

Clinical Profile of Oral Aphthous Ulcers and Its Management in Saurashtra Region

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Abstract:

Aim: To evaluate the clinical profile, associated factors especially gastrointestinal dysfunction and medical management of oral aphthous ulcers.

Methods: This prospective observational study was conducted over 15 months at a tertiary care centre, enrolling 200 patients aged ≥ 18 years with oral aphthous ulcers. Patients underwent detailed clinical history-taking and oral examination, and were categorized by demographic profile, addiction history, comorbidities, etiological factors, symptomatology, and treatment modality. Follow-up assessments were performed at 1 week, 2 weeks, and 1 month.

Results: The cohort comprised 51% males and 49% females, with 54% aged 18–30 years. Tobacco usage was present in 94% of those with history of addiction. Leading etiological factors were constipation, gastrointestinal dysfunction, and iron deficiency anemia. Common comorbidities included diabetes mellitus and hypertension. Pain while chewing and burning sensation were the predominant symptoms, and 56% of patients experienced 1–2 attacks annually. Multivitamin supplementation, frequently combined with topical steroids, was the mainstay of treatment. Complete resolution occurred within 1 week in 60.5% of patients; delayed healing (up to 1 month) was more common among patients with diabetes mellitus.

Conclusion: Oral aphthous ulcers predominantly affect young adults and are influenced by a combination of gastrointestinal, nutritional, and lifestyle factors. Multivitamin supplementation with topical corticosteroids remains an effective first-line strategy, while comorbidities such as diabetes may prolong healing, warranting an integrated management approach.

Keywords: Aphthous Ulcers, Recurrent Aphthous Stomatitis, Gastrointestinal Dysfunction, Oral Ulcer Management.

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Introduction

Oral aphthous ulcers, commonly referred to as canker sores, represent one of the most common and troublesome conditions affecting the oral mucosa, characterized by recurrent, painful, round-to-oval ulcerations with a yellowish-white pseudomembranous base and an erythematous halo [1]. Based on size, number, and healing pattern, they are classified into three clinical variants — minor, major, and herpetiform — with minor aphthous ulcers accounting for the majority of cases [2]. When ulcers recur repeatedly, the condition is termed recurrent aphthous stomatitis (RAS), a chronic inflammatory disorder of the oral mucosa affecting individuals across all age groups [3].

The etiology of oral aphthous ulcers is multifactorial and remains incompletely elucidated, involving

local trauma, nutritional deficiencies (iron, folate, and vitamin B12), psychological stress, hormonal fluctuations, and immune-mediated inflammation [4]. Our study sought to evaluate the association between gastrointestinal issues such as constipation and oral aphthous ulcers.

Management remains largely palliative and symptom-directed. Published consensus-based clinical practice guidelines, recommend a stepwise approach — topical corticosteroids, anaesthetics and antiseptic rinses as first-line therapy for mild-to-moderate disease, escalating to systemic corticosteroids or immunomodulatory agents for severe, persistent, or refractory cases [5]. Despite the availability of such guidelines, real-world Indian data correlating demographic profile, etiological and

predisposing factors, comorbid conditions, and comparative treatment outcomes — particularly from an Otorhinolaryngology (ENT) outpatient setting — remain limited.

Aim and Objectives

To evaluate the clinical profile, associated gastrointestinal symptoms and medical management of oral aphthous ulcers in patients attending the Otorhinolaryngology outpatient department with the objective to determine age and sex distribution, identify common etiological and predisposing factors, assess symptomatology, duration of symptoms, frequency of attacks per year and to evaluate and compare effectiveness of different management modalities of oral aphthous ulcers.

Materials and Methods

This hospital-based, prospective observational study was conducted in the Department of Otorhinolaryngology and Head & Neck Surgery, at a tertiary care centre in Gujarat, India, over a period of 15 months, after Institutional Ethics Committee approval was obtained. A total of 200 patients were selected and enrolled after screening for eligibility. Consenting patients aged 18 years and above with a clinical diagnosis of oral aphthous ulcers, were included in the study.

For each participant, a detailed and structured clinical history was recorded using a pre-designed proforma, encompassing demographic data (age, gender, address, and socio-economic status classified as per the Modified BG Prasad Classification⁶), occupation, duration of symptoms, associated gastrointestinal complaints, history of addiction (tobacco or alcohol use), presence of comorbid systemic illness and history of recurrent episodes. Oral examination was performed to systematically document number of ulcers, site, and associated mucosal findings.

