

A 5-YEARS RETROSPECTIVE STUDY OF ORAL PATHOLOGICAL LESIONS IN 425 SAUDI PATIENTS

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ABSTRACT

Objective of this study was aimed to highlight the frequency and prevalence of oral pathological lesions. Four hundred and twenty five patients visiting the Department of Oral and Maxillofacial Surgery/ Oral Medicine of Qurayyat Specialized Dental Center, Al-Qurayyat, Saudi Arabia, were included in the study. The study was conducted from year 2011 to 2015.

Frequency of patients was noted. Males were 260 / 425 (61.2%) and females 165 / 425 (38.8%). Age range was 6-77 years with mean 38.4 + 13.65. Reactive lesions were the most common occurrences, diagnosed in 425 cases (8.94%), and followed by fungal infections (7.8%), lichen planus (7.1%) and pulp and periapical lesions (6.82%). Most common malignant lesion was squamous cell carcinoma 4.7 % (30 / 425). Most common salivary gland pathology was mucoepidermoid carcinoma 3.1% (13 / 425).

Key Words: oral pathological lesions; reactive lesions; squamous cell carcinoma.

INTRODUCTION

Oral Health is substantial to the quality of life for all age groups. Oral lesions can hinder the daily activities by causing pain or discomfort that interferes with swallowing, mastication and speech. This creates additional symptoms like halitosis, xerostomia and oral dysesthesia, which can restrain an individual from daily social activities.^{1,2} Frequency of Oral lesion is variable from population to another, and knowledge of disease prevalence in a geographic place will upgrade the preventive measures.^{3,4} Diagnosis and Treatment of these pathogens play an important role as part of general health care.^{5,6} Biopsy and histopathological analysis is

mandatory for some lesions that can not be diagnosed on the basis of the history and clinical findings alone.⁷ There are many types of biopsies recommended for the oral lesions to reach to a definitive diagnosis. Biopsies are classified according to the location and duration of the lesion, availability of the materials and behavior of the lesion.⁸

METHODOLOGY

The results of patients, with oral lesions, presented in the Department of Oral and Maxillofacial Surgery/ Oral Medicine of Qurayyat Specialized Dental Center, Al-Qurayyat, Saudi Arabia, from year 2011 to 2015, were assessed. 425 patients formed the study group. The study was approved by the institutional ethical Committee. A written informed consent was obtained from the patients or their parents/ guardian. All patients who refused or could not be allowed the clinical examination and biopsy procedure were excluded. All the examination was performed by the authors themselves. Dental and systemic medical history was taken from all the patients and then clinical oral examination was performed according to the WHO guidelines.⁹

A questionnaire was completed which included name, age, gender, address, complaints, general health of the patient, drug history, habits, addiction to tobacco or its substitutes. During the examination of the lesion, the site, size, texture, extension, etiological factor, den-

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tal status and trauma from sharp teeth or prosthesis were analyzed and recorded. The lesions which couldn't be diagnosed clinically and needed histopathological investigation to reach to a definitive diagnosis were planned for biopsy. All the biopsies were performed by the oral and maxillofacial surgeons in Qurayyat specialized dental center. X-rays, Orthopantomogram, Postero-Anterior face View, CT-scans and MRI of head and neck were done when required to aid in diagnosis. Lesions once diagnosed, were classified into 21 different categories. The results were analyzed by using SPSS 22 for windows Xp.

RESULTS

Age range was 6-77 years with mean 38.4 ± 13.65 . Reactive lesions were the most common occurrences, diagnosed in 425 cases (8.94%), and followed by fungal infections (7.8%), lichen planus (7.1%) and pulp and periapical lesions (6.82%). Most common malignant lesion was squamous cell carcinoma 4.7% (30/425). Most common salivary gland pathology was mucoepidermoid carcinoma 3.1% (13/425).

DISCUSSION

Oral pathological lesions may involve soft tissues, hard tissues or both. They can range from small benign negligible erosions to extensive, invasive and life threatening pathological masses. Although it is extremely important to report the prevalence, incidence and frequency of these lesions presenting in certain population and community, still there are few studies conducted in Saudi Arabia which focused this issue.¹⁰ To our knowledge there is not a single study conducted in the region of Al-Jouf, especially Al-Qurayyat city, which addressed this topic.

