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*DISTRIBUTION OF ORAL PATHOLOGIES: A RETROSPECTIVE ANALYSIS IN KAYSERI REGION
ORAL PATOLOJİLERİN DAĞILIMI: KAYSERİ BÖLGESİNDE RETROSPEKTİF BİR ANALİZ

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ABSTRACT

Pathology is an important discipline which can make the definitive diagnose of the lesions and help surgeons for the treatment of the lesions. Biopsy materials taken from the oral maxillofacial area are examined by pathologists and the results helps the surgeon to identify the characteristic of the lesion and possible treatment modalities of lesions. This study includes the biopsy results taken from the patients referred to Erciyes University Faculty of Dentistry Department of Oral Maxillofacial Surgery between the years of 2005-2011. Four hundred and seventy-nine biopsy results were included in this study. As the result of this study 96.9% (n=464) biopsy were benign lesions, 3.1% (n=15) were malign lesions, 25.2% (n=121) were infection cyst, 13.3% (n=64) were developmental cyst, 3.5% (n=17) were non -odontogenic cyst, 5.4% (n=26) were benign odontogenic tumor, 8.7% (n=42) were benign non-odontogenic tumor, 37.1% (n=178) were benign re-active lesions, 3.3% (n=16) were benign fibro-osseous lesion. In our country, patients who are complaining about lesions in their oral cavity are referred either to the department of plastic and reconstructive surgery or to the department of otolaryngology clinics instead of oral and maxillofacial departments. This can be the possible reason for the low rate result of malign lesion in this study.

Keywords: Pathology, Oral Pathology, Biopsy, Maxillofacial Biopsy

ÖZ

Patoloji, lezyonların kesin tanısını koyabilen ve lezyonların tedavisi için cerrahlara yardımcı önemli bir disiplindir. Oral ve maksillofasiyal alandan alınan biyopsi materyalleri patolog tarafından incelenerek, cerrahlara lezyonun karakteristiği ve olası tedavi şekillerinin tanımlanmasına yardımcı olur. Bu çalışma, 2005-2011 yılları arasında Erciyes Üniversitesi Diş Hekimliği Ağız Diş ve Çene Cerrahisi Kliniğine başvuran hastalardan alınan biyopsi sonuçlarını içermektedir. Çalışma 479 biyopsi sonuçlarını değerlendirmektedir. Bu çalışmanın sonuçları %96.9(n=464) iyi huylu lezyon, %3.1(n=15) malign lezyon,% 25.2 (n = 121) inflamatuar kist, % 13.3 (n = 64) gelişimsel kist, % 3.5 (n = 17) non-odontojenik kist, % 5.4 (n = 26) benign odontojenik tümör, % 8.7 (n = 42) benign non-odontojenik tümör, % 37.1 (n = 178) benign reaktif lezyonlar,% 3.3 (n = 16) benign fibro-osseöz lezyon göstermektedir. Ülkemizde, oral kavitede lezyondan şikayeti olan hastalar, oral ve maksillofasiyal bölüm yerine plastik ve rekonstrüktif cerrahi ve kulak burun boğaz kliniği bölümlerine başvurmaktadır. Bu çalışmada düşük malign lezyon sonucunun olası nedeninin bu durumun olabileceği düşünülmektedir.

Anahtar kelimeler: Patoloji, Oral Patoloji, Biyopsi, Maksillofasiyal Biyopsi

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INTRODUCTION

The word biopsy consists of the combination of two Greek terms; bios (life) and opsis (vision): vision of life (1). Biopsy is a supporting surgical method which aims the removal of tissue from the living organism for microscopic analysis of the sample and to define histological characteristics of the lesion (2). In the field of dentistry especially in oral surgery, it is obligatory to determine the characteristic and behavior of the lesion in order to define exact treatment modalities and within to determine the surgical borders of a lesion. Biopsy indications are; for identifying a suspicious lesion, for planning a suitable treatment (local, radical surgery or radiotherapy), for assessing the progress of treatment and evaluation of the final result whether if surgical area is free of recurrence or not (1,3). Additionally indications for oral biopsy include (2): Any lesion that persists for more than 2 weeks with no obvious etiologic basis; All inflammatory lesions that did not respond purely after 2 weeks of treatment; Any persistent hyperkeratotic lesion; Any lesion suspected of neoplasm; Inflammatory changes of unknown cause that persists for long periods; Lesions that do not allow normal function; Any tissue removed during the surgical procedure; Any tissue spontaneously expelled from a body orifice (2).

