VOLUME-8, ISSUE-7, JULY-2019 • PRINT ISSN No. 2277 - 8160

Original Research Paper

Pathology

STUDY OF BIOPSIED ORAL AND MAXILLOFACIAL LESIONS IN RANCHI, JHARKHAND

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ABSTRACT

Aim: This study was carried out to study the occurrence of different lesions in oral and maxillofacial region (OML) which were subjected to biopsies in the city of Ranchi, Jharkhand, India.

Materials and methods: This was a retrospective study conducted based on the data available regarding the age, sex, location, size of the biopsy and histopathological nature of the lesion i.e. whether the lesions were benign, malignant or premalignant.

Results: A total number of 118 cases were studied of which 70 were males and 48 were females. The youngest patient was 5 years old whereas the oldest was 82 years old. Age group of 51-60 years had the maximum number of patients (24) followed by 61-70 years group (20). Most of the biopsies were small biopsies with average size of the biopsies being 1.72cm in largest dimension. Most number of biopsies were from gingiva (27) followed by buccal mucosa (23). Benign lesions constituted 61% of cases whereas premalignant and malignant lesions accounted for 6.7% and 32.2% respectively. Squamous cell carcinoma was the most prevalent malignant tumor (34 cases) affecting mostly the age group 51-60 years (12) followed by 61-70 years (10 cases). Most of the Squamous cell carcinomas affected the buccal mucosa followed by gingiva. Also well differentiated carcinomas were more prevalent compared to moderately and poorly differentiated carcinomas. 4 cases of non-squamous cell malignancies were also part of this study.

Conclusions: Oral and maxillofacial region is quite prone to malignancy. Squamous cell carcinoma are the most common malignancy in this region. This usually affects elderly but relatively younger group (31-40years) is also affected in high proportions and this is a quite disturbing trend.

KEYWORDS : Oral and maxillofacial lesions, oral cancers, squamous cell carcinoma, odontogenic tumors.

INTRODUCTION

Oral and maxillofacial (OML) region is affected by variety of diseases and many of them are subjected to biopsy to know the diagnosis and to strategise the treatment. Also understanding the prevalence of different diseases helps the administrators to formulate appropriate treatment and preventive strategies by identifying the possible aetiological factors. Ranchi being the capital city of Jharkhand, draws patients from entire state and neighbouring parts of other states like Chhattisgarh, Orissa, West Bengal, Bihar, Uttar Pradesh for treatment. Oral cancers are leading cause of death due to malignancy in our country. Also many premalignant lesions are known to occur in this part of body. This study was carried out to understand the different types of OMLs which are prevalent in this region and to understand the scope of treatment available here and its limitations.

MATERIALS AND METHODS

This was a retrospective study conducted based on the data available regarding the age, sex, location, size of the biopsy and histopathological nature of the lesion i.e. whether the lesions were benign, malignant or premalignant. The histopathological grading of squamous cell carcinoma was based on Broader's grading system. All the available requisition forms and gross details of specimens, collected from maxillofacial region, along with histopathological descriptions were collected from the records retrospectively.

RESULTS

118 patients were part of this study. 70 male and 48 females ranging from 5 years to 82 years were included. Most number of cases were found in the age group 51-60 years (24 patients) followed by the age group 61-70 years (20 patients). Gingiva (27 cases) was the most common biopsied site followed by buccal mucosa (23 cases). Most of the biopsies were small biopsies and average size of the biopsies was 1.72 cm in largest dimension.

Benign lesions constituted 61% of cases whereas premalig nant and malignant lesions accounted for 6.7% and 32.2% respectively. A total of 38 malignancies were found of which 26 were males. Squamous cell carcinoma was the most prevalent malignant tumor (34 cases) affecting mostly the age group 51-60 years (12) followed by 61-70 years (10 cases). Most of the Squamous cell carcinomas affected the buccal mucosa followed by gingiva. Also well differentiated carcinomas (26) were more prevalent compared to moderately (06) and poorly differentiated (02) carcinomas. 4 cases of other malignancies were also part of this study. One case each of Malignant melanoma, Adenoid cystic carcinoma, Sinonasal carcinoma and Veruccous carcinomas were seen. Pyogenic granulomas, Papillomas and fibroepithelial polyps were the commomner benign lesions i.e. 7,6 and 5 cases respectively. 4 cases each of Radicular cysts, Lichen planus and pseudoepitheliomatous hyperplasia were also seen. Eight cases of premalignant lesions like Dysplasia, Leukoplakia and Lichen planus were also found in the present study.

