarcoma.
2. Carcinoma ex-mixed , which is the more common type of malignant mixed tumors. In this form, carcinoma may be squamous cell or adeno-carcinoma (Fig. 4).

DISCUSSION

Minor salivary gland tumors are uncommon neoplasms of the upper aerodigestive tract, forming 2% to 3% of malignant neoplasms of the aerodigestive tract and originating from minor salivary glands. These tumors are rare in children (fewer than 5%). In this series, no case below the age of 10 could be found; only 7 cases (7%) were between 11 and 19 years of age and the rate of malignancy was 31%. About half of the minor salivary gland tumors reported by other studies were malignant.

The pathologic distribution of malignant tumors was in many aspects the same as that quoted in the literature, with some differences in the anatomic sites of the lesions.

One aspect of this study was the high prevalence of minor salivary glands in female patients, with adenoid cystic carcinoma (15 females for 5 males); seven of cylindroma occurred in the 6th decade. In regards to major salivary gland tumors, the most common-occurrence in the female group was statistically significant. However, the difference between adenoid cystic carcinoma and all other groups of minor salivary tumors regarding the M/F ratio was not statistically significant ($x^2 = 3.42$).

TREATMENT

In almost all cases, the presence of slow-growing mass was the initial and chief complaint. In all cases, before treatment, a pathologically confirmed diagnosis was established. Surgical therapy (wide local resection) was the main curative method of treatment. Radiation was used as an adjuvant treatment only in some malignant neoplasms where the tumors were highly aggressive and locally advanced.

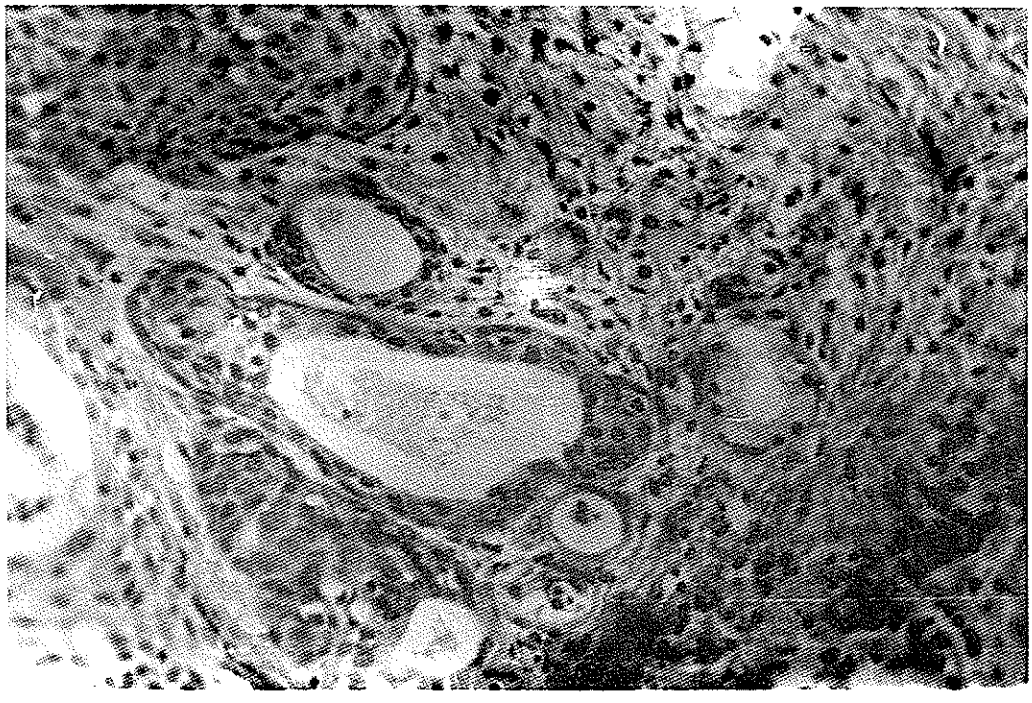

Fig. 3. Mucoepidermoid carcinoma. Low grade tumor composed of mucous secreting squmous epithelial cells, with predominance of the former (No. 56-1030 Patol. Lab, CA Inst.).

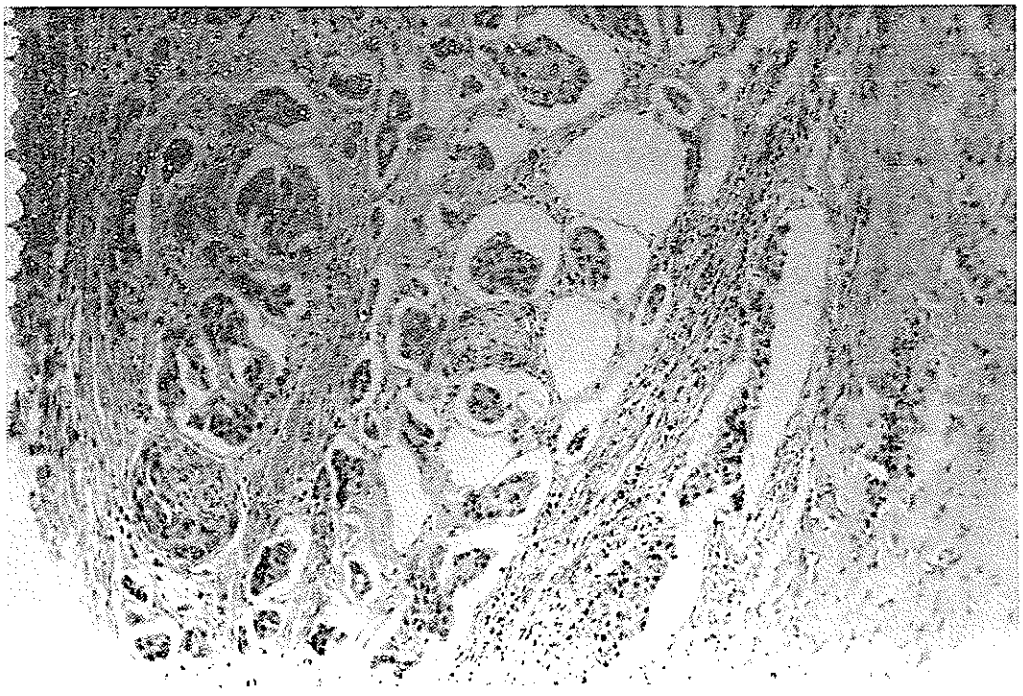

Fig. 4. Carcinoma ex-pleomorphic adenoma. Adenocarcinoma arising in pleomorphic adenoma (No. 64-2790 Pathol Lab, CA Inst.).

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