

Research Article

Aetiopathology of ulcers of oral cavity and oropharynx: a cross sectional study

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ABSTRACT

Background: Oral ulcers are common diseases for which patient seeks medical advice. Till date the clinical profile to diagnose the oral ulcers, management and risk of malignancy 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 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 years 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: Aetiopathology, oral ulcers, Non Specific ulcers, Specific ulcers

INTRODUCTION

Oral ulcers have been an everyday problem to many otolaryngologists, physicians and dental surgeons. Many a times, patients with oral ulcers are treated sympathetically without even coming to a definitive conclusion of their malady. In other cases diagnosis could be made promptly and treatment instituted without delay. The 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.

A mouth ulcer, also termed an oral ulcer, or a mucosal ulcer, is an ulcer that occurs on the mucous membrane of the oral cavity. More plainly, a mouth ulcer is a sore or

open lesion in the mouth.¹ Mouth ulcers are very common, occurring in association with many diseases and by many different mechanisms, but usually there is no serious underlying cause. The two most common causes of oral ulceration are local trauma (e.g. rubbing from a sharp edge on a filling) and aphthous stomatitis ("canker sores"), a condition characterized by recurrent formation of oral ulcers for largely unknown reasons. Mouth ulcers often cause pain and discomfort, and may alter the person's choice of food while healing occurs (e.g. avoiding acidic or spicy foods and beverages).² They may occur singly or multiple ulcers may occur at the same time (a "crop" of ulcers). Once formed, the ulcer may be maintained by inflammation and/or secondary infection. Rarely, a mouth ulcer that does not heal for many weeks may be a sign of oral cancer.³

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 eg. Gangrene or necrosis.⁴ It may be a condition, in which the cells of mucous membrane surface are killed, 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.⁵ If it is a mild inflammation of mucous membrane it is called catarrhal inflammation. The term stomatitis is 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 muco-periosteum covering the alveolar processes. 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.

Erosion is a shallow crater in epithelial surface that appears clinically as a very shallow erythematous area and implied only superficial damage or a deeper crater that extends through the entire thickness of surface epithelium and involves underlying connective tissue.⁶ In view of the morbidity associated with biopsy it is reserved for selected cases only suspected to be malignant or premalignant or chronic i.e., more than 3wks duration. Till date the clinical profile to diagnose the oral ulcers, management and risk of malignancy is not well established. Hence, the study has been taken up to investigate the aetiopathology of ulcers 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. Sanitorium 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 of oral cavity and oropharynx were included in the study. The patients are selected randomly and the data is collected from the patients by taking history, detailed clinical examination and relevant investigations. Clinical diagnosis is confirmed by throat swabs for culture, blood tests and biopsy for histopathological examination. The patients aged between 10-70 years of age of both the sexes were included. Patients diagnosed for oral ulcer and are already under medication are excluded. Patients were treated appropriately and regular follow-up of the cases done.

RESULTS

The observations were made on the data collected from 60 cases of ulcers of oral cavity and oropharynx. 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 associated with skin lesions by Lichen planus, Pemphigus vulgaris and Steven Johnson syndrome. Previous literature on the subject revealed on increasing trend of cancer in oral cavity and oropharynx (Table 1). *Age distribution:* In our study, majority of the cases were between the age 21-30 yrs constituting 35% followed by 11-12 years constituting 26.6% (Table 1). *Sex distribution:* Male constituted 62% of the short term ulcers, Female 38% (Table 1).

Table 1: Number of different types of ulcer and their age wise and sex wise distribution. N=60.

Sl. No	Type	Number	Percentage
Number of different types of ulcers			
1	Non specific ulcers	30	50%
2	Aphthous ulcers	9	15%
3	Traumatic Ulcers	5	8.3%
4	Dental Ulcers	4	6.5%
5	Malignant	4	6.5%
6	Tuberculosis	2	3.2%
7	HIV & AIDS	2	3.2%
8	Ulcers associated with skin lesion	4	6.5%
Number of patients based on age group			
1	0-10 Yrs	2	3.2 %
2	11-20 Yrs	16	26.8 %
3	21-30 Yrs	21	35 %
4	31-50 Yrs	12	20 %
5	51-70 Yrs	9	15 %
Sex-wise distribution of patients			
1	Male	35	58.3 %
2	Female	25	41.7 %

Duration: More common lesions were short term with 67% and 33% of the lesions were long term in duration.