Results

In our study the gender distribution was nearly equal, with 51% males (n=102) and 49% females (n=98), and the majority of cases (54%) were in the 18–30 age group. The mean age was 29.28 ± 19.57 years.

Various independent variables like age, socioeconomic status and addiction were studied (table no.1). The clinical profile of all patients was evaluated (table no.2). Based on the predominant etiological factor identified on clinical assessment, enrolled patients were categorized into eight groups and prescribed medical management accordingly (table no.3). All patients were reassessed at three follow-up intervals (table no.4).

Table 1: Demographic and Socio-economic Profile of Study Participants (N=200)

Parameter	Category	Number	Percentage
Age group (years)	18–30	108	54.00%
	≥30–40	28	14.00%
	≥40–50	24	12.00%
	≥50–60	33	16.50%
	≥60–70	7	3.50%
Socio-economic status (Modified BG Prasad ⁶)	Class I	9	4.50%
	Class II	29	14.50%
	Class III	47	23.50%
	Class IV	62	31.00%
	Class V	53	26.50%
Addiction	No addiction	48	24.00%
	addiction present	152	76.00%
	— Tobacco (of addicted)	143	94.00%
	— Alcohol (of addicted)	9	6.00%

Table 2: Clinical Profile — Comorbidities, Etiological Factors, and Symptomatology (N=200)

Parameter	Category	Number	Percentage
Comorbidities*	Diabetes mellitus	43	21.50%
	Hypertension	37	18.50%
	Hypothyroidism	11	5.50%
	Chronic obstructive pulmonary disease	9	4.50%
	Bronchial asthma	6	3.00%
	Ischemic heart disease	4	2.00%
	Others	12	6.00%
Etiological/predisposing factors*	Constipation	56	28.00%
	Gastrointestinal dysfunction	47	23.50%
	Liver disease	39	19.50%

	Iron deficiency anemia	34	17.00%
	Trauma	22	11.00%
	Cutaneous disease	12	6.00%
	Immunological	9	4.50%
	Others	49	24.50%
Duration of symptoms	0–5 days	106	53.00%
	6–15 days	38	19.00%
	16–30 days	36	18.00%
	>30 days	20	10.00%
Frequency of attacks/year	1–2	112	56.00%
	3–4	48	24.00%
	5–6	33	16.50%
	>6	7	3.50%
Symptomatology*	Pain while chewing	92	46.00%
	Burning sensation	79	39.50%
	Loss of appetite	29	14.50%
	Swollen lymph nodes	18	9.00%
	Fever	12	6.00%

*multiple responses recorded; percentages do not sum to 100%

Table 3: Distribution of Treatment Modalities for oral ulcers (N=200)

Treatment Modality	Number	Percentage
Multivitamin supplementation	178	89.00%
Multivitamin + local steroid (combination)	129	64.50%
Dietary modification	93	46.50%
Local steroid (alone)	39	19.50%
H ₂ O ₂ + Betadine gargle	34	17.00%
Betadine local application	24	12.00%
Glycerine + local steroid application	22	11.00%
Gentian violet local application	14	7.00%

Multiple responses recorded, as many participants received more than one modality concurrently.

Table 4: Treatment Outcome — Follow-up Cure Period and Its Association with Comorbidities (N=200)

Comorbidity	Cured at 1 week	Cured at 2 weeks	Cured at 1 month	Total
No co morbidities	56	34	0	90
Diabetes mellitus	14	5	24	43
Hypertension	30	7	0	37
Hypothyroidism	10	1	0	11
Chronic obstructive pulmonary disease	4	5	0	9
Bronchial asthma	4	2	0	6
Ischemic heart disease	3	1	0	4
Grand Total	121	55	24	200
Percentage of total (N=200)	60.50%	27.50%	12.00%	100%

Discussion

Our study investigated 200 participants over 18 years to assess clinical profile, etiological factors and management of oral aphthous ulcers. Most of the patients in our study belong to 18-30 age group (54%) with an almost equal male: female ratio. Patil et al. studied 3244 patients and found a prevalence of recurrent aphthous stomatitis (RAS) of 21.7%, with a female predominance [7]. The most affected age groups were the third and fourth decades [8]. Similarly, Goyal et al. analysed 1280 patients with oral mucosal lesion and found that aphthous ulcers were the most common lesion, primarily affecting

individuals aged 21–40 years, with a slight female predominance [9]. These findings suggest that aphthous ulcers predominantly affect younger adults and may have a gender-related predisposition, with some studies showing higher prevalence in females, potentially due to hormonal influences.

