

DEMOGRAPHIC STUDY OF SALIVARY GLAND SWELLING

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Abstract

Introduction: Salivary glands, major and minor, comprise a complex anatomic and physiologic “organ” system-producing enzyme, lubrication, mixing agent and immune factors. Salivary gland swellings can be broadly classified into inflammatory, non-inflammatory and neoplastic swellings like calculi, benign tumours such as pleomorphic adenoma, oncocytoma, warthin’s tumour or malignant tumours like adenocarcinoma, adenoid cystic carcinoma and undifferentiated carcinoma. Connective tissue diseases like haemangioma, lymphangia, neurofibroma and other auto immune diseases like Sjogren’s syndrome, Mikulicz disease etc. Appropriate therapeutic management may be planned earlier, whether it is local excision for a benign neoplasm, radical surgery for a malignant one or any other alternate treatment. With non-neoplastic lesions, metastasis and lymph proliferative disorders, conservative management, chemotherapy or radiotherapy might be respectively preferable.

Material and Methods: 40 cases of salivary gland swelling are studied, which were analyzed and conclusion drawn. The statistics have been compared with different standard studies conducted on same subject by various authors around world. Associated medical conditions like diabetes, hypertension and anemia were managed and controlled before surgery with the patient’s advice. As a part of general work up of surgery in all patients, hemoglobin level, bleeding time, clotting time, urine, sugar albumin, microscopy, chest screening, ECG, Blood urea, serum Creatinine, RBS was estimated. Specific investigations like FNAC, X-rays of Mandible were done for all patients in the study group. Demographic profile of all the study population was recorded.

Results: Age of the patients varied from 9 years to 80 years. Average age of the patient was 40.6 years. The case of lowest age group i.e., 9 years was of non-inflammatory swelling and the case of highest age i.e., 80 years was of tumor swelling. Out of 40 cases 15(35%) cases was of male and 25(65%) cases of female. In this study, all cases presented with, symptoms of swelling (100%), 65% (26) presented with pain. 55 % (22) presented with tenderness. Three cases were with deep lobe involvement (11.4%), 19 cases of ear lobe elevation (47.5%). Facial nerve paralysis occurred in one case (2.8%).

Conclusion: Diagnosis of the salivary gland tumors must be considered in any patient presenting with salivary gland swelling. Salivary gland swelling occur more commonly in 3rd and 4th decades of life and seen most common in females.

Keywords: salivary gland, tumour, benign, malignant

Introduction

Salivary glands, major and minor, comprise a complex anatomic and physiologic “organ” system-producing enzyme, lubrication, mixing agent and immune factors. They may fall prey to a host of pathologic conditions including infection, immune disorder, hypertrophy and atrophy, systemic disease and “neoplastic both benign and malignant”ⁱ.

Salivary gland swellings can be broadly classified into inflammatory, non-inflammatory and neoplastic swellings like calculi, benign tumours such as pleomorphic adenoma, oncocytoma, warthin’s tumour or malignant tumours like adenocarcinoma, adenoid cystic carcinoma and undifferentiated carcinoma. Connective tissue diseases like haemangioma, lymphangioma, neurofibroma and

other auto immune diseases like Sjogren’s syndrome, Mikulicz disease etcⁱⁱ.

About 64-80% of all primary epithelial tumours occur in parotid glands, 7-11% in the submandibular glands, less than 1% in the sublingual glands and 9-23% in the minor glands¹. 15-30% of tumours in the parotid gland are malignant in contrast to about 40% in the submandibular gland, 50% in the minor salivary gland and 70-90% of sublingual glandsⁱⁱⁱ. The ratio of malignant to benign tumours is greatest (>2.3:1) in the sublingual gland, tongue, floor of the mouth and retro-molar area^{iv}. The likelihood, then of a salivary gland tumours being malignant is more or less inversely proportional to the size of the gland^{v,vi}.

These tumours usually occur in adults with a female predominance, but about 5% occur in children less than

16years^{vii}. WT are more common in males^{5, 6}. Benign tumours most often occur in younger individuals, the malignant ones tend to appear in older age group.

Appropriate therapeutic management may be planned earlier, whether it is local excision for a benign neoplasm, radical surgery for a malignant one or any other alternate treatment. With non-neoplastic lesions, metastasis and lymph proliferative disorders, conservative management, chemotherapy or radiotherapy might be respectively preferable^{viii}. The biological behavior of salivary glands was summarized by Ackerman Del Regato is "The usual tumor of salivary glands is a tumor in which the benign variant is less benign than the usual benign tumor and the malignant variant is less malignant than the usual malignant tumors"^{ix}.

Present study was carried out to study the age and sex distribution among patients presenting with salivary gland swellings.

