

## Original Article

### Oral and Jaw Lesions in Adults: A 19-Year Retrospective Study In Northern Iran

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#### ABSTRACT

**Background and Objectives:** There are a few studies on histopathologic type of oral lesions especially from Iran. The aim of this study was to survey the oral lesions in Babol, northern Iran.

**Methods:** The histopathology records were retrospectively reviewed for all lesions of oral cavity and jaws, during the years 1990 to 2009. The data were collected from the archive of pathology and analyzed based on age, gender, site of lesion and histopathologic type.

**Results:** From the 465 studied specimens, the mean age was  $34.6 \pm 20.3$  years old; female to male ratio was 1.1: 1. The most frequent lesions were inflammatory/reactive (60%), tumoral (25%), cystic (14.2%), and tumor like lesions (0.8%), respectively. The most common inflammatory lesion was mucocele as 54 cases (19.4%). Ameloblastoma was the most common odontogenic tumor (55.5%). The most common odontogenic cyst was radicular cyst (44.8%), and the most common non-odontogenic cyst was mucus retention cyst (75%).

**Conclusion:** It seems that the malignant oral and jaw lesions have been more prevalent in this study compared to others, thus, the patients must be biopsied earlier to rule out malignant oral lesion in histologic examination.

**Keywords:** Oral Cavity, Jaws, Biopsy, Retrospective Study

#### Introduction

Oral lesions can be classified into four categories including inflammatory/reactive, cystic, tumoral, and tumor-like lesions. The most common reactive lesions consist

of irritation fibroma, pyogenic granuloma, and peripheral giant cell granuloma (1). Cystic lesions are divided into two groups as odontogenic and non-odontogenic, the most common odontogenic cysts in various studies include radicular cyst, dentigerous cyst, and odontogenic keratocyst

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(OKC), and the most prevalent non-odontogenic cysts consist of traumatic bone cyst, Stafne bone cyst, and incisive canal cyst (2-4).

Tumoral lesions are also divided into two groups as odontogenic and non-odontogenic, of which the most common types are various in the different studies and age groups (1, 4, 5). Almost always the clinical differentiation of these lesions is difficult, needs to lesion biopsy for pathologic diagnosis. Some of the lesions are observed in a particular age group and are more prevalent in one gender than the other, about which the statistics differ in different studies (6-9).

Few studies in Iran have addressed to epidemiological investigation of the oral lesions, and most of the researches in the different parts of the world have focused on a specific type of oral lesions. In this regard, the present study aimed to determine the prevalence of all types of oral lesions which can help clinicians to early diagnosis of common lesions in our region. All the slides have been revised one more time according to the latest WHO classification (2005).

## Materials and Methods

This cross-sectional study was carried out using the biopsy information of all patients with oral and jaw lesions sent to the Pathology Department of Shahid Beheshti Hospital, Babol, northern Iran, from 1990 to 2009. Those specimens with normal pathology report or with incomplete information were excluded from the

study. The patients' demographic information was obtained from the archive of pathology department, and the slides of all specimens were reviewed and classified according to the new WHO classification. In total, 465 specimens were studied. The anatomical site of lesions was determined for all the specimens, and the lesions were divided into four types, according to the pathology report, as tumor-like, tumoral, cystic, and inflammatory/reactive lesions. Data are presented as descriptive statistics.

## Results

Out of the 465 cases studied, with the mean age of  $34.6 \pm 20.3$  years, 219 were males (47.1%) and 246 (52.9%) were females (with female to male ratio of 1.1:1).

Most of the lesions were in buccal mucosa, 129 cases (27.7%), in mandible, 104 cases (22.4%), maxilla, 67 cases (14.4%), tongue, 61 cases (13.1%), lower lip, 50 cases (10.8%), gingiva, 37 cases (8%), and upper lip, 17 cases (3.7%), respectively. Among these lesions, 279 (60%), 116 (24.9%), 66 (14.2%), and 4 (0.9%) cases were found with inflammatory/reactive, tumoral, cystic, and tumor-like lesions, respectively.

In the age range of 21-40 years, cystic and tumoral lesions, and in the age range of  $20 \leq$  years, inflammatory lesions were more frequent. Table 1 represents all the lesions according to age groups and Table 2 shows the frequency of lesions according to anatomical site.

