

ORAL BIOPSIES: STUDY OF 114 CASES

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ABSTRACT

Present study was carried out to find out the frequency of oral biopsies reported at the Railway Hospital, Rawalpindi and to compare it with worldwide literature.

Patient data were retrieved from Jan 2007 to May 2012 from the record files of the histopathology department at railway hospital and analyzed using SPSS version 17.

Of the total 114 cases the majority of the patients were in their 5th and 6th decades of life with no gender predilection as male to female ratio was 1.1:1. Major categories of lesions reported were malignant neoplasms (n=40), inflammatory lesions (n=21) and reactionary lesions (n=14).

Squamous cell carcinoma was the most commonly reported malignant lesion making it an emerging threat to the community, with decreasing prognostic potential as the age of the patient increased.

Key words: Oral biopsies, frequencies

INTRODUCTION

The oral cavity and maxillofacial region is often host to a wide spectrum of pathological lesions of variable nature; neoplastic, cystic, keratotic, inflammatory, reactionary and the list is exhausting. The hallmark features of the oral cavity are the teeth, gingiva, oral Mucosa, tongue and the salivary glands and thus their respective pathologies like odontogenic cysts/tumours and salivary gland disorders are the important lesions reported in various studies published worldwide. Due to the large variety of lesions, an equally wide spectrum of clinical and histopathological presentations is encountered. Thorough knowledge of regional anatomy and normal histology for definite diagnosis is thus essential to understand the nature, incidence and pattern of these lesions.

Oral pathology is a well recognized speciality around the world with qualified oral pathologists practicing their forte, thus a good number of studies are published worldwide reporting the increasing inci-

dence of oral lesions. However, this is still an emerging sub-speciality in this country, thus regarding oral health data; little information on dental and oral mucosal conditions is available. Nevertheless, studies are now often published to report the incidence and other parameters of oral lesions reported in Pakistani population. Present study aims to contribute to the pool of research done in this field and it is envisaged that this will contribute to the knowledge of lesions affecting the oro-facial region in this part of the world.

METHODOLOGY

This study was conducted at the histopathology department, Railway Hospital, Rawalpindi from Jan, 2007 to May 2012. The study design was retrospective descriptive. During the study period, a total of 123 oral biopsies were submitted to the histopathology department. Records were retrieved from the record files and complete data regarding the age, gender, site and histopathological diagnosis were retrieved of 114 biopsies and were analyzed by using SPSS version 17. The

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cases with incomplete demographic details of patients and non-diagnostic biopsy were excluded from the study.

RESULTS

The mean age at presentation was 47 years with the age range of 7 to 80 years. Peak age was the 5th and 6th decade of life. (Fig. 1) Majority of the lesions affected the mandible followed by buccal mucosa. (Fig. 2) 52.6% (n=60) of the lesions affected males while 47.3% (n=54) were in females with male to female ratio of 1.1:1.

The lesions were broadly sub divided into major categories for ease of analysis and comparison with published literature. Major categories of the lesions reported are shown in Fig. 3. Malignant neoplasm accounted for 40.4% (n=46) of the cases studied of which 35.1% (n= 40) were Squamous cell carcinoma. Next most common pathology found was inflammatory lesions making up 18.4% (n=21). Details of all the lesions according to their types and subtypes are tabulated in Table 1.

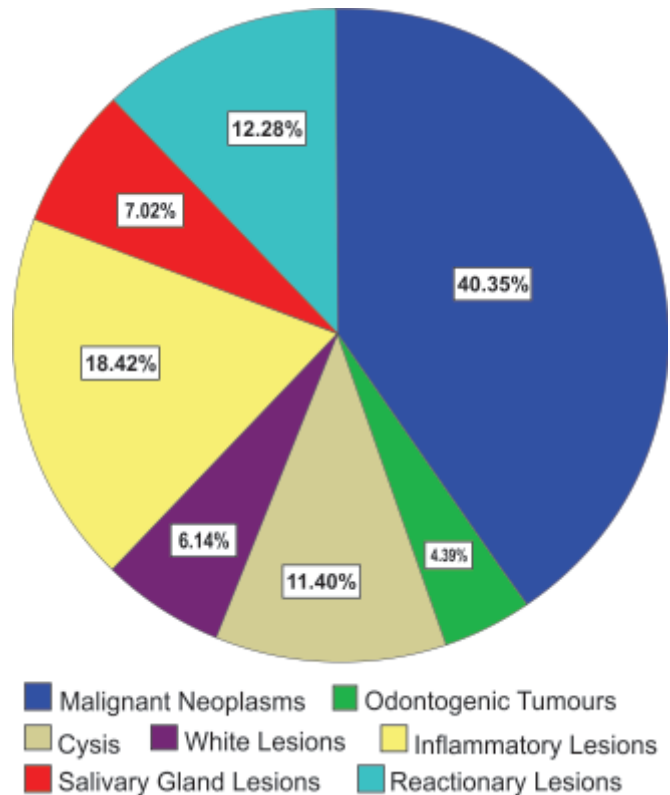


Fig 3: Distribution Of Major Categories

they may be malignant, odontogenic, cystic or inflammatory in nature along with many more types.