DIAGNOSIS	NO OF CASES
SCC	34

PYOGENIC GRANULOMA	7
PAPILLOMA	6
FIBROEPITHELIAL POLYP	5
RADICULAR CYST	4
LICHEN PLANUS	4
PSEUDOEPITHELIOMATOUS HYPERPLASIA	4
ACANTHOTIC SQUAMOUS LAYERS	3
GRANULATION TISSUES	3
PLEOMORPHIC ADENOMA	3
AMELOBLASTOMA	3
VERUCCOUS HYPERPLASIA	2
LIPOMA	2
LEUKOPLAKIA	2
SALIVARY GLAND HYPERPLASIA	2
DENTIGEROUS CYST	2
HEMANGIOMA	2
PREMORDIAL CYST	2
DYSPLASIA	2
CHRONIC INFLAMMATORY LESION	2
VERRUCOUS CARCINOMA	1
SINONASAL CARCINOMA	1
KERATOCYST	1
ODONTOGENIC KERATOCYST	1
FIBROLIPOMA	1
EPIDERMOID CYST	1
MAXILLARY MELANOMA	1
PERIPHERAL GRANULOMA	1
MYOEPITHELIOMA	1
MUCOCELE	1
AMELOBLASTIC ODONTOMA	1
EPULIS	1
CHRONIC SIALADENITIS	1
TRAUMATIC ULCER	1
FIBROMA	1
ADENOMATOID ODONTOGENIC TUMOR	1
SIALOLITH	1
DERMATOFIBROMA	1
GRANULOMATOUS LESION	1
GRANULOMATOUS LESION WITH NECROSIS	1
GRANULAR CELL TUMOR	1
NEVUS	1

SITES	CASES
GINGIVA	27
BUCCAL MUCOSA	23
TONGUE	9
VESTIBULE	8
MANDIBLE	6
MAXILLARY SINUS	4
PAROTID	4
PALATE	3
FLOOR OF MOUTH	3

AGE GROUP	NO. OF CASES
0-10	5
11-20	16
21-30	19
31-40	17
41-50	14
51-60	24
61-70	20
71-80	1
81-90	2
TOTAL	118

AGE(YEARS)	WELL DIFF	MOD DIFF	POORLY DIFF
0-10	-	-	-
11-20	1	-	-
21-30	-	-	-
31-40	06	01	-
41-50	04	01	-
51-60	08	02	-
61-70	04	02	-
71-80	02	-	02
81-90	01	-	-
TOTAL	26	06	02

SCC

LOCATION	NUMBER
GINGIVA	12
BUCCAL MUCOSA	1s
VESTIBULE	03
TONGUE	02
FLOOR OF MOUTH	02
MAXILLARY SINUS	01

AGE-WISE ALL MALIGNANT TUMORS

AGE(YEARS)	MALE	FEMALE	TOTAL
0-10	-	-	-
11-20	-	1	1
21-30	-	-	-
31-40	06	01	07
41-50	04	02	06
51-60	08	04	12
61-70	07	03	10
71-80	-	01	01
81-90	01	-	01
TOTAL	26	12	38

DISCUSSION

Oral and maxillofacial lesions are subjected to biopsy usually as a therapeutic or for diagnostic purposes. When the lesion is less than 2cm in maximum diameter it is preferabely excised and if it is larger than 2 cm it is subjected to incisional biopsy. Apart from size the other factors which influence mode of biopsy is, site of lesion, nature of lesion, condition and status of patient, operative facilities available etc. Many lesions where any malignancy is suspected, a small biopsy is taken to rule out malignancies. Ranchi is the capital of a relatively new state Jharkhand which draws patients from entire state. There is a large population of tribal people in this state where medical facilities are yet to reach to the optimum level. As was evident in the present study also, people get the diagnosis done here but they prefer to go to higher centres in metro cities to get their major surgeries done. That was the main reason why most of the biopsies were smaller in size with average biopsy size being 1.72 cm in maximum dimension. The smallest biopsy was 0.5 cm and the largest was 7.8 cm in maximum dimension.

The most common site of biopsy was gingiva in the present study whereas Sandhya et al found buccal mucosa as the most common site.

Oral and maxillofacial lesions (OML) can basically divided into odontogenic and non-odontogenic lesions. Odontogenic lesions can be inflammatory, cystic or tumors. Tumors can be benign or malignant. Non-odonogenic lesions include benign and malignant lesions. Benign lesions can be inflammatory, reactive or tumors.

In the present study, among the inflammatory lesions, granulation tissue was found in 3 cases and non-specific chronic inflammatory lesions were found in 2 cases. Two cases of granulomatous lesions were also found of which one case had necrosis as well. One case each of peripheral granuloma, chronic sialadenitis and traumatic ulcer were found.

