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Prevalence of Lip Lesions in Patients Visiting a Dental Hospital

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ABSTRACT

Lips are highly exposed to various factors such as ultraviolet radiation (UV), food, tobacco. That may result in substantial morbidity. The lesions range from simple infections, reactive lesions to malignancies. The aim of this study is to determine the prevalence of different lip lesions among patients visiting a dental hospital. The study was done in a hospital setting. The study was a retrospective cross-sectional study. Data from 86000 patients visiting Saveetha Dental College from June 2019 to March 2020 were reviewed and the samples included patients presented with lip lesion. The data was collected, tabulated and analyzed using SPSS software. From the study, we observed that a total of 69 patients had lip lesions. Herpes labialis was the most prevalent lip lesion (76.8%). The prevalence of other lip lesions like mucocele (7.2%), angular cheilitis (5.8%), squamous cell carcinoma (2.9%), scar tissue granulomatous lesion (1.4%), hemangioendothelioma (1.4%) was very less. The lip lesions were more prevalent in males (55%). From this study, we can conclude that herpes labialis was the most prevalent lip lesion and it is more prevalent in males especially in older age(>50 years). The lip lesions range from developmental to malignancies. This study was done to gain adequate knowledge about the etiology, clinical features, diagnosis and prevalence of lip lesions.

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INTRODUCTION

Lips are easily prone to various factors such as UV radiations, food, alcohol, tobacco use, etc. It may cause morbidity and less frequently mortality of the patients (Bentley *et al.*, 2003). These abnormalities primarily cause esthetic concerns to the patient (Kovac-Kovacic and Skaleric, 2000). A lip lesion can be caused or aggravated by biting or injury or it may also appear as a symptom of an infection or underlying systemic inflammatory conditions or carcinoma (Hand and Whitehill, 1986). A complete knowledge and understanding of lesion, proper history taking and clinical examination helps in identification and diagnosis of the lesion (Shulman *et al.*, 2004). Lips have poor skin barrier function and low water retaining capacity and are easily exposed to numerous environmental effects such as wind, sun, smoking, and temperature extremes (Zugerman, 1986; Ya-Xian *et al.*, 1999; Kobayashi and Tagami, 2004). The tobacco, alco-

hol consumption, lifestyle changes, UV exposure, etc. can be major etiological factors for development of premalignant lip lesions and lip squamous cell carcinoma (Czerninski *et al.*, 2010). Some oral concerns can be caused due to habits, poor oral hygiene, etc. (Jangid, 2015). Patients have to be followed closely for early detection (Viveka, 2016). Clinical pictures also greatly help in evaluation and in improving the status of work (Hannah, 2018). It helps in evaluating clinical utility and in early prevention of complications (Sivaramakrishnan and Ramani, 2015; Shree *et al.*, 2019; Sridharan *et al.*, 2019).

The lip lesions can be classified as developmental, infectious, inflammatory conditions, allergic reactions, obstructive salivary gland disorder, granulomatous disorders, autoimmune disorder, pigmented lesions, premalignant lesions, benign neoplasm and malignancies (Patil, 2016). The various lip lesions reported in this study are herpes labialis, mucocele, angular cheilitis, squamous cell carcinoma, scar tissue granulomatous lesion, hemangioendothelioma. The present study is to assess the current prevalent rates as most of the previous studies are done before 2017. It improves the knowledge on current prevalence of lip lesions especially in the South Indian Population. The study fulfills the understanding on the biology and behaviour of the lip lesions. It helps in providing adequate knowledge about etiology, clinical features and diagnosis of lip lesions. Early detection and prompt diagnosis can lead to better prognosis and help in successful clinical treatment (Sridharan *et al.*, 2017). It helps in correlating the clinical findings with histopathological findings and in assessing the progression pattern of the lesions. It also helps in educating the patients and creating awareness among them.

MATERIALS AND METHODS

The study was done in a hospital setting predominantly South Indian population. The study was approved by the Institutional Ethics Board. It is a retrospective cross sectional study. The data from 86000 patients visiting Saveetha Dental College during the time period of June 2019 to March 2020 were reviewed and the data was collected. 69 cases were included in the data collection as per the requirement of the study. The samples included all the cases applicable for the study.

