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## Salivary gland mucoceles: A clinical study of 103 cases

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### Abstract

Mucocele is a tissue swelling composed of pooled mucus that escaped into the connective tissue from a severed salivary excretory duct (extravasated).

In the present study 103 cases of mucoceles reviewed from the records of patients at the Department of the Oral Pathology, faculty of Dentistry, Baghdad University over 11 years period (1982-1992). Mucoceles were statically analyzed according to age, gender, site of occurrence and type.

It was found that a greater number of mucoceles cases 37(36%) occur in patients at 2<sup>nd</sup> decade of age followed by 29(28.2) of cases occurred in 3<sup>rd</sup> decade of age. Mucoceles were occurred more in males than females 57(55.2%) ,46 (44.8%), respectively.

Lower lip was the predominant site for occurrence of mucocele 84(81.6%) followed by the floor of the mouth 12(11.7%). The most frequent type of mucocele was of extravasated type 100(97.1%) whereas it was only 3(2.9%) for mucous retention type.

**Key words: Mucocele, Salivary gland cyst.**

### Introduction

Extravasation mucocele (EVM) is a tissue swelling composed of pooled mucus that escaped into the connective tissue from a severed salivary excretory duct. At the site of severance there will be a pool of mucus that distend the surrounding tissue<sup>(1)</sup>.

The most common cause of the EVM is trauma from biting mainly during mastication that lead to injury of minor salivary gland of the oral cavity. Rarely EVMs occur after injury due to surgical procedure in oral cavity but a case report of EVM was resulted followed vermilionectomy<sup>(2)</sup>.

EVMs are most commonly located in the lower lip. The majority of the

studies have noticed that the lower lip was the commonest site for occurrence of EVMs and with a less extent occurrence in buccal mucosa, floor of the mouth, ventral surface of tongue and palate<sup>(1,3-7)</sup>.

EVM occurs over a wide age range but most patients are under 30 years of age and a peak incidence in the second decade<sup>(1,3,4,5,8)</sup>. EVM is rarely found in babies but some authors have reported 2 cases of EVMs in a ten weeks old baby<sup>(9)</sup> and in a one month old baby<sup>(10)</sup>.

Clinically EVM presents as a bluish or translucent submucosal swelling and there may be a history of rupture, collapse and refilling which may be

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repeated<sup>(3)</sup>.

Histologically EVM typically consist of mucin filled cavity or cavities lined by inflamed granulation tissue whereas retention mucoceles are lined by epithelium of ductal type<sup>(1)</sup>.

Retention mucoceles are less common than EVMs and are more predominant in old ages more than 50 years(1-4,11,12).

Mucoceles may affect the major salivary gland mainly submandibular<sup>(13-16)</sup> and also may affect the maxillary sinus wall<sup>(1)</sup>.

Cases of superficial mucoceles of the lip and oral mucosa have been reported<sup>(17-19)</sup>, they may clinically and histologically resemble blister diseases.

Ranulas are mostly mucous extravasation cysts represent swellings of the floor of the mouth resemble a frog's belly<sup>(3)</sup>.

Surgical removal and marsupialization are the treatment for different types of mucoceles<sup>(1,3,4,8)</sup>.

## Materials and Methods

Data collected in this study were obtained from the files of the patients registered in the Department of the Oral Pathology, faculty of Dentistry , Baghdad University over 11 years period ( 1982-1992).The clinical features recorded included age ,gender, site and type of mucocele . The diagnoses of mucoceles at that period was confirmed by histopathological examination. All specimens diagnosed were stained by Hematoxyline and Eosin stain.

Statistical analysis of 103 cases of mucoceles was done. The aim of the present study is to establish a relative frequency and distribution of mucocele according to gender, age, site and type and also to provide a baseline data for further study.

## Results

The present study showed that mucoceles were occurred in different ages with a peak incidence in the second decade 37(36%), followed by 3<sup>rd</sup> decade 29(28.2%) and 4<sup>th</sup> decade 18(17.5%). The 5<sup>th</sup> decade was the least affected by mucocele 7(6.7%) ( table 1).

