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WORD COUNT 2441
TIME SUBMITTED 24-JAN-2024 03:04PM
PAPER ID 106395037

The prevalence of oral cystic lesions in Basrah Province during the period (2011-2020)

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Abstract

Objectives: This study aimed to evaluate the prevalence of oral cystic lesions in Basrah and to compare with other studies.

Materials and methods: During the period between 2011-2020, a record of 128 biopsies from patients with oral cystic lesions diagnosed in the histopathology laboratories of Al-Sadder Teaching Hospital, Al-Basrah General Hospital and College of Dentistry/University of Basrah. The data collected were analyzed according to the age, the sex, the type of oral cystic lesions and to the site of distribution.

Results: Among the 128 oral cystic lesions reports, 66 (51.6%) found in males and 62 (48.4%) were in females. Radicular cysts were the commonest oral cystic lesions 90

(70.31%), followed by odontogenic keratocysts 19 (14.48%), dentigerous cysts 9 (7.03%), epidermoid cysts 6 (4.69%) and then dermoid and lymphoepithelial cysts 2 (1,56%) for each of them. The dominant part of the lesions has influenced the mandible 73 (57.03%), followed by maxilla 45 (35.61%) and then the soft tissue 10 (7.81%). The oral cystic lesions included patients from the first to eighth decades of life and the he highest incidence of these lesions occurred at the age group 11-20, 37 (28.91%).

Conclusion: The majority of oral cystic lesions were of a radicular cysts type and generally in a young adult males, that means to increase the educations among those patients to improve their oral health .

Keywords: Oral cystic lesions, Radicular cysts, Epdermoid cysts, Prevalence, Biopsy

Introduction

A true cyst is defined as a pathological cavity that lined by epithelium surrounding a lumen with a fluid or semifluid contents and encased by a capsule, the cysts can develop in the bone or the soft tissue and it may expand to reach a size that damage the nearby structures including the teeth [1].

Clinically , cyst represents unspecific appearance, some cases it develop as a painless swelling with a smooth surface and normal covering tissues, its diagnosis depend on careful clinical, radiographical and histopathological examination [2].

Menditti et al., [3] had classified the oral cystic lesions in their study in to:

1) CYSTS AND PSEUDOCYSTS OF ORAL BONE TISSUE AND PERIODONTAL

a) Odontogenic cysts

- " Inflammatory origin " : Radicular-necrotic cyst; Collateral inflammatory cyst (Paradental cyst, Juvenile paradental cyst)
- " Development origin " DC (dentigerous cysts): follicular, germinal, eruptive cysts
- Periodontal tissue (parodontal cysts)/BOC
- Gingival cysts of infants (newborn gingival cysts, dental lamina cysts, Bohn's nodules)

b) Non-odontogenic cysts

- Mid-palatal-raphe non-odontogenic cysts of infants (Epstein's pearls)
- Nasopalatine duct/midline palatine cyst

c) Cysts of so-called " Globulo-maxillary area "

d) Cysts with malignant variants and misdiagnosis

OOC (orthokeratinized odontogenic cyst)

COC (calcifying odontogenic cyst)

Glandular cysts (GOC: glandular odontogenic cyst; sialo-odontogenic cyst)

e) Cysts and pseudocysts of the maxillary sinus

f) Pseudocysts of the bone basis of the oral cavity: SBP (Solitary bone pseudo-cysts);

ABP (aneurysmal bone cysts)

2) SOFT TISSUE NON-ODONTOGENIC CYSTS

• Cysts related to the lymphatic tissue (cystic hygroma; lymphoepithelial cysts),

thyroglossal duct cyst

• Salivary cysts and pseudo-cysts

• Nasolabial cyst (synonyms: nasoalveolar cyst, Klestadt's cyst)

• DEC (dermoid and epidermoid congenital cysts)

It would be interesting to study the distribution of the oral cystic lesions in both sexes and in different age groups since there are many processes are going on in the maxillofacial regions that associated with cyst formation as deciduous and permanent teeth odontogenesis in pediatric age, on the other hand there is damage associated with caries and trauma in all age groups [4].

Cystic oral lesions are found frequently in patients of both sexes and different age groups attending the oral and maxillofacial department in Basrah hospitals and health centers, but there are no studies discuss the prevalence of these cases in Basrah, therefor this study was carried out to survey the frequency of such lesions.

Methods

This study carried out in Basrah, during the period between 2011-2020 with a record of 128 biopsies, 66 (51.6%) male and 62 (48.4%) female from patients with oral cystic lesions diagnosed in the histopathology laboratories in Al-Sadder Teaching Hospital, Al-

Basrah General Hospital and Oral Diagnosis Department/College of Dentistry/ University of Basrah. The date collected were categorized depending on the age group, the sex, the types of the oral cystic lesions & anatomical sites of distribution. The information got were statistically analyzed utilizing the (SPSS) programming for windows version (20).

Results

Among the 128 recorded biopsies of oral cystic lesions, the bone tissue cysts (odontogenic cysts) were found to be more common than the soft tissue cysts (non-odontogenic cysts). The radicular cyst was the commonest cystic lesions 90 (70.31%), followed by odontogenic keratocyst 19 (14.84%), dentigerous cyst 9 (7.03%), epidermoid cyst 6 (4.69%) and the lowest percentage appeared in both dermoid and lymphoepithelial cyst 2 (1.56%), as shown in **Table 1**.