In this study highest frequency of lesions was of malignant neoplasm (n=46, 40.4%) with Oral Squamous Cell Carcinoma (OSCC) having the highest incidence (n=40, 35.1%) Out of these cases 24 (52%) occurred in males and 16 (35%) in females, primarily affecting the lower alveolar ridge followed by buccal mucosa.

90% of all the oro-facial malignant neoplasm are Oral squamous cell carcinoma (OSCC) which holds the eighth position in cancer ranking worldwide, being the third most common malignancy in south central Asia.¹ The incidence of oral cancer varies enormously around the world as cancer registration according to the WHO standards is comparatively recent.² Tumors affecting the oro-facial region are fairly common in the South Asian region. Oral squamous cell carcinoma shows the highest incidence in the 6th decade of life, followed by the 8th decade.³

Current study showed parallel results to various national studies carried out in major cities of Pakistan, all of which reported oral squamous cell carcinoma as one of the top three cancers involving mostly the buccal mucosa and lower alveolar ridge, affecting primarily

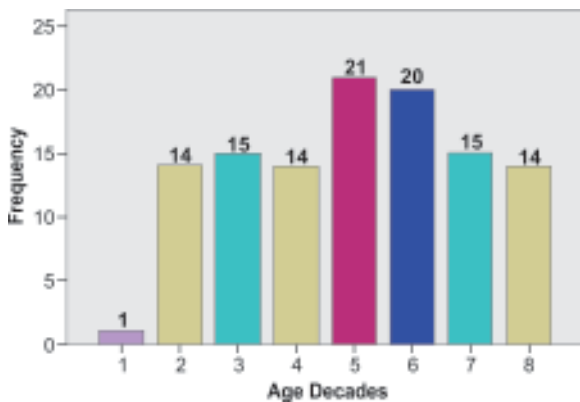


Fig 1: Age Distribution

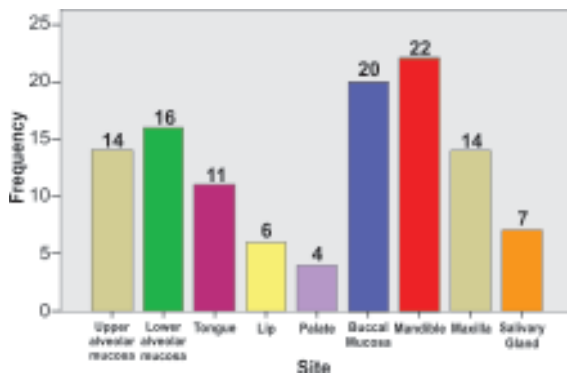


Fig 2: Site Distribution

DISCUSSION

The maxillofacial region and the oral cavity can be host to a multitude of pathological lesions. Lesions may arise from various tissues within this region and

TABLE 1: LESION FREQUENCY AND GENDER DISTRIBUTION

Lesion Type	Frequency (n)	Percentage (%)	Gender	
			Male	Female
Malignant lesions				
Squamous Cell Carcinoma	40	35.1	24	16
Verrucous cell carcinoma	3	2.6	3	0
Malignant Melanoma	2	1.8	0	2
Osteosarcoma	1	.9	0	1
Cysts				
Radicular	5	4.4	2	3
Dentigerous	4	3.5	3	1
NOS	4	3.5	3	1
Odontogenic tumours				
Ameloblastoma	5	4.4	4	1
White lesions				
Lichen Planus	4	3.5	1	3
Oral submucous fibrosis	3	2.6	3	0
Inflammatory lesions				
Osteomyelitis	4	3.5	3	1
Plasma cell gingivitis	1	.9	0	1
Non specified inflammatory lesions	16	14.0	8	8
Salivary gland lesions				
Sialadenitis	3	2.6	1	2
Pleomorphic Adenoma	3	2.6	0	3
Mucoepidermoid carcinoma	1	.9	1	0
Mucocele	1	.9	0	1
Reactionary lesions				
Pyogenic granuloma	11	9.6	2	9
Central Giant Cell Granuloma	1	.9	0	1
Peripheral Giant Cell Granuloma	2	1.8	2	0
TOTAL	114	100	60	54

males with increasing incidence of female patients as well.⁴⁻⁷

Likewise, present study is in accordance to several international studies published in the Ghana, Sri Lankan, Kenya and Brazil which also demonstrate high incidence of oral squamous cell carcinoma.⁸⁻¹¹

Studies by many researchers show a greater pre-dilection of males suffering from OSCC though there is no prognostic difference between males and females. The correlation of prognosis with age seems controversial and some authors show no relationship between them, whereas others demonstrate worse prognosis in older patients.^{12,13}

The next most common lesion reported amongst

malignant neoplasm was Verrucous carcinoma which is a rare, low-grade variant of SCC. The most common site of oral mucosal involvement is the buccal mucosa, followed by the mandibular alveolar crest, gingiva and tongue. This tumor is commonly seen in males in the sixth decade of life.^{14,15} Present study supports this analysis as the 3 cases of verrucous carcinoma were all males in their 5th, 6th and 7th decade of life.

