|| ISSN(online): 2589-8698 || ISSN(print): 2589-868X ||
International Journal of Medical and Biomedical Studies
Available Online at www.ijmbs.info
PubMed (National Library of Medicine ID: 101738825)
Index Copernicus Value 2018: 75.71
Original Research Article
Volume 4, Issue 2; February: 2020; Page No. 303-305

CLINICOPATHOLOGICAL STUDY OF SALIVARY GLAND SWELLING

Dr. Akshay Akulwar[1], Dr. Akshay Bavikatte[2]
[1]Assistant Professor, Mahatma Gandhi Institute of Medical Sciences Sewagram Wardha, Maharashtra.
[2]P.G. J.J.M. Medical College Davangere Karnataka.

Article Info: Received 10 January 2020; Accepted 02 February 2020
DOI: https://doi.org/10.32553/ijmbs.v4i2.1031
Corresponding author: Dr. Akshay Bavikatte
Conflict of interest: No conflict of interest.

Abstract

Introduction:

Although the salivary, sweat, apocrine, and mammary glands all have similar phylogeny and cellular phenotypes, many lesions are unique to the salivary glands. Various studies around the world reported incidence for all salivary glands tumors to be between 0.4 and 13.5 cases/100,000. Salivary gland swellings can be broadly classified into inflammatory, non-inflammatory and neoplastic swellings. Acute inflammatory conditions generally can be diagnosed by history and physical examination alone, whereas chronic inflammatory diseases and granulomatous disorders require supplemental diagnostic information including lab tests, imaging studies and biopsy. Accurate pathological diagnosis is necessary for proper management of neoplastic disorders. In this part of the world, the problem of these tumours is more troublesome in management because of their late presentation due to poor economic condition and lack of awareness of health among the general population. It is important to note that diffuse swellings usually signify disease of inflammatory nature. Discrete swelling within the gland usually indicates neoplasia and rarely replace entire gland until very late. Submandibular gland tumours are twice as likely to be malignant, compared to parotid. Sublingual gland tumours are unusual, 80% are malignant.

Material and Methods: Patients included were those admitted to surgical wards with salivary gland swellings due to obstructions of the salivary duct and neoplasia and were willing to participate in the study for investigation and treatment. 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. After evaluation of the swellings by clinical examination and by specific investigations, a surgical plan was formulated. The final decision was taken per operatively by the surgeon. The required specimen was sent for histopathologocal examinations. Different modalities of treatment adopted in this study were, surgery or surgery and post-operative radiotherapy.

Results: Age of the patients varied from 9 years to 80 years. Average age of the patient was 40.6 years. Out of 40 cases 15(35%) cases was of male and 25(65%) cases of female. 62.5% (25 cases) were found in the parotid gland, 30% cases (12) in submandibular gland and 7.5% cases (3) in the sublingual gland. Out of 40 cases, neoplastic lesions of 65.0 %(25 cases) and non-inflammatory non neoplastic lesions of 37.5% (15 cases) were seen. Out of 25 salivary gland

Keywords: SALIVARY GLAND, TUMOUR, MALIGNANT, BENIGN, FNAC, HISTOPATHOLOGY

Introduction

Of all the tissues in the human body, the salivary glands have the most histologically heterogeneous group of tumors and the greatest diversity of morphologic features among their cells and tissues. Although the salivary, sweat, apocrine, and mammary glands all have similar phylogeny and cellular phenotypes, many lesions are unique to the salivary glands[i]. Various studies around the world reported incidence for all salivary glands tumors to be between 0.4 and 13.5 cases/100,000. Salivary gland swellings can be broadly classified into inflammatory, non- inflammatory and neoplastic swellings[ii]. According to different studies, 50% of salivary gland tumors are benign and half of them occurred in major salivary glands with the most common site in the parotid gland and is about 64-80%[iii].

Acute inflammatory conditions generally can be diagnosed by history and physical examination alone, whereas chronic inflammatory diseases and granulomatous disorders require supplemental diagnostic information including lab tests, imaging studies and biopsy. Accurate pathological diagnosis is necessary for proper management of neoplastic disorders[iv]. In studies by Ansari MH [v] in Iran, de Oliveira *et al*.[vi] in Brazil and Lukšić *et al*.[vii] in Croatia the mean age of affected patients have been reported 45-55 years.