The aim of this study was retrospective evaluation of the biopsy results of the patients that admitted to a faculty in middle Anatolia.

MATERIAL AND METHODS

Our research was carried out by examining the biopsy specimens and pathology reports which was taken from patients admitted to Erciyes University Oral and Maxillofacial Surgery Department between the years of 2005-2011. Results were evaluated in terms of lesion type, malignancy, age, sex and localization. Localizations were divided in to 9 subgroups; right / left maxillary posterior region, right / left mandibular posterior region, right / left cheek region, maxillary / mandibular anterior region and upper/lower lips.

RESULTS

A total of 479 biopsy reports were enrolled in this study. 464 of the 479 biopsies (96.6%) were found benign whereas n: 15 (3.1%) were found to be malignant. Excisional biopsy was performed in 428 (89.4%) patients, an incisional biopsy was performed in 50 (10.4%) patients and fine-needle aspiration biopsy was performed one (0.2%) patient. 245(51.1%) of the 479 biopsies were found intraosseous lesion (IL) whereas n:234(48.7%) were found to be extraosseous lesion (IL). 25.2% (n=121) of total biopsies were found Inflammatory Cysts(IC). Developmental Cysts (DC) constitute 13.3% (n = 64) of the total biopsies. Non-odontogenic cysts ratio were %3.5 (n=17). Also; locations of the lesions were listed in Table I. 5.4% (n=26) of the total biopsies were benign odontogenic tumors (BOT). Benign non-odontogenic tumors (BNOT) were seen with a ratio of 8.7% in total biopsies (n=42) in 9 different regions of the oral cavity.

Malignant lesions (ML) were observed at the rate of 3.1% (n=15). 2.1% (n=10) were in males and 1% (n=5) were in the females. ML was not observed on the lower lip. The most common ML was squamous cell carcinoma (SCC) with the rate of 33.3% (n=5) among all MLs. The second common lesions were a malignant mesenchymal tumor (MMT) and mucoepidermoid carcinoma with the rate of 13.3% (n=2). Verrucous carcinoma which is well-differentiated, low metastatic form of SCC (5) were seen at the rate of (6.6%) in all biopsies. Undifferentiated carcinoma was seen in only one (6.6%) patient who was 67 years old. Warthin's tumor, mostly seen in the parotid gland (5), was seen only one (6.6%) case in the biopsy results. In one (6.6%) case a high-grade malignant lymphoma infiltration was seen as a malign lesion. Poorly differentiated lung metastasis was observed in one (6.6%) case. Except for one malign lesion which was diagnosed as SCC in the left maxillary molar region, the rest of the malign lesions were found in the right maxillary molar region (Table II).

DISCUSSION

Biopsy is an important diagnostic tool for lesions ranging from simple periapical lesions to malignant lesions (4). The American Academy of Oral and Maxillofacial Surgery (AAOMP) recommends that any tissue removed from the patient be immediately sent for microscopic evaluation and diagnosis by the oral and maxillofacial pathologist. Moreover evidence-based treatment-modern dentistry and medicine be preferred when determining treatment choices are becoming increasingly common- is important. So it is simpler and more effective to determine treatment planning and follow-up with accurate diagnosis (5,6). Exfoliative cytology, oral brush biopsy, fine needle aspiration biopsy, punch biopsy, incisional biopsy and excisional biopsy are different types of biopsy (7).

