

Salivary Glands Tumors in Al-Najaf

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Summary:

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Background: Salivary gland tumors are relatively uncommon with some racial and geographical variation, about 80-85% of these tumors occur in the parotid gland, 70-80% of which are benign and the dominant benign tumor is pleomorphic adenoma. However, it is difficult to clinically differentiate between neoplastic and non-neoplastic lesions the final diagnosis depends on histopathological diagnosis.

Objectives: To provide information on the relative frequency of salivary gland neoplasms in Al-Najaf area and their relation to age and sex and comparing our result with other studies conducted previously in our country and in different geographical locations aboard.

Methods: During 5 years period from 2000-2004 included 43 cases of major salivary gland neoplasms treated surgically in Al-Najaf city hospitals and examined histopathologically. Data collected were analyzed according to the age and sex of the patients, histological types, in addition to the anatomical sites of these lesions.

Results: The study included 25 males and 18 females with a male to female ratio of (1.4:1). The patients ranged in age from (10-70) years with a mean age of (37) years for the total sample. The parotid gland was the commonest gland affected by both benign & malignant tumors (67.44%), and in (32.56%) the submandibular gland. Benign lesions constitute (74.42%) of all cases and the remaining (25.58%) were malignant. (20.3%) of the parotid neoplasms was malignant while more than one third (35.7%) of the submandibular gland tumors were malignant. Pleomorphic adenoma was the most common benign tumor seen in this study constituting 62.79%, followed by Warthin's tumor. Acinic cell tumor and mucoepidermoid carcinoma were the commonest malignant tumors.

Conclusion: The incidence of salivary glands tumors is rising in Al-Najaf area, and require an early diagnosis and treatment.

Key Words: Salivary Gland, Tumors.

Introduction:

Salivary gland tumors are relatively uncommon and constitute 1.2% of all neoplasm's, and 2-5% of head and neck tumors (2, 3)^[1]. but the incidence is rising (4)^[but]

Etiologic factors are not clear. Nutrition may be a risk factor well as irradiation for a histologically benign tumor at a young age (5),^[1] and in atomic bomb survivors of Japan (6, 7) There are also some racial and geographical variations, as an example, there is an unusually high prevalence in Eskimo and in parts of Scotland. Several other predisposing factors have been postulated including, occupation, E.B. virus etc.^[9] The parotid gland is the most common site involved (10)^[10] and about 80-85% of salivary gland tumors occur in this gland^[1, 9, 11], and 10-15 per cent occur in the submandibular gland.^[9, 11]

Salivary neoplasms considered an insidious disease with a few, if any, clinical manifestations in the early stages. In spite of that, treatment may be effective if the new tumor growth is detected early,^[12] because usually they are slowly growing and well circumscribed. Painless swelling of a salivary gland should always be considered as suspicious, especially if no signs of inflammation are present (15). Patients with a mass of rapid growth, pain, parasthesia, and facial weakness are at risk of harboring a malignancy (13).^[1]

Most salivary gland neoplasms (95 per cent) occur in adults. Benign tumors of the salivary glands occur in the age group of 30-70 years. Malignant tumors are more frequent in women than in men (^[14, 15])^[1]. The peak incidence for malignant tumors is in 6th and 7th decades.^[16]^[1]

The majority of these neoplasms are benign and most commonly arise in the parotid gland. The incidence of malignancy varies inversely with the size of the gland, thus it occurs in 25% of parotid neoplasm, in 40% of submandibular neoplasms, and in 70% of neoplasms of the sublingual and minor salivary glands.

These tumors can arise from the secretory tissue, the duct system, or from the lymphoid

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tissue.^[2]

In total, 80-90% of the tumors of the parotid gland are benign and the most common tumor being the pleomorphic adenoma.^[10]

Warthin's tumors is the second most common benign neoplasm of the parotid gland and accounts for 6 to 10 per cent of all parotid tumors, but is rarely found in other salivary glands, and is found in older men, with an increased risk in smokers.^[17]

Malignant salivary gland tumors are rare. The most common tumor site is the parotid (5)^[5] and they demonstrate a wide diversity of histopathological types and biological behavior.^[18]

Malignant salivary gland tumors are divided into two distinct subgroups:

1- Low-grade malignant tumors, for examples acinic cell carcinomas are undistinguished on clinical examination from benign neoplasm.