MATERIAL AND METHODS:

This prospective study of consecutive cases of salivary gland swellings is based on 40 cases admitted in various surgical units in J.J.M. Medical College and Chigateri District hospital, Davangere, during the period from May 2009 to July 2011. 40 cases of salivary gland swelling are studied, which were analyzed and conclusion drawn. The statistics have been compared with different standard studies conducted on same subject by various authors around world.

Inclusion criteria:

- All patients admitted to surgical wards of J.J.M. Medical College and Chigateri District hospital with salivary gland swellings due to obstructions of the salivary duct and neoplasia.
- Patients who are willing for investigation and treatment.

Exclusion criteria:

- All salivary gland swellings arising as a result of congenital conditions.
- Salivary gland swellings arising as a result of inflammation. (Eg. Mumps, Parotitis).
- Salivary swellings associated with systemic diseases. (Sjogren's syndrome).

Associated medical conditions like diabetes, hypertension and anemia were managed and controlled before surgery with the patient's advice. As a part of general work up of surgery in all patients, hemoglobin level, bleeding time, clotting time, urine, sugar albumin, microscopy, chest screening, ECG, Blood urea, serum Creatinine, RBS was

estimated. Specific investigations like FNAC, X-rays of Mandible were done for all patients in the study group.

Demographic profile of all the study population was recorded.

Results:

Table 1: Age Incidence of Salivary Gland Swellings

Age in Years	No. of Patients	Percentage
0-10	1	2.85
11-20	5	14.28
21-30	4	11.42
31-40	15	28.57
41-50	9	11.42
51-60	6	17.14
61-80	5	14.28
Total	40	100.0

In our study, age of the patients varied from 9 years to 80 years. Average age of the patient was 40.6 years. The case of lowest age group i.e., 9 years was of non inflammatory swelling and the case of highest age i.e., 80 years was of tumor swelling.

Table 2: Sex Incidence

Sex	No. of Patients	Percentage
Male	15	35.0
Female	25	65.0

In this study of, salivary gland swelling due to various causes, out of 40 cases 15(35%) cases was of male and 25(65%) cases of female.

Table 3: Mode of Clinical Presentation

Mode	No. of Cases	Percentage
Swelling	40	100.0
Pain	26	65.0
Fever	8	20.0
Increased salivation	11	27.5
Tenderness	22	55.0
Fixity of swelling	4	10.0
Ear lobe elevation	19	47.5
Deep lobe involvement	3	7.5
Facial nerve paralysis	1	2.8

In this study, all cases presented with, symptoms of swelling (100%), 65% (26) presented with pain. 55 % (22) presented with tenderness. Three cases were with deep lobe involvement (11.4%), 19 cases of ear lobe elevation (47.5%). Facial nerve paralysis occurred in one case (2.8%).

Discussion:

History of salivary gland disease date backs to times of Hippocrates. Although parotid gland has been surgically approached on selective basis for at least the last 300years, an understanding of parotid anatomy, especially in relation to the facial nerve, was not made clear until early part of 20 century. Earliest reports of parotid

extirpative surgery were recorded in Dutch literature of late 1600^x

Salivary gland tumors incidence varies in the world from approximately 0.4–13.5/100,000 people annually. Salivary gland neoplasms are observed in <3% of all the neoplasms occurring in the head-and-neck region which is quite rare. Authors have studied the incidence rate of salivary gland tumors. Spiro *et al.*^{xi} and Leegard and Lindeman^{xii} gave incidences of 6.5% and 2%, respectively, for all head-and-neck tumors. According to Jade Uchendu *et al.*, salivary gland tumors accounted for 1.43% of all neoplasm seen at the histopathology unit of the University of Benin Teaching Hospital^{xiii}.

Potdar *et al.*^{xiv} *et al* in 1969 done a study for 10 years in salivary gland tumors and observed that no. of cases per year were 18 and total no of tumors were 188. Gupta *et al.*^{xv} in 1975 observed 113 salivary tumors in his 5 years study. In the present study over a period of 2 years 25 cases were observed with about 13 cases per year. This our incidence correlates with the study by Khazanchi *et al.*^{xvi} (1988)

In our series of salivary gland tumors out of 25 cases, 24 cases were benign with mean age 45 and one case was malignant of 80 years age. Potdar *et al.*¹⁴ observed average age was 40 years in benign and 49 years in malignant cases.

In our study of 40 cases of salivary gland swelling, shows that, surgery is the treatment of choice in all cases of salivary gland swellings. FNAC plays an important role in the diagnosis of salivary gland tumors and accuracy rate was 100% in our series.

Conclusion:

Diagnosis of the salivary gland tumors must be considered in any patient presenting with salivary gland swelling. Salivary gland swelling occur more commonly in 3rd and 4th decades of life and seen most common in females

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