Odontogenic cysts are pathologic entities with well-described clinical, radiographic, and histologic characteristics (8). Odontogenic cysts are divided into two groups according to their developmental and inflammatory origins. In the literature, it was reported that, ICs were the most commonly seen lesions of the jaws and radicular cysts were the most common type of ICs that seen in the anterior maxilla and the posterior mandible in the second decade of life. Also similar to radicular cysts, dentigerous cysts were most commonly seen type of the DCs in same regions and decades (9,10). Dentigerous cysts are the most common of the jaw developmental odontogenic cysts and constitute approximately 20-24% of the epithelium-derived odontogenic cysts. Furthermore dentigerous cysts are most commonly seen in the 2nd and 3rd decades (11). Nunez-Urritia et al reported 410 cases which defined odontogenic cyst. There were 75.3% frequency of IC, 24.7% frequency of DC. Ledesma at al reported 304 cases and there were 43.7% frequency of IC, 55.4% frequency of DC, Mosqueda-Taylor et al. reported 43.5% frequency of IC, 55.3% frequency of DC and Ochsenius et al. reported 65.7% frequency of IC, 33.6% frequency of DC (12-15). In the present study, concordant with literature, most common ICs were radicular cysts with 90% ratio and the second most common IC were dentigerous cysts. Respectively radicular cysts were seen in right posterior mandibula and anterior maxilla, while dentigerous cysts were seen in left and right posterior mandibula. Despite the literature radicular cysts and dentigerous cysts were seen in 4th decade of life. Peker et al reported

Table I: Types of lesion, numbers and ratio of biopsy

Lesion Type	Total	Sex		Age (A.; S.D Min, Max)	Region								
		M	F		1	2	3	4	5	6	7	8	9
Inflammatory cytst	121 % 25.2	73 % 15.2	48 % 10	38.2 (±15.2) min: 8 max :73	13 % 2.7	25 % 5.2	19 % 3.9	22 % 4.6	16 % 3.3	26 % 5.4			
Developmental cysts	64 % 13.3	41 % 8.6	23 % 4.7	33.6 (±17.5) min: 6 max: 70	7 % 1.4	7 % 1.4	4 % 0.8	28 % 5.8	3 % 0.6	15 % 3.1			
Non Odontogenic Cysts	17 % 3.5	12 % 2.5	5 % 1	44.8 (±17.3) min: 6 max:66	3 % 0.6	3 % 0.6	3 % 0.6	4 % 0.8		2 % 0.4		1 % 0.2	1 % 0.2
Benign Odontogenic Tumour	26 % 5.4	11 % 2.3	15 % 3.1	35.8 (±20) min: 11 max:79	1 % 0.2		4 % 0.8	7 % 1.4	5 % 1	9 % 1.8			
Benign non odonoto-genic Tumour	42 % 8.7	17 % 3.5	25 % 5.2	39.9 (±15.4) min:6 max: 70	10 % 2.1	4 % 0.8	6 % 1.2	5 % 1	1 % 0.2	9 % 1.8	3 % 0.6	1 % 0.2	3 % 0.6
Malign Lesion	15 % 3.1	10 % 2.1	5 % 1	51.7 (±16.3) min:26 max: 80	2 % 0.4	3 % 0.6	4 % 0.8	2 % 0.4		1 % 0.2	2 % 0.4	1 % 0.2	
Benign reactive Lesion	178 % 37.1	72 % 15.1	106 % 22.2	44.4 (±19.9) min: 7 max:83	24 % 5	25 % 5.2	23 % 4.8	40 % 8.3	23 % 4.8	28 % 5.8	5 % 1	4 % 0.8	7 % 1.4
Benign Fibro-osseous Lesion	16 % 3.3	4 % 0.8	12 % 2.5	36.6 (±18.3) min: 8 max: 66	1 % 0.2	2 % 0.4	1 % 0.2	8 % 1.6	1 % 0.2	3 % 0.6			
Total	**479**	**240 % 50.1**	**239 % 49.9**	**40.5 (±18.3) min:6 max:83**	**61 % 12.7**	**69 % 14.4**	**64 % 13.3**	**11 5 % 24**	**49 % 10.2**	**93 % 19.4**	**10 % 2.1**	**7 % 1.4**	**11 % 2.3**

1->Maxilla right post. reg. 4->Mandibula left post. Reg 7->Right buccal mucosa reg.
2-> Maxilla anterior reg 5-> Mandibula anterior reg. 8->Right buccal mucosa reg.
3->Maxilla left post. reg 6->Mandibula right post. reg 9->Lips