2- High grade tumors however are usually present with more rapidly growing and often painful swelling.^[10]

Low-grade tumors behave like benign neoplasms but may invade locally and metastasize. High-grade neoplasms are aggressive malignancies with high propensity for metastasis, and histo-pathologically resemble squamous cell carcinomas, and may require special mucin staining to differentiate them.

Squamous cell carcinoma is a rare malignancy of the salivary glands and constitutes less than 2 percent of salivary gland tumors and occurs most commonly in the submandibular gland.^[11]

A difference in the distribution of various histopathological types of malignant salivary gland tumors was observed at different time of the year in some parts of the world. Numerous pathological processes in the major salivary glands are recognized by palpation, which is essential during clinical examination. For a precise diagnosis, radiography, ultrasonography, computerized tomography, sialography, scintigraphy, fine needle aspiration biopsy, and magnetic resonance imaging are needed.

These diagnostic methods are expected, to determine the exact site of tumors, their size and extent. Moreover, FNA can be used in cytological evaluation of lesions^[12]^[1,2]

Pleomorphic adenoma has a well defined capsule; microscopically it demonstrates incomplete encapsulation and transcapsular growth with pseudopodia extensions, and this accounts for the high rate of recurrence after simple enucleation of these tumors. Pleomorphic adenomas must be excised by parotidectomy with an adequate margin of normal parotid tissue around the neoplasm to ensure complete resection. Resection is advocated because pleomorphic adenomas invariably continue to enlarge, and

and may undergo malignant transformation (at a rate of approximately 5 per cent) (11)^[11]

Surgical excision represents the standard option in the treatment of resectable tumors of both major and minor salivary glands. Neutron radiation may be a treatment option for inoperable locoregional disease. Surgery, irradiation or re-irradiation is a treatment options for local relapse,

whereas radical neck dissection is indicated for regional relapses. Metastatic disease may be either treated with radiotherapy or palliative chemotherapy, depending on the site of metastases.^[5]

Although the risk of lymphatic metastasis is low for most salivary gland malignancies, lesions that are considered high grade are those, which demonstrate perineural invasion and/or extra jugular spread and have a higher propensity for regional spread. Tumors arising in patient of advanced age also tend to have more aggressive course. Initial nodal drainage for the submandibular gland is the prevascular facial lymph node and submental nodes followed by the upper and mid jugular nodes. [19]

Relative survival differs markedly according to histopathological typing (PO.001). For parotid tumors, acinic cell carcinomas had the best prognosis with a 10-year relative survival of 88%. The corresponding figures for mucoepidermoid carcinomas, adenoidcystic carcinomas, and carcinoma ex-pleomorphic adenoma were 80, 74 and 73%.

Adenocarcinoma and undifferentiated carcinoma have the worst prognosis, with 10-year relative survival of 55 and 44%. Patients with submandibular gland cancer had similar relative survival to those with parotid cancers, besides, those with mucoepidermoid cancer and adenocarcinoma carry the worst prognosis. Age and gender had an impact on relative survival for patients with mucoepidermoid carcinoma, adenocarcinoma and undifferentiated cancer of the parotid.^[18]

Clinical prognostic factors associated with decreased survival include age > 60 years (P=0.01), male gender (P=0.002), symptoms at diagnosis (P=0.03), stage of disease (P<0.0001), type of surgery (P=0.0006), and recurrence (P=0.0001).

