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Incidence of Salivary Gland Tumors: Bundelkhand Region

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Abstract
Aim: To Study the incidence of Salivary Gland Tumors In Bundelkhand Region.
Material And Method: The Tissue Material For The Study Was Obtained From Various Out-Patients And In-Patients Admitted In ENT And Surgery Department In MLB Medical College , Jhansi From January 2014 To July 2015.A Total Of 21 Cases Were Collected. Results: Data of 21 cases of SGTs were recorded, of which 14 (66.6%) cases were classified as benign tumors and 07 (33.34%) cases as malignant tumors. Male to female ratio (M/F) and the mean age of patients were 1:1.3 and 45 years, respectively. Pleomorphic adenoma (71.4%) was the most common benign neoplasms. Mucoepidermoid carcinoma(42.8%) was the most common malignant salivary neoplasm overall but adenoid cystic carcinoma is the commonest minor salivary gland tumor. Conclusion: Our Results Correlate Well With Previously Published Clinicopathological Data On Comparable Studies.

Keywords: *SGTs-Salivary Gland Tumors*

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I. Introduction

Salivary glands tumours although mostly observed among adults but may occur in all ages and both sexes. Parotid gland is affected more frequently than the submandibular and sublingual gland is affected rarely. Lesions of salivary glands especially tumours, because of their controversial features and unpredictable clinical behavior continue to hold the interest of many clinicians and pathologist because they pose a problem in diagnosis, classification, prognosis and therapy. In malnourished countries these tumours are thought to be more common, unusually located and more malignant in behavior than their counterpart elsewhere. ***(Marsden 1951, Davies et al, 1964)***

Presently the incidence of non- neoplastic and neoplastic lesions of the salivary glands is increasing in many regions of our country.

II. Materials & Methods

This Study Was Conducted in MLB Medical College Jhansi(UP) From January 2014 To July 2015 . The Tissue Material For The Study Was Obtained From Various Out-Patients And In-Patients Admitted In ENT And Surgery Department Patients With Salivary gland swellings.A Total of 21 cases were collected. All specimens were fixed in 10% formalin, sent to pathology department then processed into paraffin-embedded sections and stained with hematoxylin and eosin. Histological Grading Of Tumours Is Performed Following The WHO Criteria For SGTs. From These Selected Patients, The Data Pertaining To Age At Diagnosis, Sex, Tumor Location, Lymph Nodal Status And Assessment By Cytology (Wherever Available) Is Noted In Particular.

III. Results

Of The 21 Cases Of Salivary Gland Tumors 09/21 (42.85%) Males And 12/21 (57.15%) Females. The Present Study Showed A Female Preponderance Of Salivary gland tumors With Male: Female Ratio As 1:1.3. The Age Group Ranged From 11-70 Years With A Mean Age Of 45 Years. The Peak Incidence Was Found In The Age Group Of 51-60 Years (42.87%).

The frequencies of salivary gland neoplasms according to age is shown in Table 1

Table 1-Age wise distribution Of Salivary Gland Tumors

AGE IN YEARS	BENIGN TUMOURS		MALIGNANT TUMOURS	
	No.of cases	Percentage	No. of cases	Percentage
0 – 10 yrs	00	00	00	00
11 – 20 yrs	03	21.42%	00	00
21 – 30 yrs	01	7.15%	00	00
31 – 40 yrs	05	35.73%	01	14.28%
41 – 50 yrs	02	14.28%	01	14.28%
51 – 60 yrs	03	21.42%	03	42.87%
61 – 70 yrs	00	00	02	28.57%
71 – 80 yrs	00	00	00	00
Total (21)	14	66.66%	07	33.34%

Out of 21 salivary gland neoplasms, 14 (66.6%) cases were classified as benign tumors and 07 (33.3%) cases as malignant tumors. Pleomorphic adenoma was the most common benign tumor (71.4%), and adenoid cystic carcinoma was the most common malignant tumor (28.6%) in minor salivary glands but overall mucoepidermoid was commonest. The frequencies of salivary gland neoplasms according to histopathological features are shown in Table 2 & Table 3.

