

## A SPECTRUM OF ORAL MUCOCELES: HISTOPATHOLOGY AND MANAGEMENT

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### ABSTRACT

*Oral mucocele an accessory salivary gland lesion is a benign neoplasm and one of the commonest lesions of the oral cavity. These lesions could be present in other parts of the body but are more common in the mouth and the commonest site is the lower lip followed by cheek and floor of the mouth. Oral mucoceles are basically pseudocysts formed as a result of pooled mucous accumulation, the oral mucocele prevalence, 2.5 lesion per 1000 population in America, in Sweden 0.11% and Brazil 0.08% respectively. These represent 17th commonest lesion in the oral cavity. Histologically the mucocele is divided into two categories, mucous extravasation mucocele and mucous retention mucocele. This descriptive retrospective study was conducted in the department of oral and maxillofacial surgery at Khyber College of Dentistry, Peshawar from January 2016 to December 2018 to determine the spectrum of oral mucoceles which include its age, site, gender, clinical, histopathological types of oral mucocele. The reports of 54 patients were retrieved over a period of 2 years were included in the study. The age range of these patients was from 12-50 years with a mean of 29.25 years and SD of +11.57. The most common type of oral mucocele was the extravasation type (70%) and was most commonly found on the lower lip and in younger age group patients. The patients were managed with local excision/enucleation under local or general anesthesia.*

**Key Words:** Lip Mucocele, Histopathology, Extravasation, Retention, Khyber College of Dentistry

### INTRODUCTION

Oral mucocele an accessory salivary gland lesion is a benign neoplasm and the common lesion of the oral cavity. Oral mucocele is characterized by one or more soft, smooth, painless translucent, spherical fluctuant nodules usually asymptomatic.<sup>1</sup> These lesions could be present in other parts of the body but are more common in the mouth and the commonest site is the lower lip then followed by the cheek and floor of the mouth. Diagnosis of this lesion can be done by clinical findings alone.<sup>2</sup> Oral mucocele occur due to trauma or obstruction of the glands. They are basically pseudo cysts formed as a result of pooled mucous accumulation. The prevalence of oral mucocele was 2.5 in 1000 population of America, and in Sweden 0.11%, Brazil

0.08% respectively. These represent 17<sup>th</sup> commonest lesion in the oral cavity.<sup>3</sup>

Histologically the mucocele is divided into two categories, mucous extravasation mucocele and mucous retention mucocele. The mucous extravasation phenomena commonly occur on the lower lip in minor salivary glands and are common in young adults and children. There is pooling of mucous in connective tissue cavity which lacks an epithelial lining. The mucous retention phenomena are true cysts which have an epithelial lining are found in older age group and in this category the major salivary glands are involved.<sup>4</sup>

Oral mucocele is dome-shaped enlargements with epithelium intact.<sup>5</sup> The clinical presentation with respect to size, site, aetiology, appearance and symptoms is very important because it can differentiate the benign from the premalignant benign lesions, Confirmation by histopathology and excision surgically are important and necessary.<sup>6</sup> The mucous extravasation mucocele occur as a result of lip biting habits and the mucous retention mucocele occur as a due to obstruction of the salivary gland, these lesions recur even after healing when liberation of the viscous fluid is pooled out. After few weeks to months more fluid accumulates and lesions recur. This cycle of refilling, rupture and collapse continues to occur for months.<sup>7</sup>

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Mucocele size ranges from few millimetres to several centimetres across which depends upon its location. There are two patterns histologically, one is an intact epithelium lined duct it dilates and forms a cyst, this is mucin filled with inflammatory debris or extravasated mucin in the stroma which has granulation tissue with inflammatory infiltrate and histiocytes.<sup>8</sup> Fine needle aspiration cytology and radiograph can exclude the differential diagnosis which are haemangioma, lipoma, soft tissue abscess, oral lymphangioma, benign and malignant salivary gland neoplasms, gingival cysts and pyogenic granulomas and can also exclude mucoepidermoid CA and adenoid cystic CA on the basis of histopathology.<sup>9</sup>

The aim of present study to highlight importance of the histopathological diagnosis in these common oral pathologies so as to properly manage them. Histological analysis plays a very important part in confirming diagnosis of an oral mucocele. As the literature shows that the extravasation type is associated with more recurrence.

**METHODOLOGY**

This descriptive study was conducted in the Oral and Maxillofacial surgery department Khyber College of Dentistry, Peshawar. After taking permission from the hospital review board the clinical records were collected from the department. The study duration was 2 years i-e from January 2016 to December 2018. The descriptive data of the patients was compared and evaluated to the previously accepted data in literature. Objective of present study was to determine the spectrum of oral mucocele which include its clinical and histopathological types of oral mucocele, and its effect on the management protocol. In this study the study variables were age, gender, type, location and histopathological diagnosis. The histopathological difference of the lesion were seen by taking out the biopsy records and dimensions were taken from the clinical records which were mentioned in it. The data were entered in the SPSS version 20 and the results were analysed by descriptive statistics and the results were presented using tables and charts.