**Table 1-** The frequency of lesions according to different age groups in Shahid Beheshti Hospital, Babol, Iran

Age group	20≤	21-40	41-60	61-80	80≥	Total
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
<b>Lesion</b>						
<b>Inflammatory</b>	91 (32.6)	85 (30.5)	77 (27.6)	25 (9)	1 (4)	279 (100)
<b>Tumoral</b>	31 (26.7)	32 (27.6)	28 (24.1)	19 (16.9)	6 (5.2)	116 (100)
<b>Cystic</b>	22 (33.3)	30 (45.5)	10 (15.2)	4 (6.1)	0 (0)	66 (100)
<b>Tumor like</b>	3 (75)	0 (0)	1 (25)	0 (0)	0 (0)	4 (100)

**Table 2** - The frequency of different lesions according to anatomical site in Shahid Beheshti hospital ,Babol,Iran

Lesion Location	Inflammatory N (%)	Tumoral N (%)	Cystic N (%)	Tumor-like N (%)
Lower lip & Upper lip	51 (18.2)	14 (12)	0 (0)	2 (50)
Oral mucosa & Gingiva	124 (44.4)	39 (33.6)	3 (4.5)	0 (0)
Tongue	41 (14.7)	16 (13.)	2 (3)	2 (50)
Maxilla	25 (9)	9 (7.8)	30 (45.4)	0 (0)
Mandible	38 (13.6)	38 (32.8)	28 (42.4)	0 (0)
<b>Total</b>	<b>279 (100)</b>	<b>116 (100)</b>	<b>66 (100)</b>	<b>4 (100)</b>

The most common inflammatory lesions were respectively related to mucocele, 54 cases (19.4%), pyogenic granuloma, 36 cases (12.9%), inflammatory process, 29 cases (10.4%), peripheral giant cell granuloma, 28 cases (10%) , granulation tissue, 26 cases (9.3%), inflammatory hyperplasia, 11 cases (3.9%), lichen planus, 10 cases, non-specific ulcer, 10 cases, pemphigus vulgaris, 7 cases, fibrotic nodule, 7 cases, fibroepithelial polyp, 6 cases, gingivitis 3 cases, abscess, 3 cases, osteomyelitis, 2 cases, and the rest, 47 cases.

Among the 66 cases of cystic lesions, 58 (87.9%) cases were observed with odontogenic and 8 cases (12.1%) with non-odontogenic lesions. Odontogenic cysts respectively included radicular cyst, 26 cases (44.8%), dentigerous cyst, 19 cases (32.8%), odontogenic keratocyst (OKC), 12 cases (20.7%), and eruption cyst, 1 case (1.7%), and non-odontogenic cysts consisted of mucus retention cyst, 6 cases (75%), and epithelial inclusion cyst, 2 cases (25%).

Out of the 116 cases of tumoral lesions, 66

cases (56.9%) were benign and 50 cases were malignant (41.1%). Non-odontogenic tumors were the most common type of tumoral lesions, 98 cases. Four cases of tumor-like lesions included two cases of hamartoma and two cases of choristoma. The different types of tumoral lesions are shown in Table 3. There was no significant difference between the two genders in terms of the incidence of cystic lesions; however, tumoral lesions were more frequent in men than women (M:F=1.18:1) and inflammatory lesions in females than males (M:F=1:1.30).

### Discussion

Considering a wide age range of the participants, the present study can be a comprehensive investigation in this field.

Inflammatory lesions, as the most common lesions in this study, were more frequent in women and in the age range of  $\leq 20$  years. Similar results have also been achieved by Dhanuthai *et al.* but contradictory findings have been reported by Thorakkal in India (10,11). In Dhanuthai *et al.* study, mucocele and pyogenic granuloma were respectively the most prevalent inflammatory