Histopathological prognostic factors associated with decreased survival include tumor grade (P=0.0001), tumor size > 3.0 cm (P=0.02), lymph node involvement (P=0.0004) and positive surgical margins (P=0.007). DNA FCM factors associated with decreased survival included aneuploid tumors (P=0.08) and proliferative activity (S + G2M > 5%, P=0.07). Multivariate analysis indicated that histological grade, proliferative activity, symptoms at diagnosis, clinical stage of disease and type of surgery were significant (P\$0.05)

prognostic/survival factors in the biological assessment of this neoplasm.^[20]

Aim Of Study:

To provide information on the relative frequency of salivary gland neoplasms in Al-Najaf area and their relation to age and sex with comparison of our result with those conducted from other studies during preceding period in our country and different geographical locations aboard.

Patients And Methods

A cross sectional study done during 5 years period from 2000 to end of 2004, 43 cases of salivary gland tumors were surgically treated at Hospital in Al-Najaf city.

The data of these cases were studied for age and sex and the anatomical sites distribution, histopathological examination of the specimens done and classified according to the WHO guidelines Non - neoplastic lesions e.g. Sialoadenitis, tuberculosis, stones and retention cysts were excluded.

Results

During five years period {2000 -2004}, 43 cases of salivary gland neoplasms were collected.

Patients ages ranged from {10 - 70} years, with a mean age of 37years and male to female ratio of 1.4: 1. The frequent age groups for both benign & malignant tumors ranges from 30 to 70 years for male gender while the peak age incidence for female gender of patients ranges from 20 to 50 years, {table I }.

Table I demonstrating Age and sex distribution of salivary gland tumor

Age	♂	%	♀	%	Total	Total %
10-19	2	4.65	2	4.65	4	9.3
20-29	2	4.65	7	16.28	9	20.93
30-39	6	13.95			6	13.95
40-49	5	11.63	6	13.95	11	25.58
50-59	5	11.63	3	6.98	8	18.6
60-70	5	11.63			5	11.63
Total	25	58.14	18	41.86	43	100%

Pleomorphic adenoma was the most common benign tumor seen in this study constituting 62.79%, followed by Warthin's tumor, {table II} Acinic cell tumor, mucoepidermoid are the most common malignant tumors constitute 9.3%and 6.97% respectively and lymphoma represent 4.65% followed by adenocarcinoma & squamous cell carcinoma. {Table III}

Table II Demonstrating benign pathological diagnosis according to sex

Pathological type	♂	%	♀	%	Total	%	♂:♀
Benign lesions							
Pleomorphic adenoma	15	34.88	12	27.9	27	62.79	1.25:1
Warthin tumor	3	6.97	1	2.33	4	9.3	3:1
Haemangioma			1	2.33	1	2.33	0:1
Total	18	41.86	14	32.55	32	74.42	1.29:1

Table III Demonstrating Malignant pathological diagnosis according to sex

Malignant lesions	♂	%	♀	%	Total	%	♂:♀
Acinic cell tumor	3	6.97	1	2.33	4	9.3	3:1
Mucoepidermoid Adenocarcinoma	3	6.97			3	6.97	3:0
Squamous cell carcinoma	1	2.33			1	2.33	1:0
Lymphoma			1	2.33	1	2.33	0:1
			2	4.65	2	4.65	0:2
Total	7	16.28	4	9.3	11	25.58	1.75:1

The peak incidence for pleomorphic adenoma is between second to fourth decade, while warthin tumor occurs during fifth decade. The peak incidence for acinic cell tumor, mucoepidermoid carcinoma and other malignant neoplasms appear to be during fourth to sixth decade. {Table IV}

The parotids were the principle site for salivary gland neoplasms (67.44%) and in the submandibular glands is 32.56%.

Benign lesions constitute 74.42% of all cases and the remaining 25.58% were malignant. Only 20.7% of the parotid neoplasms were malignant while more than one third (35.7%) of the submandibular gland tumors were malignant.

out of eleven malignant tumors , there were (4)cases of acinic cell tumor , (3) mucoepidermoid carcinoma , (2)lymphoma , (1)adenocarcinoma &(1) squamous cell carcinoma .

Malignant tumors were also more common in the parotids than other glands (Table V)