Table 2: Distribution of Benign Tumors in Salivary Glands

BENIGN SGTs	NO. OF CASES	PERCENTAGE
Pleomorphic adenoma	10	71.44%
Monomorphic adenoma	02	14.28%
Warthin tumour	01	07.14%
Hemangioma	01	07.14%
Total	14	100

Table 3: Distribution of Malignant Tumors in Salivary Glands

Malignant SGTs	NO. OF CASES	PERCENTAGE
Mucoepidermoid carcinoma	03	42.88%
Carcinoma expleomorphic adenoma	01	14.28%
Acinic cell carcinoma	01	14.28%
Adenoidcystic carcinoma	02	28.56%
Total	07	100%

Table 4: Age wise distribution of Tumors in Salivary Glands

AGE IN YEARS	BENIGN TUMOURS		MALIGNANT TUMOURS	
	No.of cases	Percentage	No. of cases	Percentage
0 – 10 yrs	00	00	00	00
11 – 20 yrs	03	21.42%	00	00
21 – 30 yrs	01	7.15%	00	00
31 – 40 yrs	05	35.73%	01	14.28%
41 – 50 yrs	02	14.28%	01	14.28%
51 – 60 yrs	03	21.42%	03	42.87%
61 – 70 yrs	00	00	02	28.57%
71 – 80 yrs	00	00	00	00
Total (21)	14	66.66%	07	33.34 %

Table 4 shows the age incidence of salivary gland tumours. Tumors of the salivary gland shows a very wide age range from early age to advanced age. The youngest patient in this series was 18 years while the oldest was 64 years. The peak incidence of benign tumour was in the age range from 31-40 years while the malignant tumours had peak incidence in the age range from 51-70 years.
The ratio of benign to malignant tumours appears to decrease with age, the overall ratio of benign to malignant tumour was 2:1.

Most of the tumors were located in the major salivary glands (81%) among which parotid was the most common site followed by submandibular gland. Table 5

Table 5: Location Wise Distribution Of Salivary Gland Tumours

LOCATION	TOTAL		BENIGN		MALIGNANT	
	No.	%	No.	%	No.	%
Parotid	12	57.1%	09	64.2%	03	42.8%
Submandibular	05	23.8%	04	28.5%	01	14.2%
Sublingual	00	00%	00	00%	00	00%
Minor salivary glands	04	19%	01	07.3%	03	42.8%
Total	21		14		07	

IV. Discussion

Although salivary glands are simple structurally , their ducts and acini give rise to considerable number of histologically distinct tumour and various nonneoplastic lesion. A total of 21 salivary gland tumours were taken into account.
Out of 21 cases, benign tumours comprising 66.66% and malignant tumours 33.34% of total salivary gland tumours.
Though tumours from salivary gland can occur at any age. We observed maximum incidence of salivary neoplasm between fourth and fifth decade of life. The present study is within the range as observed in the studies by **Munjal et al (1971) and Fenn et al (1982).**
In the present study, there was a slight female predominance. The overall male to female ratio was 1:1.33.This observation of ours is compatible with study by **Healy et al (1970).**
In the present study, the incidence of benign tumour was 66.66% (14/21) which was comparable with the studies done by **Singh et al (1968) 61.1% and Dunn et al (1976) 69.2%.**
We reported the incidence of malignant tumours to be 33.34% which coincides with incidence reported by **Dwyer et al (1968) 39.2% and Dunn et al (1976) 30.8%.**
In this series 23.8% of all salivary tumours are arising from submandibular gland which is comparable to **Agarwal et al (1987)** 21.6%. But studies by **Dutta and Gupta et al (1965)** 15.50%. **Munjal e t al (1966) 10% and Healy et al (1970)** 7.1% showed lower figures. Tumour arising from sublingual salivary gland was not encountered in his study, this study which agrees with report of **Eveson and Cawson et al (1984)** who mentioned it a rare site for primary tumours. However **Frazell et al (1954)** has mentioned 1% and **Healy et al (1970)** 2% tumours arising from sublingual salivary gland.
This variation could be because of small study size in our series as compared to others and also due to less number of patients attending the hospital, as Bundelkhand region is a backward region where literacy rate is very low.
Minor salivary glands have contributed 19% of all salivary gland tumours in this series which is higher much higher than previous reports of **Dutta et al (1955)** 5.3% and **Munjal et al (1966)** 7.5% but smaller than the reports of **Fu et al (1977)** 30%.
In this study, the parotid gland was the most common site for salivary gland tumours. It comprised of 57.1% of all tumors followed by submandibular 23.8% and minor salivary gland 19%. No tumor was encountered in sublingual salivary gland.
Pleomorphic adenoma (71.4%) was the most common benign neoplasms. Mucoepidermoid carcinoma(42.8%) was the most common malignant salivary neoplasm overall but adenoid cystic carcinoma is the commonest minor salivary gland tumor.

V. Conclusion

The present study was a single institution study analysing only 21 SGTs which was a small sample size and and the histopathological correlation could be improved by taking large number of cases for analysis.

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