The incidence of parotid tumours is in-between 1-3 / 1lakh/ year, approximately 75-85% of the salivary gland neoplasm occur in parotid of which 70 - 80% is benign and 80% of the benign tumours are pleomorphic adenoma[8]. 80 % of parotid tumours are located in the superficial lobe. Deep lobe neoplasms are considered to have a greater incidence of malignancy. They exhibit a wide variety of behavior and widely diversified histology. In this part of the world, the problem of these tumours is more troublesome in management because of their late presentation due to poor economic condition and lack of awareness of health among the general population. It is important to note that diffuse swellings usually signify disease of inflammatory nature. Discrete swelling within the gland usually indicates neoplasia and rarely replace entire gland until very late. Submandibular gland tumours are twice as likely to be malignant, compared to parotid. Sublingual gland tumours are unusual, 80% are malignant[viii].

With this view present study was designed to study the accuracy of FNAC in the diagnosis of salivary gland swellings

Material and Methods:

Present study was a prospective study to determine the pathology of the salivary gland swellings. A total of 40 consecutive cases of salivary gland swellings were included in the study. This study was done from May 2009 to July 2011.

Patients included were those 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 and were willing to participate in the study for investigation and treatment.

Patients were excluded if: All salivary gland swellings arising as a result of congenital conditions, Salivary gland swellings arising as a result of inflammation. (ex. Mumps, Parotitis), Salivary swellings associated with systemic diseases.

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.

After evaluation of the swellings by clinical examination and by specific investigations, a surgical plan was formulated. The final decision was taken per operatively by the surgeon. The required specimen was sent for histopathological examinations. Different modalities of treatment adopted in this study were, surgery or surgery and post-operative radiotherapy.

Results:

Total number of admissions to the Department of General Surgery during study period were 14863, 40 cases of salivary gland swellings were admitted during June 2009 to May 2011. This constitutes 0.27% of total admissions. In our study, age of the patients varied from 9 years to 80 years. Average age of the patient was 40.6 years. Out of 40 cases 15(35%) cases was of male and 25(65%) cases of female.

Table 1: Sex Incidence

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

Table 2: Site for Various Salivary Gland Swelling

No. of cases	Parotid	Submandibular	Sublingual
40	25 (62.5%)	12(30.0%)	3(7.5%)

In our study, 62.5% (25 cases) were found in the parotid gland, 30% cases (12) in submandibular gland and 7.5% cases (3) in the sublingual gland.

Table 3: Various Causes of Salivary Swelling

Lesions	No. of Cases	Percentage
Noninflammatory non neoplastic	15	37.5
Neoplastic	25	65.0
Total	40	100.0

Out of 40 cases, neoplastic lesions of 65.0 %(25 cases) and non-inflammatory non neoplastic lesions of 37.5% (15 cases) were seen.

Table 4: Incidence of Benign and Malignant Salivary Gland Tumours

Lesions	No. of Cases	Percentage
Benign	24	96.1
Malignant	1	2.5

In this study, out of 25 salivary tumors, 96.1% were benign and 2.5% malignant.

In our study, out of 25 salivary gland tumors, pleomorphic adenoma was 84.6% (21), 11.53% (3) of Warthin tumour and One case (3.8%) of adenoid cystic carcinoma.

Table 5: Correlation of FNAC and Histopathology

Lesions	No. of Patients	FNAC (%)	BIOPSY (%)
Pleomorphic adenoma	22	100	100
Warthin tumour	3	100	100
Adenoid cystic Ca.	1	-	-

In our study, the accuracy of FNAC was 100% in case of benign salivary gland tumours. One case which was

diagnosed by FNAC as adenoid cystic carcinoma was referred to higher center for the management.

Discussion:

Tumors of the salivary glands constitute an important area in the field of oral and maxillofacial surgery. A number of authors have reported their findings on salivary gland tumours. Some studies have been limited to only the major glands or have not included all the minor salivary gland sites. In addition, the ever-evolving classification system makes an evaluation of some older studies difficult, especially when we try to compare them with more recent analyses.

