

## Research Article

# A study on the clinical profile of ulcers and membranous lesions of oral cavity and oropharynx

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### ABSTRACT

**Background:** An ulcer is a discontinuity of an epithelial surface. Many a times, patients with oral ulcers are treated sympathetically without even coming to a definitive conclusion of their problem. Oral ulcers are common diseases for which patient seeks medical advice. Till date the clinical profile to diagnose the oral ulcers, membranous lesions of oral cavity and oropharynx is not well established. Hence, the study has been taken up to investigate the aetiopathology of ulcers of oral cavity and oropharynx.

**Methods:** 60 cases of ulcers of oral cavity and oropharynx were included in the study. The aetiopathology of ulcers of oral cavity and oropharynx were investigated on the basis of age, sex, duration, etiological factors, symptom Index, socioeconomic status and anatomical distribution. Values are expressed as percentages.

**Results:** The highest incidence was found to be in low socioeconomic group, where there is lack of education, improper food habits, cultivation of bad habits in early childhood and negligence of the disease are the predisposing factors in most of the malignancies. The highest incidence was found in low socioeconomic status. The lesions studied in this study were 50% of non-specific ulcers (Short term (<3 wks) 20-67% and Long term (>3 wks) 10-33%), 15% of Aphthous ulcers, 8.3% of Traumatic Ulcers, 6.5% of Malignant ulcers, 6.5% of Dental ulcers, 3.2% of HIV infection & AIDS, 3.2% of ulcer due to T.B. and 6.5% of ulcers. The majority of the cases were between the age 21-30 yrs constituting 35% followed by 11-12 years constituting 26.6%. 62% of the short term ulcers, Female 38%.

**Conclusions:** Low socioeconomic status, lack of education, bad oral hygiene, bad habits cultivated in early childhood is predisposing factors. Hence early diagnosis and prompt treatment is advised in all cases of ulcers.

**Keywords:** Clinical profile, Oral ulcers, Non-specific ulcers, Specific ulcers.

### INTRODUCTION

Many a times, patients with oral ulcers are treated sympathetically without even coming to a definitive conclusion of their problem. In other cases diagnosis could be made promptly and treatment instituted without delay. Shafers W.G (1973) defines erosion as a shallow crater in epithelial surface that appears clinically as a very shallow erythematous area and implied only superficial damage.<sup>1</sup>

An ulcer is a discontinuity of an epithelial surface. There is usually progressive destruction of surface tissue, cell by cell, as distinct from death of macroscopic portions like Gangrene or necrosis. It is classified as short term ulcer, if the duration is less than or equal to 3 weeks duration and long term ulcer if the duration is more than or equal to 3 weeks duration. The membranous lesion is an inflammatory condition, in which the cells of mucous membrane surface are killed, an exudates is laid down on the surface and the whole necrotic layer is

bound by fibrosis to the underlying tissue to form a false membrane classically seen in diphtheric membrane as reported by William Boyd.<sup>2</sup>

The catarrhal inflammation is a mild inflammation of mucous membrane. Stomatitis is a general term applied to inflammatory, erosive and ulcerative conditions widely affecting the mucous membranes which line the oral cavity. Gingivitis refers to inflammatory, erosive, and ulcerative conditions which are confined to the mucoperiosteum covering the alveolar processes.<sup>3</sup> Some inflammatory conditions of the gums may spread to involve other parts of the oral mucous membrane, in which case the term gingivostomatitis is used.

In a recent study, it has been found recurrent oral aphthae affect 10% of general population.<sup>4</sup> It was classified as minor aphthae constitute 75-85%, major aphthae and herpetiform ulcerations. The exact aetiology and pathogenesis of the disease remain unresolved. Humoral and cell mediated immunity playing role in pathogenesis and immunological factors, local, trauma, smoking, stress, hormonal status, family history, food hypersensitivity and infection are suspected. We describe 3 patients in whom a clear relationship appeared to exist between recurrent aphthous ulceration and deficiency of vit. B<sub>12</sub>. It is concluded that in all patients with recurrent aphthous ulcerations, deficiency of vit. B<sub>12</sub> should be considered. Colby et al (1969) established the relationship of mast cells to the aphthous lesion.<sup>5</sup> Cawson RA, 1968 reported that sera from recurrent aphthous ulceration contained antibodies against genital mucosa from newborn infants.<sup>6</sup> They suggested similar mechanism may take place during recurrent aphthous ulceration in oral and genital mucosa in Behcet's disease. He also suggested that hydrocortisone administered patients with recurrent aphthous ulceration exerts an effect on both lymphocytes and epithelial cells.<sup>7</sup>

