



## ORIGINAL RESEARCH PAPER

## Otorhinolaryngology

### EVALUATION OF ORAL CAVITY LESION BASED ON HISTOPATHOLOGICAL EXAMINATION REPORT: A PROSPECTIVE OBSERVATIONAL STUDY

**KEY WORDS:** Oral cavity, Benign, Malignant, Biopsy, Gingivobuccal sulcus, Lesions, Leukoplakia, SSC, OCL

**Dr Mohammed Nabil Sindhi\***

Resident, Department of Otorhinolaryngology and Head neck surgery, Pacific Institute of Medical Sciences, Udaipur, Rajasthan, India. \*Corresponding Author

**Dr Vikram Singh Rathore**

Associate Professor, Department of Otorhinolaryngology and Head neck surgery, Pacific Institute of Medical Sciences, Udaipur, Rajasthan, India.

**Dr Sunita Meena**

Assistant Professor, Department of Otorhinolaryngology and Head neck surgery, Pacific Institute of Medical Sciences, Udaipur, Rajasthan, India.

#### ABSTRACT

**Background:** Oral cavity lesions (OCL) are commonly encountered worldwide, benign being the most common in nature. Proper evaluation of these lesions gives a clue in the early differentiation of premalignant and malignant oral cavity lesions. **Method:** This is a prospective observational study conducted in the Department of Otorhinolaryngology and Head Neck Surgery after the ethical committee approval. A total of 100 patients were included in the study. The biopsy samples were collected from the lesion site with all aseptic precautions after obtaining the proper consent. The sample were sent for histopathological examination in the central laboratory, and reports were collected. **Results:** The OCL was more common in the age group 20- 40 years (47.6%) followed by 60-68 years (19%), and the mean age was (46±SD). The male gender was more prone to OCL than female patients, and the male-female ratio was 1.3:1. Histopathological examination reveals that 57 % of OCLs were benign, and the remaining 43 % were malignant. The most common site for OCL was the floor of mouth (35%) followed by tongue in (30%) of the patients. **Conclusions:** In our study, we concluded that most common oral cavity lesions are benign in nature, but early evaluation is beneficial for the patients as most of the malignant lesions mimics benign in the early stages. So definitive diagnosis helps prevent mutilating surgeries and subsequent morbidity.

#### INTRODUCTION

Oral cancer is an uncommon malignancy in Western countries and is one of the most common cancers in some high-risk areas of the world. It is a largely preventable cancer since most of the different risk factors identified, such as tobacco use, alcohol consumption, and betel nut chewing, are behaviors that increase the likelihood of the disease.<sup>1</sup>

Globally, incidence rates for oral cancer vary in men from 1 to 10 cases per 100,000 population in many countries. In south-central Asia, oral cavity cancer ranks among the three most common types of cancer. In India, the age-standardized incidence rate of oral cancer is 12.6 per 100,000 population. According to the World Health Report 2004, cancer accounted for 7.1 million deaths in 2003.<sup>2</sup>

Most of these lesions are benign, the commonest being inflammatory, hemangioma, fibroma, lipoma, mucocele, and nevus. Leukoplakia, erythroplakia, and oral sub-mucosal fibrosis are premalignant lesions.<sup>3</sup>

Among the malignant lesions, squamous cell carcinoma is the most common oral cavity carcinoma.<sup>4</sup>

Oral lesions can be classified into four groups: ulcerations, pigment, exophytic, and red-white.<sup>5</sup>

The premalignant oral disorder is a blanket term for various pathologies that can arise in the oral cavity. Early recognition and prompt management are essential to optimal outcomes. However, there remains a significant knowledge gap among medical practitioners.<sup>6</sup>

Oral exophytic lesions are described as pathologic growths projecting above the normal contours of the oral mucosa.<sup>7</sup>

Exophytic lesions can be classified according to their surface texture (smooth and rough), type of base (pedunculated, sessile, nodular, and dome shape), and consistency (soft, cheesy, rubbery, firm, and bony hard).<sup>8</sup>

Oral Submucous fibrosis is a multifactorial disorder with the

possible etiologic factors likely to be habitual use of areca (betel) nut, either chewing it, placing a mixture of tobacco and areca nut (paan masala) in the labial sulcus several times per day, or using it in a packaged, powdered form along with other components (*gutkha*) over a long period. Submucous fibrosis is considered a premalignant condition and transformation rates as high as 7.6% were reported from India over 17 years.<sup>9</sup>

Therefore, white lesions mandate an appropriate clinical diagnostic approach to exclude the possibility of malignancy.