Another neoplasm included in the malignant lesion category was malignant melanoma which is the third most common skin malignancy, oral cavity is rarely host to this silent killer accounting for 0.2-8% of all malignant neoplasms. This lesion occurs more dominantly in males between the ages of 40-70 years.^{16,17}

Current study reported only 2 patients of Malignant Melanoma of which both are females, which is not in accordance to world literature. A small number of cases cannot be taken as a significant result at large.

The second most common major category of lesions reported to the Railway hospital was Inflammatory in nature. Of the 21 biopsies of inflammatory lesions, 16 were Non-specific chronic inflammatory lesions. Among the rest of the 5 lesions, 4 were diagnosed as chronic osteomyelitis and the other was a rare entity of plasma cell gingivitis.

Osteomyelitis is an acute or chronic inflammatory process in the medullary spaces or cortical surfaces of bone (that extends away from the site of involvement) and it is mostly of bacterial origin. Patients of all ages can be affected by it and there is a strong male predominance with most of the cases affecting the mandible.¹⁸

Present study showed third highest number of lesions to be of reparative and reactionary in nature. Various lesions like the epulis, giant cell lesions, fibro-epithelial polyp and pyogenic granuloma come under the umbrella of reactionary lesions. They mostly arise from the oral mucosa with gingiva being their favoured site.

The results of this study reported eleven cases of pyogenic granuloma mostly arising on maxillary gingiva, with females affected in 9 cases, which is analogous to the many researches which also state pyogenic granuloma to commonly affect the interdental gingiva of the maxillary anterior region of female patients primarily.^{19,20}

The next major category of lesions in the present study was of odontogenic cysts, called so as they are derived from odontogenic epithelium. The current study showed predominance radicular cyst, which is in accordance to many studies.²¹⁻²³ Three of the radicular cysts affected the mandible and two in the maxilla not making the results of this study strongly coherent with the published data. Dentigerous cysts usually show predilection for posterior mandible and same is true for this study as three out of four cases arised in the posterior mandible.²¹⁻²³

Salivary glands, both major or minor are an important component of the oro-facial region and they also present a range of pathologies that may arise in the glandular structure. Salivary gland tumors are relatively rare neoplasm, accounting for 3-10% of head and neck tumors.²⁴ among these tumors, most common benign tumour is Pleomorphic adenoma (PA) and

Mucoepidermoid carcinoma (MEC), the most common primary malignant neoplasm affecting predominantly the parotid gland.²⁵ The highest incidence of MEC is during the 4th and 5th decades of life with slight female predominance.²⁶ Our study revealed 3 cases of Pleomorphic Adenoma and 1 case of MEC all of which affected the Parotid gland. All cases of PA occurred in females as previous researchers conclude that there is a preponderance of women (about 60% of cases).²

White lesions constitute a rather common group of lesions that are encountered on routine oral examination yet only 7 cases (6.1%) of white lesions are reported in this study, as most white lesions can be diagnosed on clinical grounds and only suspicious cases are biopsied.

Present study reported 4 cases of lichen planus which is one of the most frequent mucocutaneous immunological disorder and carries a risk for malignant transformation and occurs mostly between the ages of 30-60years.²⁷⁻²⁹ Patients presented in the 4th and 5th decade of life with 1:3 male to female ratio which is analogous to the female predominance recorded in the literature.^{13,28,29}

Present study reported 3 male patients with bilateral involvement of the buccal mucosa by a premalignant condition referred to as oral sub mucous fibrosis. All the concerned patients gave a positive history for betel quid and pan consumption. Oral sub mucous fibrosis (OSMF) is a premalignant condition of oral cavity with chronic change in fibro-elasticity, characterized by burning sensation in the oral mucosa predominantly seen in Indians and South East Asians^{30,31} Findings of the present study are analogous to the studies carried out by Indian investigators as the Pakistani population has strong ethnic, socio-cultural ties to its neighbor.³⁰⁻³²

Odontogenic tissues not only give rise to cysts but can also give rise to tumors which may reflect a neoplastic growth of odontogenic epithelium or mesenchymal tissue.²¹ Ameloblastoma is a common odontogenic tumor and the only type that is reported in this study with male to female ratio of 4:1 which primarily affected the mandibular bone. Though present study reflects a small number of odontogenic tumors, but the dominance of ameloblastoma is in accordance with the worldwide literature.^{8,33-36}

CONCLUSION

The lesions affecting the oro facial region constitute a diverse group of pathologies. Of all the oral biopsies reported at the Railway Hospital, in the con-

cerned period, Squamous Cell Carcinoma was the most commonly reported pathology making it an emerging threat to the community and highlighting the need to take effective measures to increase public awareness about the risk factors and consequences of this life-threatening condition. Measures should be designed to encourage the population to have routine oral examination making an early detection of any pathological changes occurring which will contribute in alleviating dental and oral health of the population.

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