Silverman et al. (1977) compared 25 patients with primary herpetic gingivostomatitis found there was no association. Their findings were based on cytological examination, antibody titer and actual isolation of the herpes virus.<sup>8</sup> Lehner 1967 classified candidiasis clinically in to four forms like Acute pseudomembranous, Acute atrophic, Chronic hyperplastic and Chronic atrophic.<sup>9</sup> Oral and oesophageal candidiasis usually occurs in AIDS at the onset or in the course of therapy for opportunistic infections with incidence of 13% Candida are normally present in the oral flora of 49% to 60% of population colonization in oropharynx can be source of regional and systemic dissemination.

Conner G H 1990, described a form of oral ulceration characterized by recurrent crops of multiple small, shallow lesions, often twenty or more in number that occurred on both keratinizing and nonkeratinizing tissues of the mouth and oropharynx.<sup>10</sup> In 2001, Tohru et al. reported a follow up study of 41 patients with lichen planus. He classified the disease in to a) localized, b)

generalized and c) disseminated depending on extent of lesions. Generalized and disseminated cases have tendency for more acute onset and spread of the lesions, and usually for a short duration which averaged eight months.<sup>11</sup>

Siegel MA, 1991 reported the supported value of exfoliative cytology in the diagnosis of pemphigus vulgaris.<sup>12</sup> It was their opinion that cytological smear in oral pemphigus was useful in adjunct to oral biopsy. In 1978, James and co-workers presented evidence that during the course of illness persistent antibodies to herpes type virus.<sup>13</sup> Greenberg M S, 1977 recognized oral leukoplakia as a precancerous lesion and carcinoma subsequently develops in 3.6% to 17.5% patients and showed 20-30% recurrence after surgical treatment.<sup>14</sup>

The present study of oral ulcers aims at identifying the incidents and as far as possible the etiologies of all the oral ulcerative conditions examined in our hospitals for a better orientation and understanding of this group of disorders. Till date the clinical profile to diagnose the oral ulcers and membranous lesions is not described. Therefore, the present study has been undertaken to explore the clinical profile of ulcers and membranous lesions of oral cavity and oropharynx

## METHODS

The source of data is out patients and in patients attending the department of ENT, including patients referred from other departments such as Skin and STD, Medicine, T.B. sanitarium and Head Quarters hospital. The study is a cross sectional study conducted after the institutional ethical clearance and informed consent from all the participants. 60 cases of ulcers membranous lesions of oral cavity and oropharynx were included in the study. The patients are selected randomly and the data was collected from the patients by taking history, detailed clinical examination and relevant investigations. Clinical diagnosis was confirmed by throat swabs for culture, blood tests and biopsy for histopathological examination. The patients aged between 10-70 years of both the sexes were included. Patients diagnosed for membranous lesions and are already under medication are excluded. Patients were treated appropriately and regular follow-up of the cases done. The data obtained was expressed as percentage.

## RESULTS

The present study of 60 cases of oral ulcers and membranous lesions were obtained from department of ENT attending on inpatient and outpatient basis and from other departments such as Dental, Skin & STD, TB hospital Medicine, & Head quarters hospital. A comparison has been done with the etiology to figures that have been appeared in the literature. The lesions studied in this study were shown in Table 1. Fifty percent of cases studied were of nonspecific ulcers of oral cavity

and oropharynx. The short term ulcers non-specific ulcers constituted 41%, acute aphthous & traumatic 13% of cases (Table 2).