**RESULTS**

A total of 54 patients were included in the study. A detailed review of the patient’s records were done and the age, gender, site, histopathological types of the oral mucocele of those patients were recorded. The age range of these patients were 12-50 years with age mean of 29.25 and SD±11.57. Males were commonly affected then females with a male - female ratio of 2:1 (36 males and 18 females) fig 1. The histopathological results of oral mucocele of those patients were retention and extravasation types mucocele out of the total 54

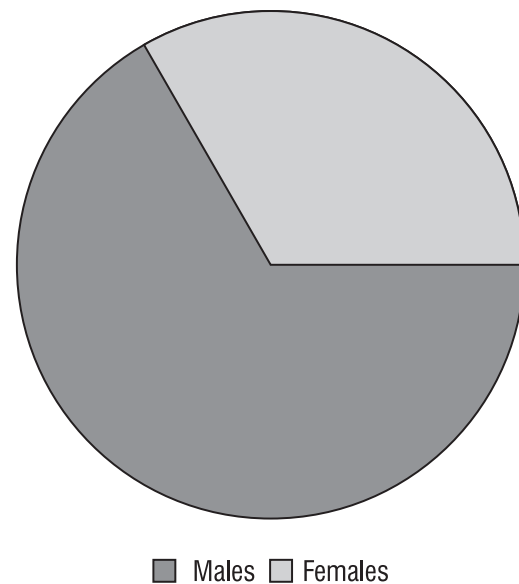


Fig 1: Age wise distribution of oral mucocele

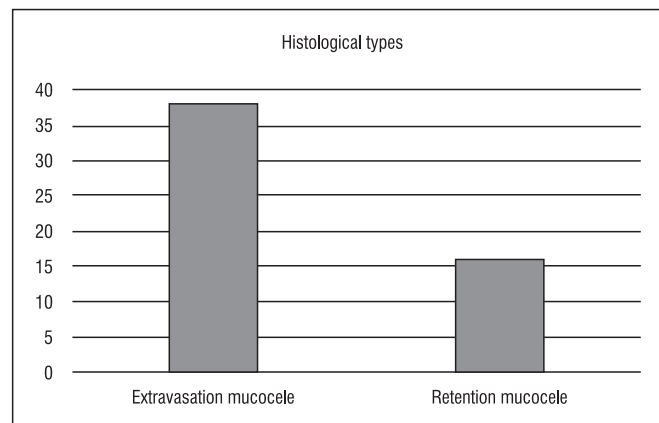


Fig 2: Histological types of oral mucocele

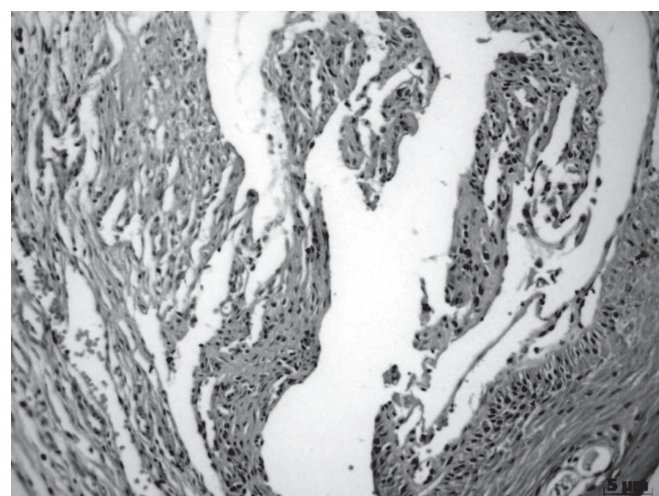


Fig 3: Photomicrograph of retention type mucocele

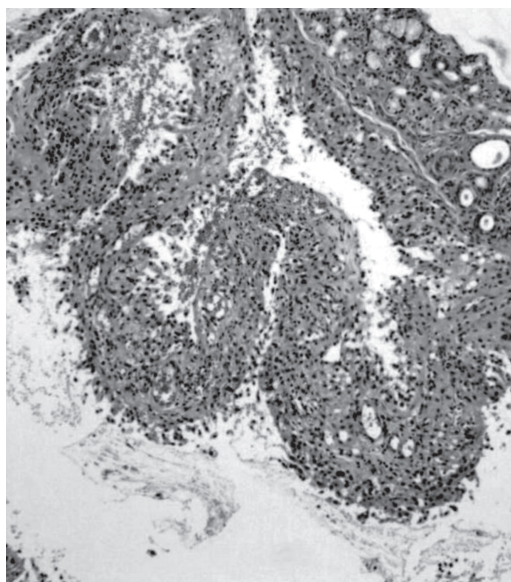


Fig 4: Photomicrograph of extravasation type mucocele

patients 38(70%) were extravasation type mucocele and 16 (30%) were recorded as retention type mucocele fig 2. The microscopic difference between the two histological types of mucocele was that the extravasation type mucocele had a mucin filled stroma along with granulation tissue, there were few inflammatory infiltrate and few histiocytes with no epithelial lining. The retention type had an intact epithelial lining which was filled with mucin and inflammatory debris Fig 3,4. The extravasation type were more common in younger group (13-26) years while the retention type were more common in older group (42-50) years. Most common site was the lower anterior labial surface of the lip near the incisor area in the extravasation type mucocele and the floor of the mouth in the retention type mucocele followed by buccal mucosa, ventral tongue surface and upper lip none of patients were recorded as the uncommon histological types. Table 1.

TABLE 1: SITE DISTRIBUTION OF ORAL MUCOCELE

Site	extravasation	extravasation	%
Lower lip	29	2	57.7
Floor of mouth	4	12	29.6
Buccal mucosa	0	1	1.8
Ventral tongue surface	3	0	5.5
Upper lip	2	1	5.5
Total	38	16	100

**DISCUSSION**

Oral mucocele occurs due to the saliva pooling from the obstructed or minor salivary gland duct. It has a rapid onset, fluctuating and self-limiting.<sup>10</sup> Most of the oral mucoceles are either lacking the epithelial lining or have the granulation tissue.<sup>11</sup> Mucoceles are either single or multiple and they rupture and leave painful erosions which heal in few days.<sup>12</sup> Clinically oral mucoceles are either superficial mucoceles which are present under mucous membrane or classical mucoceles which are present in upper sub mucosa. These are either vesicles with fluid filled cavities which are present in superficial layer of the mucosa or nodule which are present deep in the connective tissue. The bluish swelling are seen in the superficial layer and the normal appearing mucosa have the appearance of the deeper layered lesions.<sup>13</sup>