The onset of oral white lesions can be acquired or congenital, with a history of long-lasting existence in the latter form. Oral white lesions can be caused by a thickened keratotic layer or an accumulation of non-keratotic material. Accordingly, when a clinician confronts a white area on the oral mucosa, the first issue to be elucidated is whether a piece of gauze can scrape it off. If so, a superficial non-keratotic layer such as pseudomembranes, most commonly caused by fungal infections or caustic chemicals, should be suspected.

Otherwise, white lesions can be attributed to the increased thickness of the keratin layer, which might have been induced by local frictional irritation, immunologic reactions, or more crucial processes such as premalignant or malignant transformation.<sup>10, 11</sup>

Histologically, oral leukoplakias present as hyperkeratosis, mild dysplasia, moderate dysplasia, severe dysplasia, or carcinoma-in-situ. The dysplasia includes changes in architectural features and cytological features of the tissue.

Architectural features of dysplasia comprise asymmetrical epithelial stratification, an increased number of mitotic figures in the epithelium, dyskeratosis, drop-shaped rete pegs, and keratin pearls within these rete pegs, loss of polarity of basal cells, and basal cell hyperplasia or anaplasia. While the cytological features include nuclear pleomorphism, cellular pleomorphism, an increase in the nuclear-cytoplasmic ratio, prominent nucleoli, and hyperchromasia.<sup>12</sup>

Squamous cell carcinoma (SCC) is the most common histology, and the main etiological factors are tobacco and alcohol use.<sup>13</sup>

Although early diagnosis is relatively easy, advanced disease presentation is uncommon. The standard of care is primary surgical resection with or without postoperative adjuvant therapy. Improvements in surgical techniques combined with the routine use of postoperative radiation or chemoradiation therapy have resulted in improved survival statistics over the past decade.<sup>14</sup>

AIM AND OBJECTIVES:

This study aimed to evaluate the prevalence of oral mu cosal lesions and the location of lesions among participants aged 18 years and above, visiting the OPD department of Oral Medicine and Radiology.

AIM:

To identify the significance of histopathological examination in oral cavity lesions.

OBJECTIVES:

1. To differentiate between benign and malignant lesion by using histopathological examination.
2. To observe the significance of histopathological examination along with clinical examination for complete diagnosis of oral cavity lesions.

MATERIALS AND METHOD

A prospective observational study was conducted in the department of Otorhinolaryngology of Pacific Institute Of Medical Sciences, Umarda, Udaipur, Rajasthan, for one year duration from September 2021 to September 2022 with the complaint of a lesion in the oral cavity. Maximum patients belong to the rural areas of MP and Rajasthan. The study was conducted on 100 patients who met the inclusion criteria.

Inclusion Criteria:

- 1) All patients between the age of 12 to 68 years.
- 2) All genders.

Exclusion Criteria.

- 1) Patients taking radiation for any reason.
- 2) Patients below the age of 12 and above the age of 68.
- 3) Patients with autoimmune disorders.
- 4) Patient with previous oral cavity surgery.

Sampling Technique

Non-probability selective sampling technique was used. The sample was taken by incisional and excisional biopsy procedure and was collected in a plastic container filled with 10% formalin at the ENT department Minor OT and was sent to the Department of pathology for the histopathological examination.

Data Collection

Collected data included essential demographic characteristics of patients ( age and sex ), chief complaints, clinical diagnosis, and lesion characteristics.

Data Analysis

All the subjects meeting the inclusion criteria were included in the study. Data were analyzed using SPSS version 20. Frequency and percentage were calculated for gender.