**Table 1: Percentage of various types of ulcers recorded in the present study.**

Sr. No.	Type of lesion	Number of cases	Percentage
1	Non Specific ulcers	30	50%
	a) Short term (<3 wks) 20-67%		
	b) Long term (>3 wks) 10-33%		
2	Aphthous ulcers	9	15%
3	Traumatic ulcers	5	8.3%
4	Malignant ulcers	4	6.5%
5	Dental ulcers	4	6.5%
6	HIV infection & AIDS	2	3.2%
7	T.B	2	3.2%
8	Ulcers associated with skin lesions	4	6.5%
	a) Lichen planus -1		
	b) Pemphigus vulgaris -1		
	c) Steven Johnson syndrome -2		
<b>Total</b>		60 Cases	100%

**Table 2: Percentage of short term ulcers out of the total number of cases studied.**

Sr. No.	Causes	Number of cases	Percentage
1	Non-specific ulcers	16	41%
2	Aphthous ulcers	5	13%
3	Traumatic ulcer	5	13%
4	Malignant ulcer	2	5%
5	Ulcers associated with skin lesions	11	28%
<b>Total</b>		39 Cases	Total 100%

Percentage of long term ulcers out of the total number of cases studied was shown in (Table 3). Smoking was elicited in 59% of the cases and Gutkha chewing in 53% of the cases (Table 4) of nonspecific ulcers on the basis of etiology. Aetiology of Percentage of aphthous ulcers out of the total number of cases studied was shown in

(Table 5). Stress was found in 44% of cases followed by smoking & poor oral hygiene in 22 of cases and in 11% there was history of Acid peptic disease. Table 6 indicates the etiology of Percentage of traumatic ulcers out of the total number of cases studied.

**Table 3: Percentage of long term ulcers out of the total number of cases studied.**

Sr. No.	Causes	Number of cases	Percentage
1	Non-specific ulcers	10	16.6
2	Chr. aphthous ulcers	4	6.4
3	Dental ulcers	3	4.8
4	Malignant ulcers	2	3.2
5	Tubercular ulcers	2	3.2
<b>Total</b>		21	35%

**Table 4: Percentage of nonspecific ulcers on the basis of etiology out of the total number of cases studied.**

Sr. No.	Causes	Number of cases	Percentage
1	Smoking	15	49
2	Alcohol	6	20
3	Tobacco chewing	2	6.5
4	Betel nut	4	13
5	Gutkha	16	53
6	Febrile illness	2	6.5
7	Immuno deficiency due to AIDS	0	0
8	Nutropenia	0	0

**Table 5: Percentage of aphthous ulcers on the basis of etiology out of the total number of cases studied.**

Sr. No.	Causes	Number of cases	Percentage
1	Stress	4	44%
2	Smoking	2	22%
3	Alcohol	1	11%
4	Sharp teeth	0	0%
5	Poor oral hygiene	2	22%
6	Immunodeficiency	0	0%
8	Acid peptic disease	1	11%

Epilepsy and poor oral hygiene were found in 50% of cases and smoking in 25%. It is common in age Group of 21-30 Yrs and 31-40 Yrs with 40% occurrence. It was common in males with 60% occurrence. Aetiology of percentage of malignant ulcers out of the total number of cases studied was shown in Table 7. Aetiology: Poor oral hygiene was found in 75% of the cases. Table 8 shows the etiology of percentage of ulcers due to tuberculosis out of the total number of cases studied. The etiology of percentage of ulcers associated with skin lesions out of the total number of cases studied was shown in Table 9. The etiological factors was found to have the history of drug reaction were found in 50% of the cases pan chewing in 75% of the cases & 50% of the cases were with habit of betel nut chewing.

**Table 6: Aetiology of percentage of traumatic ulcers out of the total number of cases studied.**

Sr. No.	Habits	Number of cases	Percentage
1	Smoking	1	25%
2	Alcohol	0	0%
3	Epilepsy fits	2	50%
4	Poor oral hygiene	2	50%
5	Immunodeficiency	0	0%

**Table 7: Aetiology of percentage of malignant ulcers out of the total number of cases studied.**

Sr. No.	Causes	Number of cases	Percentage
1	Smoking	1	25%
2	Alcohol	0	0%
3	Sharp teeth	0	0%
4	Poor oral hygiene	3	75%
5	Immunodeficiency	0	0%