All the case sheets were reviewed and cross verified by another examiner. The samples included patients presented with lip lesions and correlated with clinical examination and histopathological examination. The data was imported to SPSS software version 26 and the variables were defined. The statistical test used was chi-square test. Chi-square test was run and p-value was found to verify the significance of each variable considered in this study.

RESULTS AND DISCUSSION

The study results revealed a total of 69 patients with lip lesions of which 38 were male and 31 were female and the lip lesions are more prevalent in males. The lip lesions were more prevalent in elderly age (more than 50 years) [Table 1] majority of the patients reported to the hospital with a history of ulcer (82%), swelling (14.5%) and with pain (3%) [Table 2].

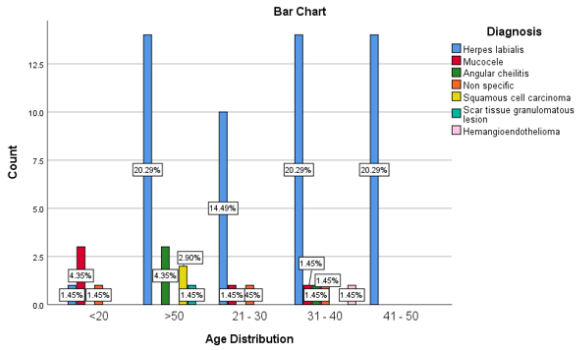

Figure 1: Bar graph representing the association between the age and prevalence of different lip lesions

All the patients who reported with lip lesions had the habit of lip biting and mouth breathing. The associated systemic illness is described in Table 3. Most of them had no associated illness [Table 3]. When the prevalence of different lesions were analysed, herpes labialis was the most prevalent lip lesion. About 53 patients among the 69 had herpes labialis (77%) while 7% had mucocele, 6% had angular cheilitis, 3% had squamous cell carcinoma, 1.4% had scar tissue granulomatous lesion and 1.4% had hemangioendothelioma [Table 4]. When age was compared with different lip lesions, mucocele was prevalent in younger age group (less than 20 years), herpes labialis was more prevalent above 30 years of age, angular cheilitis, squamous cell granuloma and scar tissue granulomatous was prevalent in elderly age group (above 50 years), hemangioendothelioma was prevalent in middle age group (31 - 40 years) The p-value was less than 0.05 showing statistical significance [Figure 1].

In Figure 1, blue denotes mucocele, green denotes herpes labialis, brown denotes angular cheilitis, yellow denotes non specific lesion, red denotes scar tissue granulomatous lesion and grey denotes hemangioendothelioma.

Table 1: Frequency of lip lesions in different age groups

Age group	Frequency	Percentage
Less than 20	5	7.2
21 - 30	12	17.4
31 - 40	18	26.1
41 - 50	14	20.3
More than 50	20	29.0
Total	69	100

Table 2: Tabulation representing the frequency of clinical presentation of lip lesion

Clinical Presentation	Frequency	Percentage
Ulcer	57	82.6
Swelling	10	14.5
Pain	2	2.9

Table 3: Presence of associated systemic lesions in patients with lip lesions

Systemic Illness	Frequency	Percentage
Nil	53	76.8
Diabetes	11	15.9
Hypertension	3	4.3
Renal disorder	1	1.4
Stroke	1	1.4
Total	69	100

Table 4: Prevalence of various lip lesions in the study population

Lip lesions	Frequency	Percentage
Herpes labialis	53	76.8
Mucocele	5	7.2
Angular cheilitis	4	5.8
Non specific	3	4.3
Squamous cell carcinoma	2	2.9
Scar tissue granulomatous lesion	1	1.4
Hemangioendothelioma	1	1.4
Total	69	100

X-axis represents different lip lesions in different age groups and Y-axis represents the frequency of different lip lesions. Mucocele was the most prevalent lip lesion in the younger age group of less than 20 years (60%). Above the age group of 21 years, herpes labialis was the most prevalent lip lesion. This was found to be statistically significant. Pearson chi-square p =0.006.