Short term ulcers: ulcers with duration less than 3 weeks are short term ulcers (Table-2). Non specific ulcers constituted 41%, acute aphthous & traumatic 13% of cases. *Age distribution:* Most of the acute ulcers were found between the age 21-30 yrs. Constituting 41% & 11-

20 years constituting 31% (Table 2). *Sex distribution:* Male constituted 62% of the short term ulcers, Female 38% (Table 2).

Table 2: Number of different types of short term ulcers and their age wise and sex wise distribution. N=60.

Sl. No	Causes	Number	Percentage
Number of different types of short term ulcers			
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%
Number of patients based on age group			
1	0-10 Yrs	2	5%
2	11-20 Yrs	12	31%
3	21-30 Yrs	16	41%
4	31-50 Yrs	7	18%
5	50-70 Yrs	2	5%
Sex-wise distribution of patients			
1	Male	24	61.5%
2	Female	15	38.5%

Long term ulcers: Ulcers with duration more than 3 weeks duration is called long term ulcers. The common causes remain as follows. *Age distribution:* Elderly age group (51-70 years) dominated with 33% (Table 3). *Sex distribution:* 44% Males and 56% females were affected (Table 3). *Aetiological factors:* History of smoking was elicited in 59% of the cases and Gutkha chewing in 53% of the cases. Other details are depicted in the table below (Table 3). *Symptom Index:* All the cases studied were associated with ulcer & pain. In 4 cases, there was excess salivation (Table 3). *Anatomical Distribution:* Tongue is the commonest site 57% followed by buccal cavity 45% and soft palate 37% (Table 3).

Socioeconomic status: Based on the individual income/month it has been classified as follows High- Rs. 2001 & above Middle- Rs.300-2000 Low- Rs. <300. (B.G. Prasad) in our study it was more common in low socioeconomic with 75% and Middle 23% (Table 4).

Table 3: Number of different types of long term ulcers and their age wise and sex wise distribution. N=60.

Sl. No	Causes	Number	Percentage
Number of different types of long term ulcers			
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
Number of patients based on age group			
1	11-20 Yrs	4	19%
2	21-30 Yrs	5	24%
3	31-50 Yrs	5	24%
4	50-70 Yrs	7	33%
Sex-wise distribution of patients			
1	Male	10	44%
2	Female	11	56%

Table 4: Number of different types of ulcers based on cause, symptom, site and economic status of the patient. N=60.

Sl. No	Causes	Number	Percentage
Number of different ulcers based the cause			
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	Neutropenia	0	0
Number of cases based on the symptom			
1	Ulcer	9	100%
2	Pain and burning sensation	9	100%
3	Fever	1	11%
4	Dysphasia	1	11%
5	Excess salivation	4	44%
Number of cases based on the site			

1	Lips	2	18%
2	Tongue	6	57%
3	Buccal cavity	5	45%
4	Gingiva	0	0%
5	Pharyngeal wall	0	0%
6	Soft palate	4	37%
Number of cases based on the economic status of the patient			
1	Low	45	75 %
2	Middle	14	23%
	High	1	2%

DISCUSSION

Oral ulceration is a common complaint of patients attending out-patient clinics. All patients with recurrent or persistent oral ulceration should be fully investigated to establish a definitive diagnosis and eliminate the possibility of an underlying systemic disorder or oral malignancy. The diagnosis is based on the patient's history and clinical appearance of the ulcers.

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 associated with skin lesions by Lichen planus, Pemphigus vulgaris and Steven Johnson syndrome. Previous literature on the subject revealed on increasing trend of cancer in oral cavity and oropharynx.