**Table 8: Aetiology of percentage of ulcers due to tuberculosis out of the total number of cases studied.**

Sr. No.	Causes	Number of cases	Percentage
1	Family history	1	50%
2	Vaccination	0	0%
3	Malnutrition	1	50%
4	Immune deficiency due to AIDS	0	0%
5	Pulmonary Koch's	2	100%
6	Other extra pulmonary sites	0	0%

**Table 9: Aetiology of percentage of ulcers associated with skin lesions out of the total number of cases studied.**

Sr. No.	Causes	Number of cases	Percentage
1	Smoking	1	25%
2	Alcohol	1	25%
3	Pan chewing	3	75%
4	Gutkha chewing	1	25%
5	Betel chewing	2	55%
6	Immunodeficiency due to HIV	0	0%
7	Neutropenia	0	0%
8	Drug reaction	2	50%

## DISCUSSION

An ulcer is a deeper crater that extends through the entire thickness of surface epithelium and involves underlying connective tissue. In view of the morbidity associated with biopsy such as discomfort, pain, bleeding etc. it is reserved for selected cases only suspected to be malignant or premalignant or chronic more than 3wks duration. The previous literature on the subject revealed an increasing trend of cancer in oral cavity and oropharynx. Laskaris G, 1982 noticed 4% of the cancers in the oral cavity in U.S.A.<sup>15</sup> Raksha M, 1983 noticed 6.1% of the cases of cancers in India. In this study it was determined 6.4% of the cases are malignant ulcers.<sup>16</sup>

The highest incidence was found to be in low socioeconomic group, where there is lack of education, improper food habits, cultivation of bad habits in early childhood and negligence of the disease are the predisposing factors in most of the malignancies. Pheton JA, 1991 and his colleagues have noted alcohol consumption and smoking are important etiological factor in the malignant ulcers.<sup>17</sup> In the present study it was found none of the cases had bad habits, but 75% of them and poor oral hygiene. The highest incidence of ulcers was seen involving lateral border of tongue and gingivobuccal sulcus. Shafers W. G. 1973 classified ulcers in to short term ulcers and long term them ulcers based on the duration of lesion less more than 3 weeks.<sup>1</sup> In the present study it was found that most of the ulcers were short term in duration i.e. 65% and 35% in long term.

Earlier, biopsy was one of the batteries of investigation in diagnosis of an ulcer,<sup>18</sup> in this study it was found most of the ulcers were due to non-specific inflammatory changes, and it was associated with pain, bleeding, discomfort etc. Since most of the cases improved with symptomatic treatment based on clinical diagnosis it is

concluded that biopsy is indicated for only long term clinically undiagnosed cases.

Majority of the cases were nonspecific ulcers. Males dominated the study with 58.3%. Low socioeconomic status, lack of education, bad oral hygiene, bad habits cultivated in early childhood is predisposing factors. Biopsy is indicated only in long term and clinically undiagnosed ulcers. Long term ulcers are known for their malignant potential and the percentage of transformation was found to be 4.8%. Hence early diagnosis and prompt treatment is advised in all cases of long term ulcers.

As per the results of the study, the clinical examination of an ulcer should be conducted in a systematic manner. The following are the conclusions drawn from the study with brief examples,

#### **Site**

95% of rodent ulcers occur on the upper part of the face. Carcinoma typically affects the lower lip, while the primary chancre of syphilis is usually on the upper lip.

#### **Size**

Particularly in relation to the length of history, e.g. A carcinoma extends more rapidly than a rodent ulcer, but more slowly than an inflammatory ulcer.

#### **Shape**

A rodent ulcer is usually circular. A gummatous ulcer, now a great rarity, is typically circular due to the fusion of multiple ulcers. An ulcer with a square or straight edge is suggestive of 'dermatitis artefacta'.

#### **Edge**

A healing non-specific ulcer has a shelving edge. It is rolled or rampart if a rodent ulcer and raised and everted if malignant undermined and often bluish if tuberculous, vertically punched-out if syphilitic.

#### **Floor**

The floor is that which is seen by an observing, eg. Watery or apple jelly granulation is tuberculous ulcer, a wash-leather slough in a gummatous ulcer.

#### **Base**

The base is what can be palpated. It may be indurate as in a carcinoma or attached to deep structures, e.g. a varicose ulcer in the tibia.