Lips are situated in a very prominent position and play a significant role in phonetics and food manipulation. It can be affected by numerous diseases. Most of these disorders may present with characteristics and may be easily identified, but many lip lesions can present a diagnostic and therapeutic dilemma for dental practitioners. Early identification and diagnosis can be done by a thorough history of lesions, preceding symptoms and related habits (McLeod *et al.*, 2004).

In lesions like leukoplakia and squamous cell carcinoma, a range of salivary metabolites were altered significantly which acts as biomarkers (Sridharan *et al.*, 2019). Presence of pulp calcification has a close relationship with periodontal disease. This may result in fibrosis (Swathy *et al.*, 2015). Tumor like lesions are often associated with granulomas of immunological or non immunological origin (Kumar

et al., 2015). Hepatocellular carcinoma is the second most common cause of death in the world (Gheena and Ezhilarasan, 2019). However hepatocellular carcinoma is not prevalent in lips. Mucoepidermoid carcinoma is the most common salivary gland tumor (Jayaraj *et al.*, 2015b). However, it is not prevalent in lips. In the present study, the most prevalent lip lesions were more prevalent in males (55%) than in females. It was similar to the study done by S.Patil et al. in which the prevalence was higher in males (63.9%) (Patil and Maheshwari, 2014). And, the lip lesions were more prevalent in elderly people. This is because elderly people are at the risk of developing many pathologies owing to age related metabolic changes, nutritional deficiencies, easily prone to infections, etc.

The most prevalent lip lesion in the present study is herpes labialis which is due to viral infection caused by herpes simplex virus. (77%). This is similar to the study by S.Patil et al. in which infectious lesions were more prevalent (32.9%) (Patil and Maheshwari, 2014). Herpes labialis was more prevalent in females (51%) than in males (49%). A similar report was observed in a study done by Shivani Bansal et al., in which herpes labialis was more prevalent in female patients (53.9%) (Bansal, 2017).

The second most common lesion was mucocele which was present in 7% of the studied population. A similar report was observed in the study done by S.Patil, et al. Most of the patients have lip biting habits and it is more prevalent in children and the resultant trauma induces mucocele. In the present study, mucocele was observed in younger patients of less than 20 years of age.

Angular cheilitis was found with a prevalence of 5.8% which was similar to the previous literature in which a prevalence of 6.3% was observed for angular cheilitis (Bouquot and Gundlach, 1987). It can be caused due to iron deficiency anemia, pooling of saliva at the corner of the mouth, and primarily stress (Preeti, 2011)

The prevalence of lip cancer, squamous cell carcinoma was low (3%) It was similar to the study done by S.Patil, et al., in which the incidence of lip cancer was 1 - 2% (Bansal, 2017). Lip cancer is the most frequent malignant neoplasm in tropical countries (Moretti, 2011). While the incidence of lip cancer is low (1 - 2%) almost 90% of these tumours consist of squamous cell carcinoma (Moore, 2008). Moderate dysplasia can also have increased potential for malignancy (Gupta and Ramani, 2016; Thangaraj, 2016). Leukoplakia can also occur in the vermillion border of the lip which is the frequent site for occurrence in lips and the transformation to malignancy is high at this site due to its association with tobacco and alcohol use (Bouquot and Gundlach, 1987; Bentley *et al.*, 2003). Myofibroblasts also play an important role in malignancy (Jayaraj, 2015). In premalignant lesions, the oral epithelial dysplasia may not always progress rapidly in a sequential manner (Jayaraj *et al.*, 2015a). Hence, the prevalence of lip cancer may be low. The prevalence of hemangioma was also very low(1.4%). It was similar to the study done by Bouquet et al. he observed a prevalence of 3.7/1000 persons for hemangioma (Bouquot and Gundlach, 1987).

CONCLUSION

From this study, we can conclude that herpes labialis is the most prevalent lip lesion followed by mucocele, angular cheilitis, etc. Males had more incidence of lip lesions than females. And the elderly population were more prone to lip lesions. Habits like lip biting aggravate the development of lip lesions. These reports may vary in relation to ethnicity, geographical differences, diagnosis criteria, study sample, etc.

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Conflict of Interest

The authors declare that there is no conflict of interest for this study.

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