Table 1: Distribution of oral cystic lesions according to the type

Type of cyst	**Number**	**%**
Radicular cyst	90	70.31
Odontogenic keratocyst	19	14.84
Dentigerous cyst	9	7.03
Epidermoid	6	4.69
Dermoid	2	1.56
Lymphoepithelial cyst	2	1.56
Total	128	100
X^2= 250.493		*P≤0.0001*

The radicular cyst was found to be the commonest oral cystic lesions in both of male and female, 46 (69.70%) and 44 (70.97%) respectively, while the dermoid and the lymphoepithelial cysts were the lowest lesions encountered for the both gender, they were 1 (1.51%) and 1 (1.61%) respectively. In addition, it has been found that the odontogenic keratocyst were more common in female 11 (17.74%) than male 8 (12.12%), as shown in **Table 2.**

Table 2: Distribution of oral cystic lesions according to the gender

Type of cyst	**No (male)**	**% (male)**	**No (female)**	**% (female)**	X^2 (p value)
Radicular cyst	46	69.70	44	70.97	0.024 (0.877)
Odontogenic keratocyst	8	12.12	11	17.74	1.412 (0.235)
Dentigerous cyst	7	10.60	2	3.23	4.916 (0.027)
Epidermoid	3	4.54	3	4.84	0 (1)
Dermoid	1	1.51	1	1.61	0 (1)
Lymphoepithelial cyst	1	1.51	1	1.61	0 (1)
Total	66 (51.6)	100	62 (48.4)	100	

Concerning the distribution of biopsied oral cystic lesions according to the age of patients, this study found that the age group (11-20) to be the more affected with oral cystic lesions, it was 37 (28,91%) from total patients and with a female predominancy, and the age group (71-80) was the least affected by cystic lesions in general, it was 3 cases only. Whereas, two age groups (41-50) and (51-60) recorded nearly the similar percentage, they were (11.72%) and (10.94%) respectively. The age groups (61-70) not recorded any cases, as it was shown in **Table 3**.

Table 3: Distribution of oral cystic lesions according to the age group

Age group	**No**	**%**	**Male**	**Female**
0-10	8	5.47%	6	2
11-20	37	28.91	15	22
21-30	30	23.44	16	14

31-40	21	16.41	19	2
41-50	15	11.72	3	12
51-60	14	10.94	6	8
61-70	0	0	0	0
71-80	3	2.34	1	2
Total	128	100	66	62
$X^2=66.934$, $p\leq 0.000$				

Regarding the distribution of oral cystic lesions to the site, the most common site was the mandible 73 (57.03%), followed by the maxilla 45 (35.16%) and then the soft tissue 10 (7.81%), as it was shown in **Table 4**.

Table 4: Distribution of oral cystic lesions according to the site

Site	**No**	**%**
Maxilla	45	35.16
Mandible	73	57.03
Soft tissue	10	7.81
Total	128	100
$P\leq 0.0001$		$X^2= 54.210$

Discussion

The histopathological data of oral cystic lesions in a particular population is very important to establish an accurate diagnosis and treatment. The current study represents the oral cystic lesions in Basrah city and the frequency in different age groups, gender and the site but it was difficult to make a comparison with the findings of other studies because of the different classification systems or focusing on a specific type of jaw cysts as odontogenic or non odontogenic cysts, and studying these lesions in a certain group of population as pediatric age groups.

In this study, it was well established that the radicular cyst is the most common type of oral cysts, it represented 90 (70.31%) of all cases, this was consistent with [5-7], but inconsistent with other study who reported that the dentigerous cyst is more frequent than radicular cyst, and this can be explained by the lack of enough biopsies since it is difficult to obtain a biopsy after tooth extraction [8, 9]. The high incidence of radicular cysts may be explained by the poor oral hygiene of the general population besides the lack of public incentives that preventing oral infections, since these cysts are inflammatory in origin caused by dental caries development that can progress to pulp necrosis, the inflammatory response induces the proliferation of epithelial cell rests of Malassez and the formation of a periapical lesions, such as radicular cysts [10].

The highest frequency of cystic lesions in jaws were seen in the age groups (11-20 years) and (21-30 years), this can be explained by the oral hygiene care in each age groups , the young adults are more likely to neglect their oral health and can subject to mechanical trauma ,also the period of wisdom tooth eruption may associated with dentigerous cyst development, this was in agreement with [4,11] but disagree with [6,12]. The importance of the age analysis is to understand the characteristics of each age group since humans show changes in physiological and behavioral actions in each stage of life.

Besides, this study presents that oral cystic lesions showed a higher frequency in males 66 (51.6%) than females 62 (48.4%), this may be explained that the males are customarily neglected their teeth and can sustain more truma to their teeth compared with females, which may all be the causes of cyst formation. This results agrees with [13-17], but disagree with [18].

Moreover, oral cystic lesions were more common in mandible 73 (57.03%) which agree with other studies [18,19] but disagree with other study [20] who reported that maxilla is the more common sites for oral cystic lesions.

Conclusion

This study presents the frequency of oral cystic lesions in Basrah population. In general, oral cystic lesions were more common in males than females which were similar to other studies. Radicular cysts (inflammatory origin cysts) were the most widely recognizable oral cystic lesions and among young adult patients, which means to increase education among such patients to improve the status of their oral health. More studies on a large samples will help to determine the oral cysts frequency accurately and to be an essential steps in early detection and management of these benign but a potentially destructive lesions.

Disclosure

None

Funding

None

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