RESULTS

The age range was from 12 to 68 years, with a mean age of 46. The youngest patient (12-year-old male) presented with mucocele of the lower lip, and the oldest patient (68 years old male) with chronic inflammation of the upper arch buccal tissue. Lesions were more commonly seen in males (57 cases; 57%) than in females (43 cases; 43%). The more common age group (47.6%) was 20- 40 years, followed by those above 60

years (19%). Among 100 cases, 40 case (40%) was malignant, and 60 cases (60%) were benign. The most common site was the floor of mouth(35%). Other sites with the number of cases were tabulated in figure 1.

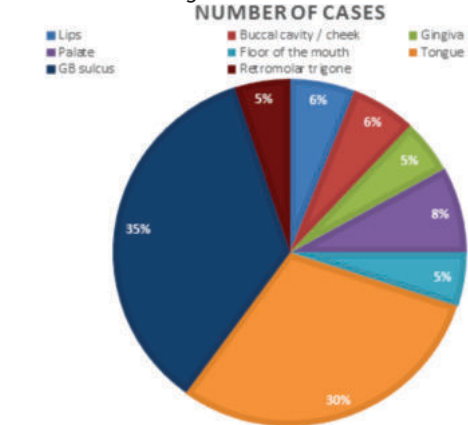


Figure 1. Number of Cases according to the site

Table 1. Different types of benign and malignant oral cavity lesions.

| Lesions (types)         | Number of cases | Percentage |
|-------------------------|-----------------|------------|
| Chronic inflammation    | 20              | 20%        |
| Hemangioma              | 5               | 5%         |
| Fibroma                 | 5               | 5%         |
| Squamous cell carcinoma | 40              | 40%        |
| Hyperkeratosis          | 7               | 7%         |
| Leukoplakia             | 14              | 14%        |
| Erythroplakia           | 9               | 9%         |

DISCUSSION

The principal aim of our study is the evaluation of oral cavity lesions based on a Histopathological examination report by which we can eliminate the risk of significant complications, thereby producing early diagnosis of the disease and better treatment of the disease.

The oral cavity, the most exposed part of the body, is vulnerable to many diseases. Therefore it becomes essential to examine the oral cavity thoroughly to make an early diagnosis and timely intervention.

Most of the patients having the habit of chewing tobacco had the risk of developing premalignant or malignant lesions. The incidence of malignant conditions was more common in patients of low socio-economic backgrounds, with the habits of tobacco, smoking, and alcohol and other contributing factors like lack of awareness, negligence, and inappropriate medical guidance.

The present study is unique as it, for the first time, examined a large number of studied biopsy samples and then classified all lesions into 5 categories of ulcerative, white and red, pigmented, exophytic, and bone lesions, which include almost all types of oral lesions while other studies have mainly focused only on few specific lesions and a specific group.<sup>15</sup>

According to the results of the current study, a statistically significant relationship exists between the concordance rate of the histopathological and clinical diagnoses and the type of lesions. Accordingly, this finding is in line with the results of the study by Saravani et al. [16] who found a significant relationship between the type of lesion (either neoplastic or nonneoplastic) and clinicopathological concordance. In this study, out of 5 general categories of lesions, the highest prevalence belonged to exophytic lesions, white and red lesions had the highest concordance rate, and pigmented lesions had the lowest rate. In white and red lesions, leukoplakia was the most commonly observed lesion, and it also had the highest percentage of concordance (88.6%).<sup>16</sup>

Similarly, Fattahi et al. [17] in their study found the highest percentage of concordance for lichen planus (100%), and in another study, Goyal et al. [18] found the lichen planus as the most common lesion in oral mucosal lesions with the clinicopathological concordance rate of 91.4%.

As stated earlier, several investigations conducted on the concordance of clinical and pathological diagnoses have reported varying concordance rates as their results. Since the correct clinical or pathological diagnosis of lesions is closely linked to both the knowledge and educational level of clinicians, it is critical to redesign students' educational programs totally and then improve them. In order to avoid diagnostic errors, physicians and dentists should also take thorough histories of patients and then transmit them to pathologists, besides following proper and standard procedures when taking biopsies.

## CONCLUSION

Our study concluded that the most common oral cavity lesions were benign. However, the origin and nature of the oral cavity lesions cannot be confirmed by clinical examination alone. Hence, it is advisable to have a histopathological examination to confirm the nature of the lesion.

## Abbreviations:

SCC Squamous cell carcinoma  
OCL Oral Cavity Lesions

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