Out of 40 cases in our study 15(35%) cases were male and 25(65%) cases werefemale. This finding was in accordance with the study by Ansari[5] in Iran, Otoh *et al*[ix]. in Nigeria. In our study, incidence percentage of sialolithiasis i.e., 12 cases were found in submandibular gland which co-relates with Pizzirani et al[x] in 1985 and J. Lustmann et al[xi] in 1990.

In the present study 97.5% tumours were benign and 2.5% were malignant. Renehan et al[xii] 1996 observed 80% benign and 0% malignant tumour in his study while Skolnik et al[xiii] in 1977 observed 59.40% benign and 30.60% malignant tumour.In our study, all the salivary gland tumors were observed in parotid gland. Comparative study was in accordance to Renehan et al[12]. Tumours of sublingual glands he observed 91% tumours in parotid gland. In this study Tumours of sublingual gland are extremely rare and no cases were recorded with submandibular gland, because of, small number of cases and short study period.

Table 6: FNAC Comparison with Pathologic Diagnosis in Different Series

Series	Benign	Malignant
Frable and Frable 1982[134]	91%	92%
Spiro RH et al., 1974[135]	98%	93%
Present Study	100%	100%

In our study of 40 cases, FNAC was in accordance with the other author's series shown in above table.

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.

Conclusion:

Sialolithiasis is the predominant non inflammatory swelling. Salivary gland tumors occur more commonly in the parotid gland, most often benign, pleomorphic adenoma constitute majority of all neoplasm. History and physical examination complement FNAC and help in diagnosis. FNAC has good accuracy in diagnosing salivary gland swellings

References:

1. Ellis GL, Auclair PL. Tumors of Salivary Glands. Armed Forces Institute of Pathology. Washington DC; 1996. p. 135-371. ISBN 1881041263
2. Cummings CW. "Otolaryngology-Head and neck surgery". Chapter 56-63: 2nd edition, Vol. 2, Mosby, 1993
3. Eneroth CM. Salivary gland tumors in the parotid gland, submandibular gland, and the palate region. Cancer. 1971 Jun; 27(6):1415-8.
4. Bhaskar SN, Bolden TE, Wienmam JP. Experimental obstructive adenitis in mouse. J Dent Res 1956; 35: 852-862
5. Ansari MH.Salivary gland tumors in an Iranian population: a retrospective study of 130 cases. J Oral Maxillofac Surg. 2007 Nov; 65(11):2187-94.
6. de Oliveira FA, Duarte EC, Taveira CT, Máximo AA, de Aquino EC, Alencar Rde C, Vencio EF. Salivary gland tumor: a review of 599 cases in a Brazilian population.Head Neck Pathol. 2009 Dec; 3(4):271-5.
7. Lukšić I, Virag M, Manojlović S, Macan D. sSalivary gland tumours: 25 years of experience from a single institution in Croatia. J Craniomaxillofac Surg. 2012 Apr; 40(3):e75-81.
8. Cohen MB, Fisher PE, Holly EA., Ljung BM, Lowhagen T, Bottles K. Fine needle aspiration biopsy diagnosis of Mucoepidermoid Carcinoma-statistical analysis. Acta Cytol 1990; 1 (34): 43-49
9. Otoh EC, Johnson NW, Olasoji H, Danfillo IS, Adeleke OA. Salivary gland neoplasms in Maiduguri, north-eastern Nigeria. Oral Dis. 2005 Nov; 11(6):386-91.
10. Pizzirani C et al. Considerazioni, clinico statistiche SU 102 Casi Di Calcolosi Salivare. Mondo Odontostomatol 1985; 27: 41-51
11. Lustmann J et al. A survey on 245 patients and a review of the literature. Int J Oral Maxillotfal Surg 1990; 19: 135-138s
12. Renehan A et al. Long term follow up of over 1000 patients with salivary gland tumours treated in single centre. Br J Surg 1996; 83: 1750-1754
13. Skolnik EM. Tumours of major salivary glands. Laryngoscope 1977; 84: 843- 61.