Radicular cyst was the most common odontogenic cystic lesions in the present study accounting for 4 cases. Gambhir et al, Saleh et al and Jones et al found similar results. The first two authors report a male preponderance in their studies but the present study had no sex predilection as found by Jones et al. Dentigerous cysts and primordial cysts accounted for 2 cases each. One case each of Keratocyst and Odontogenic keratocyst were also seen.

The pyogenic granulomas were the most common reactive lesions as observed by Saleh et al accounting for 6 cases in the present series. Mucocele was seen in two cases and sialolith was seen in one case.

Several benign epithelial and soft tissue neoplasms were also observed in the present study. Papillomas and Fibroepithelial polyps accounted for 11 cases followed by Hemangiomas (2 cases) and Lipomas (2 cases). Fibroma, Fibrolipoma, Granular cell tumor, Dermatofibroma, Epulis and Nevus accounted for 1 case each.

Ameloblastomas were the most prevalent of the odontogenic tumors (3 cases) similar to Gupta et al who conducted their studies in the state of Tamilnadu and Lu et al who studied the Chinese population. Ameloblastic odontoma and Adenom atoid Odontodenic tumor were seen in one case each.

Eight cases of premalignant lesions were seen in this study constituting 6.77% of all cases. Oral Lichen planus was most common accounting for four cases. Dysplasia and Leukoplakia were seen in two cases each. Napier et al reported premalignant lesions in 1-5% of cases.

Malignant tumors were seen in 38 cases (32.2%) in the present study. This is comparable to study conducted by Saleh et al in

Saudi Arabia (38.8%) and Sandhya et al in Kerala (28.4%). However other studies like Jones et al in UK (5.4%) and Anis et al in UAE(14.9%) show lower number of cases. The relatively higher number of cases can be attributed to the fact that those patients with suspicious lesions almost always undergo biopsies whereas those with clinically benign lesions may not be subjected to biopsies in all cases and also oral malignancies are quite common.

Oral cancer is the major health problem in India where the incidence is 12.6/100,000 population. It accounts for 50-70% of all cancers diagnosed. 90% of oral cancers in South East Asia including India are linked to tobacco chewing and smoking. 85-95% of these are Squamous cell Carcinomas. Tobacco habits being more common in males hence oral cancer is the most common type of cancer in males and fifth most common cancer in females(Shah et al). Squamous cell carcinomas accounted for 89.5% of all malignancies in the present study.

In the present study, the age group most commonly affected by malignancies was 51-60 years(12 cases) closely followed by age group 61-70 years (10 cases). These are similar to other studies. This accounts for 50% of all biopsies in these age groups (24 and 20 cases respectively). Another alarming finding in this study is presence of 7 cases (41.2% of biopsies) of malignancies in age group 31-40 years. Previously it was considered that elderly age groups were more affected by oral cancers. Finding higher incidence of oral cancer in younger age groups is a matter of grave concern. Literature suggests that oral cancers in younger age groups are more aggressive and carry poor prognosis(Iype et al) hence preventive measures like discouraging tobacco habits in younger persons is desirable. Also literature suggests that tobacco and alcohol are independent risk factors for oral cancers but they are synergistic as well.

Khandekar et al reported alveolus as the most common site of oral cancer while Agrawal et al reported tongue to be the most common site. In our study buccal mucosa (12 cases) was the most common site for squamous cell carcinoma followed by gingiva. This can be explained by difference in tobacco, pan chewing and smoking habits in different populations.

Histological grading is important part of reporting to predict the prognosis of oral cancers. Their biological activity is categorised as highly, moderately and poorly differentiated. Akhter et al and Sandhya et al reported moderately differentiated carcinomas to be most common; poorly differentiated being more common in elderly and well differentiated carcinoma being common in younger age group. In the present study, well differentiated carcinomas were found to be most common in all age groups followed by moderately differentiated ones.

Malignancies other than Squamous cell carcinoma was seen in four cases. One case of Veruccous carcinoma was seen in a 56 year old. One case of Adenoid cystic carcinoma was seen in intra and extra maxillary biopsy pieces. One case of Sinonasal carcinoma in left maxillary sinus was found. One case of Malignant melanoma in the buccal mucosa was seen in a 55 year old male.

CONCLUSIONS

Oral and maxillofacial region shows various types of pathologies and about 39% of them are premalignant and malignant lesions. Squamous cell carcinoma is the most common tumor of this region being more prevalent in people above 50 years of age. But finding a higher proportion of squamous cell carcinoma in age group 31-40 years is very alarming and preventive measures are required to protect younger generation. Health facilities should be improved in smaller cities so that people need not go to metro cities for treatment.

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