M: Male; F: Female; A:Average; S.D: Standard Deviasion; Min: Minimum, Max: Maximum

TableII: Malign lesions: Rates and numbers

	Malign Lesions	Total	Age (Average, Min, Max)	Region								
				1	2	3	4	5	6	7	8	9
1	SCC	5 33.3%	59 Min:42 Max:80	2 13.3%	1 6.6%	1 %6.6					1 6.6%	
2	Malign Melanoma	1 6.6%	Age: 69			1 6.6%						
3	Verricious Carcinoma	1 6.6%	Age: 32				1 6.6%					
4	Indifferentiation Carcinoma	1 6.6%	Age: 67			1 6.6%						
5	Malign Mesenchymal Tumor	2 13.3%	59 Min:49 Max:51		1 6.6%	1 6.6%						
6	Mucoepidermoid Carcinoma	2 13.3%	42 Min:26 Max:58		1 6.6%		1 6.6%					
7	Warthin Tumor	1 6.6%	Age: 64							1 6.6%		
8	High-grade lympho-ma infections	1 6.6%	Age: 27							1 %6.6		
9	Lung Metastasis	1 6.6%	Age: 38						1 6.6%			

1->Maxilla right post. reg. 4->Mandibula left post. Reg 7->Right buccal mucosa reg.
2-> Maxilla anterior reg 5-> Mandibula anterior reg. 8->Right buccal mucosa reg.
3->Maxilla left post. reg 6->Mandibula right post. reg 9->Lips

Min: Minimum, Max: Maximum

1473 biopsy reports were enrolled and they formed three major groups Their study reported frequency of 29% developmental, reactive and inflammatory lesions of the jaw, 54% odontogenic and non-odontogenic cysts, 19% tumor and tumor-like lesions (16). Odontogenic tumors are a group of lesions which originate from odontogenic tissue. They may develop from the epithelial part of the tooth germ or from the ectomesenchymal cells or both of them (17, 18). Calcified cystic odontogenic tumor and keratocystic odontogenic tumor were transferred from the neoplastic category (2005) to cyst category (2017) in WHO 's Classification of Head and Neck Tumors, which was updated for the fourth time in January 2017 (19). In this study, calcifying cystic odontogenic tumors and keratocyst odontogenic tumors were evaluated in the developmental cyst classification. El-Gehanı et al. reported 2390 lesions of orofacial region and 405 cases (17%) constituted benign tumors. There were 148 (6.2%) odontogenic and 257 cases (10.7%) of non-odontogenic tumors of the orofacial region (20). These results are consistent with our study. Fernandes et al. reviewed the achieves of 19 123 specimens and they said that odontogenic tumors are uncommon lesions in this Brazilian population and malignant OTs are very rare. They reported 340 OTs which constituted 1.78% of oral cavity and jaw lesions. There were 338 (99.4%) benign lesions and only two (0.6%) malignant lesions (21). Our result showed rate of 3.1% malignant lesions, so we also preferred to classify the malign lesions within themselves. Squamous cell carcinoma (SCC) of the oral cavity and oropharynx is rare in patients younger than 50 years, and is primarily a disease that occurs in the 6th and 7th decades of men. The majority of the published literature is limited by the small numbers therefore impeding statistically meaningful analysis. For example, only three cases have been reported in a recent study in dental literature (22). In present study malignant pathologies were observed at the rate of 3.1% (n=15). The occupancy rate of oral cancer is 2-4% in all cancers (8). Although, malignancy rate of present study seems similar to literature, department of ear nose throat and department of plastic and reconstructive surgery also take role on diagnosis and treatment of oral malignancies. Hence, we think the actual malignancy rate can be higher in middle Anatolia. We believe that more comprehensive, interdisciplinary studies must be achieved to make clearer data on the incidence of malignant lesions. And we suggest that in routine examination of oral and maxillofacial region, even the smallest lesion should not be ignored. After clinical examination, it is important to perform biopsy in case of resistance of the lesion at least 2 weeks.

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