#### **Discharge**

A purulent discharge indicates active infection. A blue green coloration suggests infection with *Pseudomonas*

*pyocyaneus*. A watery discharge is typical of tuberculosis. It is blood-stained in the extension phase of a nonspecific ulcer. Bacteriological examination may reveal colonization by coagulase positive staphylococci. Spirochetes are found in a primary chancre.

#### **Lymph nodes**

Are not enlarged in the case of a rodent ulcer, unless due to secondary infection. In the case of carcinoma they may be enlarged, hard and even fixed. The inguinal nodes draining a syphilitic chancre of the penis are firm and 'snotty', but contrarily the sub mandibular nodes draining a chancre of the lip are greatly enlarged.

#### **Pain**

Non-specific ulcers in the extension and transition stages are painful. Tuberculous ulcers vary, that of the tongue being very painful. Syphilitic ulcers are usually painless.

### **CONCLUSION**

Oral ulcers and membranous lesions are common diseases for which patient seeks medical advice. The highest incidence was found in low socioeconomic status where there is lack of education, improper food habits, bad oral hygiene, lack of awareness of the disease and bad habits cultivated in early childhood are major predisposing factors. Most common lesions found were nonspecific oral ulceration with incidence of 50%.

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### **REFERENCES**

1. Shafer W. G. Hine MK. Levy BM. Oral pathology. 4th ed. Philadelphia: W. B. Saunders and Co.; 1984: 368-373.
2. William Boyd. C. C. A textbook of pathology. 8th ed. Philadelphia: Lea and Febige; 1998: 351.
3. Antoon J W, Miller R L. Aphthous ulcers, - A review literature on aetiology, pathogenesis, diagnosis and treatment. Jr. American dental association. 1980;101:803-8.
4. Barton RPE, Davey TF. Early leprosy of Nose and throat. J. Laryngol otol 1967;90:953-6.
5. Colby, Kerr, Robinson. Diseases of the oral mucosa and jaw, color atlas or oral pathology. 4th ed. Philadelphia: Lippincott, Williams & Wilkins; 1989: 191.
6. Cawson RA., Lencer.T. Chronic hyperplastic candidiasis-candidial leukoplakia-Br Jr. of Dermatology. 1968;80:9-16.

7. Binnie W. H., Rankin K. V. Epidemiological and diagnostic aspects of oral Squamous cell carcinoma *Jr. of oral pathology.* 1984;13:333-41.
8. Silverman S. Jr. AIDS update Oral findings, diagnosis and precautions *Jr. American dental association.* 1987;115:559-63.
9. Lehner R. W. Siebel fine structural findings in recurrent oral ulceration *Br. Dent j.* 1966;1(1):454-6.
10. Conner G. H. Idiopathic conditions of mouth and pharynx in blue stone CD stool SE, eds. *Pediatric otolaryngology* 2nd ed. Philadelphia: W. B. Saunders; 1990: 940-947.
11. Tohru Sauto, Chilio Sugiura. Development of squamous cell carcinoma from pre-existing oral leukoplakia with respect to treatment modality. *Jr. oral and maxilla-facial surgery.* 2001;30:49-53.
12. Siegel MA. Balchinas BA. Kelly M. Serio FG. Diagnosis and management of commonly occurring oral vesiculo erosive disorders. *Cutis* 1991;47:39-43.
13. James. W. Little-“Refractory candidiasis” *Oral Medicine.* 1978;46:776-80.
14. Greenberg M S. Ulcerative, vesicular and bullous lesions. *Oral Medicine.* 4th ed. Philadelphia: J B Lippincott Co.; 1977: 3-65.
15. Laskaris G. Sklavounous A., Straligos J. Bullous pemphigoid, cicatrical pemphigoid and pemphigus vulgaris *oral surgery.* 1982;54:656-62.
16. Raksha M. Shah. oral pemphigus vulgaris clinic-pathological follow-up of 34 cases *J. of oral medicine.* 1983;38:170-3.
17. Pheton JA. Major Aphthous like ulcers in patients with AIDS. *Oral surg oral med. Oral path.* 1991;71:68-72.
18. William J Dichtel, Jr. M. D. Oral manifestations of HIV-Otolaryngology clinics of N.A. 2000;6:1217-26.

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