The mean age of the patients included in this study was 38.4 years. This finding was consistent with the study conducted by Shila et al⁴, which showed that the mean age for their study group was 38 years as well. Another study conducted by Al-Mobeeriek et al¹⁰ revealed that the mean age of the patients was 38.2 years, which is very similar to ours. Many other studies support the concept that most of the oral lesions present in the third and fourth decade of life and as the age progresses the invasiveness and occurrence increases e.g. Fordyce's granules, generalized pigmentation and smokers keratosis are usually seen in older ages more than adults.^{2,6,11,12}

Gender wise distribution of these lesions and conditions has also been extensively studied in various articles. Our study showed that males suffered and presented to our clinic more than females. Some studies showed the male and female suffered equally and in some statistical analysis of data it was revealed that females were the major victims. Males are usually more

affected from some specific lesions as they are exposed to smoking, alcohol, pollution and to the environmental hazards more than females, e.g. 8 year study on 346 patients by Pires et al showed that oral squamous cell carcinoma is twice as common in males than in females.¹³ Precancerous and cancerous lesions, hairy tongue, frictional keratosis and leukoedema are usually seen more in males than females as the risk factors for them is tobacco smoking mainly, especially in Saudi community as they are very conservative and females don't get a chance to adapt to this habit frequently.^{14,15}

Reactive lesions were the most frequent category studied in this article, n=38 (8.9%). This was very similar to the study conducted by Shila et al⁴, which showed 21.5% patients suffered from the same lesions.

Classification of oral pathological lesion according to their appearance, nature and origin is very important to reach to the correct diagnosis and eventually treatment. The severity and frequency of occurrence of oral lesions in particular population also needs to be studied to establish a differential diagnosis. In our study among the odontogenic cysts the most common was odontogenic keratocyst (2.4%). Due to the aggressiveness, invasiveness and ability to recur, new WHO classification has now named this cyst keratocystic odontogenic tumor.⁴ Study conducted by Daley et al¹⁶, Nakamura et al¹⁷ and Fierro-Garibay et al¹⁸ reported that radicular cyst was most common followed by dentigerous cyst and odontogenic keratocyst. Ramachandra et al¹⁹ published in their study that keratocyst was the second most common cystic lesion after radicular cyst. Establishing a diagnosis as far cystic lesions are concerned, keratocyst should be ruled out carefully as it one of the most common occurring cyst worldwide.

Among the benign salivary gland lesions n=22, sialolithiasis has been showed in our results as the most common pathology n=9 (41.0%). Sialolithiasis has been reported as common salivary gland pathology with prevalence reaching up to 50% and mostly occurring in submandibular glands followed by parotid glands.²⁰ submandibular gland may be more prone to stone formation because it has a long tortuous duct, flow of the saliva is against the gravity and chances of its stasis is more and saliva is more alkaline with high calcium and mucin content.

Malignant salivary gland diseases were also encountered in our study. N=13 patients suffered

TABLE 1: DISTRIBUTION BY GENDER N=425

Sex of the patient	Patients	Percentage
Male	260	61.2%
Female	165	38.8%
Total	425	100%