**Table 3-** The frequency of different types of tumor and tumor-like lesions in Shahid Beheshti hospital, Babol, Iran

<b>Tumors</b>	<b>Frequency (%)</b>
<b>Odontogenic tumors</b>	
Ameloblastom	10(55.5)
Complex odontoma	3(16.6)
Odontogenic myxofibroma	2(11.1)
Odontogenic fibroma	1(5.6)
Calcified odontogenic tumor	1(5.6)
Cystic odontogenic tumor	1(5.6)
Total	18(100)
<b>Non-odontogenic tumors</b>	
Squamous cell carcinoma	27(27.6)
Fibroma	15(15.3)
Central Giant cell tumor	12 (12.2)
Pleomorphic adenoma	11(11.2)
Hemangioma	7(7.1)
Lymphoma	5(5.1)
Mucoepidermoid carcinoma	5(5.1)
Lymphangioma	4(4.1)
Schwannoma	3(3.1)
Lipoma	2 (2)
Adenoid cystic carcinoma	2 (2)
Adenocarcinoma	1(1)
Verrucous carcinoma	1(1)
Malignant melanoma	1(1)
Papilloma	2(2)
Total	98 (100)
<b>Tumor like lesions</b>	
Choristoma	2(50)
Hamartoma	2 (50)
Total	4 (100)

lesions however, in the researches by Thorakkal in South India and Effiom in Nigeria, pyogenic granuloma was the most common non-neoplastic lesion observed (10-12). After the inflammatory lesions, tumors had the most frequency in this study.

In consistence with Thorakkal study, the most common age for the incidence of tumoral lesions was 21 to 40 years in our study, in which out of

116 tumoral lesions, 85.5% (52% benign and 48% malignant) were non-odontogenic and 14.5% (83.3% benign and 6.7% malignant) were odontogenic tumors (11). These results are in accordance with those achieved by some studies (6, 13, 14). Ameloblastoma was the most prevalent odontogenic tumor in the present research, which is similar to some studies, and contradictory to Tamme *et al.* study in Estonia,

Guerrisi *et al.*'s. investigation in Argentina, and Ebenezer study, reporting odontoma as the most common odontogenic tumor (6,7,9,13-17). Squamous cell carcinoma was the most frequent non-odontogenic tumor in our study.

Cystic lesions were frequently observed in the age range of 21 to 40 years, as also indicated by Gehani study in Libya (18). Congruent with Dhanuthai research, odontogenic cysts were the most prevalent type of cystic lesions in the present study; nonetheless, radicular cyst, dentigerous cyst, and OKC were respectively the most common types of cysts in our study, and dentigerous cyst, radicular cyst, and OKC as the most common odontogenic cysts in that study (10).

In an investigation by Gehani *et al.* on 2190 specimens of oral lesions in Libya, 326 odontogenic cysts have been reported, among which the most frequent types were similar to those of our study (18). Likewise, in a study by Grossmann *et al.* in Brazil on 2812 specimens, 14.7% cases of odontogenic and 0.5% cases of non-odontogenic cysts had been reported, and the most common types were similar to those of our research. Mucus retention cyst was the most prevalent non-odontogenic cyst in our study and nasopalatine canal cyst in Grossmann investigation (19). From the 322 patients with cystic lesions, radicular cyst was the most common non-odontogenic cyst in Manor survey, in which the proportion of odontogenic to non-odontogenic cysts was similar to that of our study (1). Out of 8 cases of non-odontogenic cysts, 6 cases were mucus retention cyst in the present study, while, nasopalatine duct cyst was the most frequent non-odontogenic cyst in Butt study (3). Generally, the most common anatomical site in the present study was respectively related to oral cavity, mandible and maxilla. Cystic lesions were more prevalent in the maxilla and the mandible, respectively. The ratio of mandibular to maxillary tumoral lesions was 4:1, in terms of cystic lesions is in accordance with findings of

Gehani *et al.* study, and contradictory to Agir *et al.* (8, 18). In terms of tumoral lesions, the results achieved have been in line with Ajayi *et al.* study; whereas, in a study by Thorakkal *et al.*, tumoral lesions in the maxilla were reported to be more than that of the mandible (13, 11). In a research from China by Jing *et al.* on 1642 specimens, the ratio of maxillary to mandibular lesions was 1.4:1 (20).

## Conclusion

Taken all together, it seems that the malignant oral and jaw lesions have been more prevalent in this study compared to other investigations, therefore, the patients should be biopsied earlier in our region to rule out the malignant oral lesions.

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