Short Communication

Frequency of different oral lesions in children and adolescents in Babol, Northern Iran

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Received: 15 May 2013
Revised: 7 July 2013
Accepted: 9 July 2013

Abstract

Background: Few studies regarding oral lesions of children and adolescents were reported in the medical literature. The aim of this study was to determine the frequency of these lesions in patients from birth to 20 years old in Babol, Northern Iran.

Methods: The slides of all cases of oral lesions in children and adolescents, between 1990 and 2012 were obtained from the pathology archives of Shahid Beheshti Hospital and School of Dentistry, Babol University of Medical Sciences in Iran. The lesions were categorized as follows: cystic lesions, tumor/tumor-like lesions and inflammatory/reactive lesions. The data were collected and analyzed.

Results: The 244 retrieved cases accounted for 27% of total oral biopsies (8956) were performed during this period. Male to female ratio was 0.8. Inflammatory / reactive category (61.9%), tumor/ tumor-like category (23%) and cystic category (15.2%) were in order of frequency. Mucocele was seen in 55 (35.8%) of 151 cases of inflammatory/ reactive, centeral giant cell granoloma (CGCG) in 15 (26.8%) of 56 tumor/ tumor like and radicular cyst in 14 (37.9%) of 37 cystic lesions.

Conclusion: Our findings indicate that mucocele, CGCG and radicular cyst were frequent lesions in inflammatory / reactive, tumor / tumor like and cystic categories, respectively in our region.

Keywords: Oral lesion, Children, Adolescents

Caspian J Intern Med 2013; 4(4): 773-776

There are a few epidemiological studies on pediatric and adolescent oral lesions (1-3). No study was found about pediatric and adolescent oral lesions in Iran. On the other hand, almost all present studies were focused on specific type of lesions (1, 4-10). However, a large variety of oral lesions and some certain lesions occur more in this age group (11). It seems that according to few studies that reviewed all types of oral lesions, benign lesions such as cystic and inflammatory lesions are more common than tumor or tumor-like lesions (3, 10, 12, 13). In these two categories, mucocele as an inflammatory type of oral lesions is the most frequent and dentigerous cyst is more common than other cystic lesions (3, 10, 12-14). Among tumors, odontogenic tumors are the most common tumor in this age, including odontoma on top of the list (4, 13). Oral lesions have a lot of variety, therefore, information about these lesions are useful for early diagnosis and appropriate treatment. The aim of the present study was to determine the frequency of oral lesions in patients up to 20 years in Babol, Northern Iran.

Methods

From the total 8956 biopsy records of oral lesions between 1990 and 2012, 244 cases under 20 years of age were obtained from the archives of the Pathology Department of Shahid Beheshti Hospital and School of Dentistry, Babol University of Medical Sciences, Babol, Northern Iran.

Data including age, gender, anatomical site and pathological diagnosis in patients younger than 20 years of age were collected. For more insight to the data, the patients were divided into two age groups: 0-10 and 11-20 years. The lesions were categorized as follows: cystic lesions, tumor/ tumor-like lesions and inflammatory/reactive lesions. The histopathologic diagnosis of tumors was re-evaluated according to the WHO 2005 classification of tumors. In this study, the frequency of each lesion was determined.

Results

Two hundred forty-four cases with the mean age of 16.2±1.7 years (ranged 2-19 years) were evaluated. There were 136 female cases and 108 male cases (male to female ratio was 0.8). Inflammatory / reactive lesion was seen in 151 (61.9%) cases, followed by tumor/tumor like in 56 (23%) and cystic in 37 (15.2%). Inflammatory / reactive and cystic lesions showed slight female predilection. However, tumor / tumor like category was seen in males more than females. Mucocele was seen in 55 (35.8%) of 151 cases of inflammatory / reactive category. Other lesions in this category are shown in table 1. Centeral giant cell granoloma (CGCG) was seen in 15 (26.8%) of 56 tumor/tumor like category.

Table 1. The frequency of inflammatory/reactive lesions in 244 children and adolescents in Babol, Northern Iran.

Inflammatory / reactive lesions	Male No (%)	Female No (%)	Total No (%)
Mucocele	29 (53.7)	25 (46.3)	54 (35.8)
Granulation tissue	7 (28)	18 (72)	25 (16.6)
Pyogenic granuloma	8 (42.1)	11 (52.9)	19 (12.6)
Nonspecific inflammation	4 (21.1)	15 (78.9)	19 (12.6)
Peripheral gaint cell granuloma	6 (35.3)	11 (64.7)	17 (11.3)
Chronic non- specific ulcer	0 (0)	7 (100)	7 (4.6)
Irritation fibroma	3 (75)	1 (25)	4 (2.6)
Inflammatory hyperplasia	0 (0)	3 (100)	3 (1.2)
Granulomatous inflammation	0 (0)	1(100)	1 (0.7)
Lichen plannus	1 (100)	0 (0)	1 (0.7)
Mucormycosis	0 (0)	1 (100)	1 (0.7)
Total	58 (38.4)	93 (61.6)	151 (100)

Other lesions in this category also showed in table 2. Radicular cyst was seen in 14 (37.9%) of 37 cystic lesions and other lesions in this category are shown in table 3. The common location for mucocele was the lower lip (63%) and for both CGCG and radicular cyst was the mandible (80% and 71%, respectively).