TABLE 2: DISTRIBUTION OF THE PATIENTS ACCORDING TO THE DIAGNOSED ORAL PATHOLOGICAL LESIONS N=425

Odontogenic cyst	No. & per- cent		Salivary gland lesions	
OKT	10	2.4%	Mucocele	8 1.9%
Dentigerous cyst	8	1.9%	Sialolithiasis	9 2.1%
Paradental cyst	2	0.5%	Ranula	5 1.2%
Eruption cyst	5	1.2%	Malignant salivary gland tumors	
Non-odontogenic cysts			Mucoepidermoid carcinoma	13 3.1%
Epidermoid cyst	14	3.3%	Benign salivary gland tuomrs	
Epithelial lesions			Pleomorphic adenoma	10 2.4%
Dysplasia	10	2.7%	Immunological mediated lesions	
Papilloma	12	2.8%	Lichen planus	30 7.1%
Benign keratosis	3	0.7%	Malignant epithelial tumors	
Non-epithelial-lined cysts			Squamous cell carcinoma	20 4.7%
Solitary bone cyst	12	2.8%	Others	
Non-epithelial white-yellow lesions			Geographic tongue	10 2.4%
Mucosal burns	2	0.5%	Lupus erythematosus	6 1.4%
Fordyce's granules	10	2.4%	Odontogenic tumors	
Pulp & periapical lesions			Ameloblastoma	6 1.4%
Radicular cyst	8	1.9%	Adenomatoid odontogenic tumor	4 0.9%
Periapical granuloma	8	1.9%	Myxoma	8 1.9%
Residual cyst	13	3.1%	Fungal infections	
Reactive			Median rhomboid glossitis	7 1.6%
Hairy tongue	10	2.4%	Denture related stomatitis	8 1.9%
Cheek chewing	3	0.7%	Erythematous candidiasis	10 2.4%
Lina alba	9	2.1%	Hyperplastic candidiasis	8 1.9%
Irritation fibroma	4	0.9%	Ulcerative	
Pyogenic granuloma	5	1.2%	Aphthous ulcer	9 2.1%
frictional hyperkeratosis	7	1.6%	Behcet disease	1 0.2%
Benign mesenchymal tumors			Herpes simplex virus	9 2.1%
Cavernous hemangioma	5	1.2%	Erythema multiforme	1 0.2%
Lipoma	13	3.1%	Sjögren's syndrome	3 0.7%
Fibroma	7	1.6%	Traumatic ulcer	5 1.2%
Peripheral giant cell granuloma	2	0.5%	Vascular lesions	
Pigmented lesions			Hemangioma	12 2.8%
Exogenous pigmentation	10	2.4%	Bone pathology	
Amalgam tattoo	2	0.5%	Central giant cell granuloma	7 1.6%
Ecchymosis	4	0.9%	Traumatic bone cyst	6 1.4%
Preneoplastic				
Idiopathic leukoplakia	12	2.8%		

from mucoepidermoid carcinoma. Infect it was the only malignancy seen as far as the salivary glands were concerned. According to Tian Z et al²¹,

mucoepidermoid carcinoma was the most common malignant salivary gland tumor among 6982 case studied. Salivary gland neoplasms account for 5% of the head and neck cancers. Out of 5% of these neoplasms mucoepidermoid carcinoma is the most common, ranging from 30-40%.²²

CONCLUSION

The present study has provided useful information regarding the epidemiological aspect of the oral pathological lesions in the Al-Qurayyat population. This study can serve as a base line data for future studies on the prevalence of various oral lesions in a specific or general population. Most lesions encountered in this study were inflammatory or benign. The dentist should be able to recognize and diagnose the benign from malignant lesions so as to decide the appropriate line of treatment. Continuing Medical education programs should be conducted periodically to enhance the diagnostic abilities of the general dentists and specialists. Squamous cell carcinoma was the most common malignancy seen in this study and it is a proven fact that it is frequently associated with the smoking. Oral health awareness programs should be conducted to improve the oral health of the Al-Qurayyat population in specific and Saudi Arabia in general.

