Abstrakt
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 malignant lesions, 25.2% (n=121) were infection cyst, 13.3% (n=64) were developmental cyst, 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 malignant lesion in this study.

Keywords: Pathology, Oral Pathology, Biopsy, Maxillofacial Biopsy

Öz
Patoloji, lezyonların kesin tanıması koyabilen ve lezyonların tedavisi için cerrahlar tarafından önemli bir disiplindir. Oral ve maksillofasiyel alanlardan alınan biyopsis 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 Klinigi bașvurulan hastalardan alınan biyopsis sonuçlarını içermektedir. Çalışma 479 biyopsis sonuçlarını değerlendirildikten. Bu çalışmanın sonuçları %96.9(n=464) iyi hüylu lezyon, %3.1(n=15) malign lezyon, %25.2(n=121) enfeksiyon kist, %13.3(n=64) gelişmiş kist, %37.1(n=178) benign re-active lezyon, %3.3(n=16) benign fibro-osseoz lezyon göstermektedir. Ülkemizde, oral kavitede lezyonlardan şikayetli olan hastalar, oral ve maksillofasiyel bölüm yerine plastik ve reconstruktif cerrahi ile kulak burun boğaz kliniği böümlerine başvurmaktadır. Bu çalışmada düşük malign lezyon sonucunun olası nedeninin bu durumun olabileceği düşünüldüktedir.

Anakter kelimeler: Patoloji, Oral Patoloji, Biyopsis, Maksillofasiyel Biyopsis

Corresponding Author: Dr. Öğr.Üyesi Kübra ÖZTÜRK
E-mail: kbrozturk89@gmail.com
ORCID: Emrah SOYLU 0000-0002-9828-5096
Kübra ÖZTÜRK 0000-0003-4447-0103
Cihan TOPAN 0000-0003-0978-8052
Osman A. ETÖZ 0000-0002-9175-4646
Alper ALKAN 0000-0002-7072-51X

*A part of this research was presented as a poster presentation at 8th International Congress of the Oral and Maxillofacial Surgery Society in Antalya.

Maal节能环保 Dergisi (Journal of Health Sciences) 2019; 28(2)
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 or region, right / left mandibular posterior region, right / left cheek region, maxillary / mandibular anteri or 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 63.5 (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 malignant 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- 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

<table>
<thead>
<tr>
<th>Lesion Type</th>
<th>Total</th>
<th>M</th>
<th>F</th>
<th>Age (A.; S.D Min, Max)</th>
<th>Sex</th>
<th>Region</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflammatory cysts</td>
<td>121</td>
<td>73</td>
<td>48</td>
<td>39.2 (±15.2) min:8 max:73</td>
<td>%</td>
<td>%</td>
<td>13</td>
<td>25</td>
<td>19</td>
<td>22</td>
<td>16</td>
<td>26</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Developmental cysts</td>
<td>64</td>
<td>41</td>
<td>23</td>
<td>33.6 (±17.5) min:6 max:70</td>
<td>%</td>
<td>%</td>
<td>7</td>
<td>7</td>
<td>4</td>
<td>28</td>
<td>3</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non Odontogenic Cysts</td>
<td>17</td>
<td>12</td>
<td>5</td>
<td>44.8 (±17.3) min:6 max:70</td>
<td>%</td>
<td>%</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Benign Odontogenic Tumour</td>
<td>26</td>
<td>11</td>
<td>15</td>
<td>35.8 (±12.0) min:11 max:79</td>
<td>%</td>
<td>%</td>
<td>1</td>
<td>4</td>
<td>7</td>
<td>5</td>
<td>9</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benign non odontogenic Tumour</td>
<td>42</td>
<td>17</td>
<td>25</td>
<td>39.9 (±15.4) min:6 max:70</td>
<td>%</td>
<td>%</td>
<td>10</td>
<td>4</td>
<td>6</td>
<td>5</td>
<td>9</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malign Lesion</td>
<td>15</td>
<td>10</td>
<td>5</td>
<td>51.7 (±16.3) min:26 max:80</td>
<td>%</td>
<td>%</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benign reactive Lesion</td>
<td>178</td>
<td>72</td>
<td>106</td>
<td>44.4 (±19.9) min:7 max:83</td>
<td>%</td>
<td>%</td>
<td>24</td>
<td>25</td>
<td>23</td>
<td>40</td>
<td>23</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benign Fibro-osseous Lesion</td>
<td>16</td>
<td>4</td>
<td>12</td>
<td>36.6 (±18.3) min:8 max:60</td>
<td>%</td>
<td>%</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>8</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>479</td>
<td>240</td>
<td>239</td>
<td>40.5 (±18.3) min:6 max:83</td>
<td>%</td>
<td>%</td>
<td>61</td>
<td>69</td>
<td>64</td>
<td>11</td>
<td>49</td>
<td>93</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 Deviation; Min: Minimum, Max: Maximum

Table II: Malign lesions: Rates and numbers

<table>
<thead>
<tr>
<th>Malign Lesions</th>
<th>Total</th>
<th>Age (Average, Min, Max)</th>
<th>Region</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCC</td>
<td>5</td>
<td>59 Min:42 Max:80</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Malign Melanoma</td>
<td>1</td>
<td>Age: 69</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Verruous Carcinoma</td>
<td>1</td>
<td>Age: 32</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Indifferentation Carcinoma</td>
<td>1</td>
<td>Age: 67</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Malign Mesenchymal Tumor</td>
<td>2</td>
<td>59 Min:49 Max:51</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Mucocoeplidoid Carcinoma</td>
<td>2</td>
<td>42 Min:26 Max:58</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Warthin Tumor</td>
<td>1</td>
<td>Age: 64</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>High-grade lymphomas</td>
<td>1</td>
<td>Age: 27</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Lung Metastasis</td>
<td>1</td>
<td>Age: 38</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

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
Acknowledgements

Authors want to thank to Assoc. Prof. Dr. Emre Bayram for statistical analysis.

REFERENCES