It was reported 4% of the cancers in the oral cavity in U.S.A. and 6.1% of the cases of cancers in India. In this study it was determined 6.4% of the cases are malignant ulcers.⁷ 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. It was noted alcohol consumption and smoking are important etiological factor in the malignant ulcers.⁸

In our study it was found none of the cases had bad habits, but 75% of them had poor oral hygiene. The highest incidence of ulcers was seen involving lateral border of tongue and gingivobuccal sulcus. Ulcers were classified in to short term ulcers and long term ulcers based on the duration of lesion less more than 3 weeks. In our study it was found that most of the ulcers were short term in duration, i.e. 65% and 35% in long term.⁹

Earlier biopsy was one of the batteries of investigation in diagnosis of an ulcer, 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. As reported earlier,¹⁰ we considered long term ulcers with duration more than 3 weeks, our results were as follows.

Non Specific Ulcers

Most of the ulcers in this study were non specific ulcers. They were called so, after thorough clinical and lab investigation no etiology in their causation. Most of these are short term (<3 wks) in nature. Smoking and betel nut chewing were the predominating habits. Symptomatic treatment has given relief in most of the cases. Biopsy on cases showed chronic non specific inflammation.

Aphthous Ulcers

Aphthous ulcerations of the oral cavity are frequently encountered in general Population. Although the exact etiology and pathology remain obscure, many factors can contribute to the pathogenesis of these lesions, such as immunologic factors, local trauma, smoking, stress hormonal status, family history, food hypersensitivity and infection. Most of the cases are females aged between 20-30 years associated 44% with stress, 22% with smoking, 11% with alcohol, 22% with poor oral hygiene and 11% with acid peptic disease.

Malignant Ulcers

It was shown that the effect of joint exposure of alcohol and tobacco are the risk factors of cancer of oral cavity and pharynx.¹¹ In our study, no such association was determined but 75% of the cases were associated with poor oral hygiene. Later it was reported that, most cases are males, but in our study it was the females who dominated.¹²

Dental Ulcers

Sharp teeth are an established etiology in causation of chronic ulcers.¹³ In our study of 4 cases of dental ulcers, it was found 2 cases were due to sharp teeth. The ulcers totally healed after teeth extraction and there was no recurrence. In one case it was the congenital teeth which caused maceration of tip of the tongue, which improved after symptomatic treatment. One case of pyorrhea improves oral hygiene in terms of regular brushing and cleaning with antiseptic oral gargle.

Immunodeficiency due to HIV Infection

Earlier, it was showed 100% association of lesions in 375 homosexual individuals.¹⁴ In our study it was found two cases (3.2%) were HIV positive who showed oral ulcerative lesions. Other features of HIV infection such as weight loss, loss of appetite, fever were found. Oral manifestations were found to be the early manifestations

of AIDS, and the cases were referred to AIDS cell Bellary for further management.

Ulcers Associated with Skin Lesions

Lichen planus, pemphigus vulgaris, and Steven Johnson's syndrome are the ulcers found in our study. It was showed development of cancer in lichen planus on the oral & labial mucosa.¹⁵ No such thing was found in our study. In our study one case of pemphigus vulgaris was found which was associated with skin lesions & had seven episodes of exacerbations. Symptomatically treated in conjuncture with skin colleagues, improvement was found patient did not come for follow-up.

Malignant Transformation

It was showed that, precancerous lesion and malignancy subsequently in to 17.5% patients and recurrence rate of 20-30% after surgical treatment.¹⁶ In this study it was observed that in one case of long term ulcer, biopsy showed dysplasia transformed in to squamous cell carcinoma and found no significant difference in the transformation rate between the patients with and without surgical excision of premalignant lesions.¹⁷ It was reported 6.6% of the malignancies in patients treated with cryotherapy.¹⁸ Also showed cryotherapy has the tumour potentiating effect on carcinogen induced premalignant lesions.¹⁹ In our study we have treated most of the cases with surgical excision, no recurrence was observed. No malignant transformation was found.

CONCLUSIONS

The majority of the cases were non specific ulcers and 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 ulcers.

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Ethical approval: The study was approved by the Institutional Ethical Committee

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