REFERENCES

- Kamulegeya A, Lakor F. Oral maxillofacial tumors and tumor-like conditions: a Ugandan survey. *Pediatr Surg Int* 2011; 27(9): 925-30.
- Patil S, Doni B, Maheshwari S. Prevalance and distribution of oral mucosal lesions in Geriatric Indian population. *Can Ger J* 2015; 18(1): 11-14.
- Carvalho MV, Iglesias DP, do Nascimento GJ, Sobral A.P. Epidemiological study of 534 biopsies of oral mucosal lesions in elderly Brazilian Patients. *Gerodont* 2011; 28(2): 111-15.
- Moridani SG, Shaahsavari F, Adeli MB. A 7- year retrospective study of biopsied oral lesions in 460 Iranian Patients. *RSBO* 2014; 11(2): 118-24.
- Ali M, Sundaram D. Biopsied oral soft tissue lesions in Kuwait: a six-year retrospective analysis. *Med Princ Pract* 2012; 21: 569-75.
- Ali M, Joseph B, Sundaram D. Prevalence of oral mucosal lesions in patients of the Kuwait University Dental Center. *Saudi Dent J* 2013; 25: 111-18.
- Patton LL, Epstein JB, Kerr AR. Adjunctive techniques for oral cancer examination and lesion diagnosis: a systematic review of the literature. *J Am Dent Assoc* 2008; 139(7): 896-905.
- Avon SL, Klieb HBE. Oral soft-tissue biopsy: An overview. *J Can Dent Assoc* 2012; 78: c75.
- Adebayo ET, Ajike SO, Adekeye EO. Odontogenic tumors in children and adolescent: a study of 78 Nigerian cases. *J craniomaxillofac Surg* 2002; 30(5): 267-72.
- Al-Mobeeriek A, Al-Dosari AM. Prevalence of oral lesions among Saudi dental patients. *Ann Saudi Med* 2009; 29(5): 365-68.
- Razavi SM, Shiriani AM, Khaleghi MA, et al. oral red and white lesions prevalence in patients referred to oral pathology department during last two decades, Isfahan, Iran. *J Kerman-shah Uni Med Sci* 2012; 16(1): 70-75.
- Shulman JD, Beach MM, Rivara-Hidalgo F. The prevalence of oral mucosal lesions in U.S. adults: data from the Third National Health and Nutrition Examination Survey, 1988-1994. *J Am Dent Assoc* 2004; 135(9): 1279-86.
- Piers FR, Ramos AB, de Oliveira JBC, et al. Oral squamous cell carcinoma: clinicopathological features from 346 cases from a single oral pathology services during an 8-year period. *J Appl Oral Sci* 2013; 21(5): 460-67.
- Al-Attas SA, Ibrahim SS, Amer HA, et al. Prevalence of potentially malignant oral mucosal lesions among tobacco users in Jeddah, Saudi Arabia. *Asian Pac J Cancer Prev* 2014; 15(2): 757-62.
- Salem G, leukoplakia and tobacco habits in Gizan, Saudi Arabia. *Saudi Dent J*. 1992; 4(2): 50-54.
- Daley TD, Wysocki GP, Pringle GA. Relative incidence of odontogenic tumors and oral and jaw cysts in a Canadian population. *Oral Surg Oral Med Oral Pathol* 1994; 77(3): 276-80.
- Fierro-Gariby C, Almendros-Marques N, Berini Aytes L, Gay-Escoda. Prevalence of biopsied oral lesions in department of oral surgery. *J Clin Exp Dent* 2011; 3(2): 73-77.
- Nakamura T, Ishida J, Nakano Y, et al. A study of cysts in the oral region. Cysts of jaws. *J Nihon Univ Sch Dent* 1995; 37(1): 33-40.
- Ramachandra P, Maligi P, Raghuvver HP. A cumulative analysis of odontogenic cysts from major dental institutions of Bangalore city: a study of 252 cases. *J Oral Maxillofac Pathol* 2011; 15(1): 1-5.
- Huoh KC, Eisele DW. Etiologic factors in sialolithiasis. *Otolaryngol Head Neck Surg* 2011; 145(6): 935-39.
- Tian Z, Li L, Wang L, Hu Y, Li J. Salivary gland neoplasm in oral and maxillofacial regions: a 23-year retrospective study of 6982 cases in a eastern Chinese population. *Int J Oral Maxillofac Surg* 2010; 39(3): 235-42.
- McHugh CH, Roberts DB, El-Naggar AK, et al. Prognostic factors in mucoepidermoid carcinoma of the salivary glands. *Cancer* 2012; 118(6): 3928-36.

CONTRIBUTION BY AUTHORS

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| 1 Yousef Musarrah Alanazi: | Writing of manuscript. |
| 2 Mohammad Raji Alrwuili: | Data collection. |
| 3 Khurram Latif: | Formulation of results and writing manuscript. |
| 4 Nasser Attallah Alenzi: | Data collection. |
| 5 Badar Awadh Alenzi: | Data collection. |
| 6 Mohammed Ahmed Aljabab: | Data collection. |