The mucoceles change in size and they may remain unchanged for months in size. The diameter of these lesions may vary from few millimetre to few centimetres. If no treatment is done then such lesions can drastically change to very small or to very large size based on the

rupture and mucin production.<sup>14</sup>

Mucoceleles are usually formed due to lip biting or due to trauma which leads to severance of the salivary duct. The salivary gland excretory duct rupture leads to saliva outpouring into the surrounding tissue.<sup>15,16</sup>

Oral mucoceles affect all age groups but the younger age group are more commonly affected and most affected are in the 2<sup>nd</sup> decade of life. A study conducted by Yamasoba et al<sup>17</sup> reported that more than 65% of the patients reported were in the age group of 20 years. In the present study most of the patients with extravasation mucocele were between the age group of 12-20 years.

Olevera et al<sup>18</sup> in a study reported that male - female ratio was 1.07:1. In present study also the males were more commonly affected than the females with a ratio of 2:1.

Studies conducted by Cohn et al reported that 82% of the mucoceles found on lower lip were of extravasation type, followed by 8% on buccal mucosa and 1% on the palate.<sup>19</sup> Also another study by Ellis et al showed that

33% of the extravasation type mucoceles were on lower lip, 77% on the buccal mucosa 4 % on the upper lip.<sup>20</sup>In the present study commonest site of oral mucoceles were also on lower lip in which extravasation types of mucocele were common.

Removal of the lesion surgically along with the adjacent lobules of the minor salivary glands are widely practiced. The extravasation mucocele which is superficial resolves spontaneously and it does not require any treatment. The rate of recurrence is low and is a result of residual salivary gland lesions which require extension surgery down to the muscle.<sup>21</sup> While putting the sutures it should be done very carefully to avoid damage to the adjacent structures which can cause recurrences.

The finding in the present study were more or less similar to the previous studies. Most of the oral mucoceles occur due to trauma and lip biting habits. Patients who are undergoing orthodontic treatment should also be monitored closely for any local injury.

**CONCLUSION**

The early diagnosis of the oral mucocele and its histopathological typing is of paramount importance as they grow to large sizes affecting the quality of life (QOL) and aesthetics of the patient.

The surgical management of recurrent mucocele is difficult as compared to the fresh ones due to excessive fibrosis in the periphery making the surgical dissection more cumbersome.

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<b>CONTRIBUTIONS BY AUTHORS</b>	
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<b>2 Muslim Khan:</b>	Idea, Patient operated, Abstract, Conclusion.
<b>3 Behzad Salahuddin:</b>	Literature search.
<b>4 Sofia Haider Durrani:</b>	Data collection.
<b>5 Nasiha Bashir:</b>	Conclusions.
<b>6 Sahar Shakeel:</b>	Reference citation