Table 2 reveals the distribution of mucoceles according to gender .Of 103 cases of mucoceles 57(55.2%)cases were observed in males which were higher than in females 46(44.8%).

Regarding the site of occurrence of mucoceles, the results are illustrated in table 3. Mucoceles were seen most frequently in lower lip 84(81.6%) followed in a decreasing order by floor of the mouth 12(11.7%), palate 3(2.9%), tongue and buccal mucosa 2(1.9%) for each.

The results of this study revealed that EVMs were the most predominant type 100(97.1%), whereas the mucous retention cyst was only 3 cases (2.9%) (table 4).

## Discussion

In the present study 103 cases of mucoceles were clinically analyzed .Table1 demonstrates the distribution of mucoceles according to age. It was. It was found that a greater number of mucoceles cases 37(36%) occur in patients at 2<sup>nd</sup> decade of life and this result was in agreement with that of other studies<sup>(4,5,8,11,12)</sup>.

The distribution of mucoceles according to gender is shown in table 2.The frequency of mucocele was noticed to be higher in males 57 (55.2%) than females 46 (44.8%). This finding is supported by study done in Germany by Seifert et al<sup>(11)</sup>, but a study done in Korean observed that females were affected more than males 56%, 44% respectively<sup>(4)</sup>.

Whereas other studies have found that males and females were almost equally affected by mucoceles<sup>(5,8)</sup>.

The site of mucocele is explained clearly in table 3. The majority of mucoceles were located at the lower lip 84(81.6%) which satisfy the findings of other studies<sup>(4,5,7,8,11)</sup>. Almost of the studies and the present one confirm that lower lip was the most frequent site for trauma leading to injury of minor salivary gland and consequently mucocele will result. On other hand trauma during mastication to the buccal mucosa also occurred frequently but incidence of mucocele is not high, this may be attributed to less number of minor salivary gland at this area, or injury to this area is not enough to cause tearing of salivary gland duct.

Mucoceles of the oral cavity are classified as extravasated and retention types. The extravasated type consists of extravasated mucin in connective tissue and the retention mucoceles result from retained mucin in an epithelial-lined cavity usually a dilated duct of minor salivary gland<sup>(20)</sup>

EVM was the most frequent type of mucocele found in the present study 100(97.1%) while it was less frequent for mucous retention type 3(2.9%) table 4, these findings are similar to that of other studies<sup>(4,5,8,11,12)</sup>.

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Table 1: Distribution of mucocele according to age groups

Age group	Number of patients
1--10	11(10.7%)
11--20	37(36%)
21--30	29(28.2%)
31--40	18(17.5%)
41--50	1(0.9%)
51--60	7(6.7%)
Total	103(100%)

Table 2: Distribution of mucocele according to gender

Age group	Female	Male	Total
1--10	5(4.9%)	6(5.8%)	11(10.7%)
11--20	19(18.5%)	18(17.5%)	37(36%)
21--30	8(7.8%)	21(20.4%)	29(28.2%)
31--40	8(7.8%)	10(9.7%)	18(17.5%)
41--50	0	1(0.9%)	1(0.9%)
51--60	6(5.8%)	1(0.9%)	7(6.7%)
Total	46(44.8%)	57(55.2%)	103(100%)

Table 3: Distribution of mucocele according to site

Age group	Lower lip	Floor of mouth	Palate	Tongue	Buccal mucosa
1--10	8(7.77%)	1(0.971%)	1(0.97%)	1(0.97%)	0
11--20	31(30.10%)	5(4.854%)	0	1(0.97%)	0
21--30	24(23.30%)	3(2.913%)	0	0	2(1.9%)
31--40	17(16.51%)	0	1(0.97%)	0	0
41--50	1(0.97%)	0	0	0	0
51--60	3(2.91%)	3(2.913%)	1(0.97%)	0	0
Total	84(81.6%)	12(11.7%)	3(2.9%)	2(1.9%)	2(1.9%)

Table 4: Distribution of mucocele according to type

Type	Number of cases
Mucus extravasation cyst	100(97.1%)
Mucus retention cyst	3(2.9%)
Total	103(100%)