Table 2. The frequency of tumor/tumor like lesions in 244 children and adolescents Babol, Northern Iran.

	Male No (%)	Female No (%)	Total No (%)
Tumor			
Odontogenic tumor			
Ameloblastoma	7 (100)	0 (0)	7 (12.5)
Odontoma	0 (0)	2 (100)	2 (3.6)
Adenomatoid odontogenic tumor	0 (0)	2 (100)	2 (3.6)
Odontogenic fibroma	0 (0)	2 (100)	2 (3.6)
Nonodontogenic tumor			
Central gaint cell granuloma	13 (86.7)	2 (13.3)	15 (26.8)
Hemangioma	6 (66.7)	3 (33.3)	9 (10.1)
Lymphangioma	3 (50)	3 (50)	6 (10.7)
Ossifying fibroma	0 (0)	3 (100)	3 (5.4)
Lymphoma	2 (66.6)	1 (33.3)	3 (5.4)
Pleomorphic adenoma	1 (50)	1 (50)	2 (3.6)
Fibroma	2 (100)	0 (0)	2 (3.6)
Tumor like			
Coristoma	3 (100)	0 (0)	3 (5.4)
Total	37 (66.1)	19 (33.9)	56 (100)

Table 3. The frequency of cystic lesions in 244 children and adolescents, Babol, Northern Iran.

Cystic lesions	Male No (%)	Female No (%)	Total No (%)
Odontogenic Cyst			
Radicular cyst	4 (28.6)	10 (71.4)	14 (37.9)
Dentigreous cyst	6 (46.1)	7 (53.9)	13 (35.2)
Odontogenic cyst (unspecified)	0 (0)	4 (100)	4 (10.8)
Odontogenic keratocyst	2 (100)	0 (0)	2 (5.4)
Erruption cyst	0 (0)	1 (100)	1 (2.7)
Calcifying odontogenic cyst	0 (0)	1 (100)	1 (2.7)
Paradental cyst	0 (0)	1 (100)	1 (2.7)
Nonodontogenic Cyst			
Glubolomaxillary	0 (0)	1 (100)	1 (2.7)
Total	12 (32.4)	25 (67.6)	37 (100)

Discussion

The frequency of all oral lesions in this age group (27%) in the present study was more than the frequency reported from Brazil, Turkey, UK (3, 12, 14, 15) and Thailand, because we considered the adolescents. On the other hand, studies from the United States and African revealed 12% and 25%, respectively, because of wider age range in their studies (16, 17).

In agreement with some studies, no obvious sex predilection was found in our study (3, 12). However, a few reports showed male predilection (1, 2, 14, 18). This difference may be due to geographic area, ethnic group, population and study design. In the present study, the number of cases increased with age**.** This is especially observed in inflammatory/ reactive and cystic lesions. Some reports showed similar results (2, 3, 12, 14, 17). In our study, the most common category was inflammatory / reactive lesions. This is in consistent with the studies performed in Brazil, Taiwan, Turkey and the United States (3, 13, 14, 16). However, a study done in Thailand reported that cystic lesions were the most common pediatric oral lesions (12). Consider that inflammatory/reactive lesion are more symptomatic than tumor and cystic lesions in this age group, and may be the reason of higher prevalence of this category in our study.

Mucocele was the most common lesion in our study, representing 22.13% of all oral lesions and 35.8% of the inflammatory/reactive lesions. This finding was similar to the other previos studies (2, 3, 16, 17). In our study, lower lip was the most common anatomical site for mucous extravasation phenomen (mucocele). This is in agreement with those reported by Wang et al (13). This lesion is more prevalent in children than in adults and is thought to be as a result of mechanical trauma like lip bite.

In the present study, the tumor/tumor like category had the second order of frequency and the number of non-odontogenic tumors were more than odontogenic tumors (40 vs. 13). CGCG was the most common non-odontogenic tumor (15 cases). These results are in agreement with studies from Germany, UK and Turkey (8, 14, 15). Das and Das reported that neoplasm was the second most frequent category and papilloma was the most frequent (16). The second most common nonodontogenic tumor in our study was hemangioma. Similar to some previous studies, this tumor was one of the leading benign neoplasms of pediatric and adolescent oral lesions (18, 19).

Ameloblastoma was the most common odontogenic tumor in our study, followed by odontoma. This finding was contrary to the studies performed in Argentina, Brazil and Libya (1, 4, 7). However, studies done in Thailand and Uganda showed that ameloblastoma was the most common odontogenic tumor (5, 12). The cystic lesions in our study was relatively low (15.2%), however, in Thailand, it was the most common lesion (35%). Studies reported from Turkey, Das and Das indicate that cystic lesions were in the third category (14, 15). In our study, radicular cyst was the most common cystic lesion followed by dentigerous cyst, that was similar to the results of some studies (14, 15, 17). However, studies performed in Thailand and pelota, Brazil showed that dentigerous cyst was the most frequent cystic lesion (2, 12). The retrospective evaluation of our cases as well as the cases evaluated only in one region of our country may be the weakness of this study.

In summary, our results showed that mucocele, central giant-cell granuloma and radicular cyst were the most prevalent lesions in our region.

Acknowledgments

The authors wish to thank the personnel of Shahid Beheshti Hospital for collecting the data.

Funding: Self-funded
Conflict of interest: No conflict of interest to declare.

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