The high association of constipation and gastrointestinal dysfunction with oral ulcer in our study suggests that digestive health might play a crucial role in RAS pathogenesis, possibly linked to malabsorption issues. Swain et al. reviewed the etiological factors of RAS and emphasized genetic predisposition, nutritional deficiencies (iron, folate,

vitamin B12), immune system dysregulation, and microbial infections as major contributors [10]. Their findings align with those of Patil et al., who noted that many patients with RAS had low haemoglobin, vitamin B12, serum folate, and ferritin levels [7]. Goyal et al. found that RAS was more common in patients with systemic illnesses, including autoimmune disorders such as systemic lupus erythematosus (SLE) and psoriasis [9]. A tertiary-care study from central India evaluating oral mucosal lesions identified aphthous ulcers as the single most common lesion encountered, frequently associated with systemic and autoimmune conditions [11]. A cross-sectional study among students in northeast India further demonstrated that psychosocial stress nearly triples the odds of RAS occurrence, shows the substantial contribution of lifestyle and psychosocial determinants in the Indian population [12]. These findings indicate that while our study identified gastrointestinal issues and nutritional deficiencies as primary etiological factors, other studies have emphasized stress, nutritional imbalances, and systemic diseases as major contributors. A study conducted by Lauritano D et al., in patients with inflammatory bowel disease (IBD) found oral aphthous ulcer to be the main extra intestinal manifestation of IBD [13]. Hence, underlining the importance of evaluation of gastrointestinal tract especially in patients complaining of frequent gastrointestinal symptoms and recurrent attacks of oral ulcer.

Our study found that 53% of participants had symptoms lasting less than five days. The most frequently reported symptoms were pain while chewing (46%) and a burning sensation (39.5%). Most patients (56%) experienced 1–2 attacks per year, while a smaller percentage (3.5%) had more than six attacks annually. Patil et al. found that stress-induced ulcers were more frequent and often associated with prolonged episodes, whereas recurrent cases were seen in nutritional deficiencies [7]. Goyal et al. observed that patients with persistent and severe ulcerations were seen in patients with systemic illnesses [9]. These differences suggest that ulcer frequency and duration may be influenced by the underlying cause, with stress-related ulcers resolving faster, while nutritionally or systemically induced ulcers, especially in patients with comorbidities, may be more prolonged and recurrent.

Patil et al. reported that 54.5% of patients did not seek any treatment, and only 11.1% took steroids after medical consultation [7]. The lack of treatment adherence in their study suggests that, as the disease is predominantly self-limiting, many patients either manage their condition without medical intervention or are unaware of available treatments.

More than two-third of our patients were found to have addiction of tobacco. Goyal et al. also

emphasized the importance of systemic disease evaluation and addiction counselling in RAS management [9]. Their findings suggest that lifestyle modifications, such as tobacco cessation and improved dietary habits, could play a significant role in reducing ulcer recurrence.

Conclusion

Oral aphthous ulcers most commonly affect younger adults, the etiology of which is predominantly multifactorial. In our study constipation, gastrointestinal dysfunction and liver related issues were found to be the major etiological factors, indicating that digestive health may play a more important role than previously recognized. Comorbidities such as diabetes and hypertension are also commonly associated, showing the need to evaluate these patients as a whole rather than treating aphthous ulcers as an isolated condition. Most patients have short-duration ulcers with infrequent recurrences. Multivitamins combined with local steroids remain the mainstay of treatment. Hence, as aphthous ulcers are multifactorial in origin a greater clinical attention is warranted to gastrointestinal health, alongside conventional factors like stress management and nutritional supplementation for better management and preventing recurrence.

References

1. Jurge S, Kuffer R, Scully C, Porter SR. Number VI Recurrent aphthous stomatitis. *Oral Dis*. 2006;12(1):1–21.
2. Chavan M, Jain H, Diwan N, Khedkar S, Shete A, Durkar S. Recurrent aphthous stomatitis: a review. *J Oral Pathol Med*. 2012;41(8):577–83.
3. Vaillant L, Samimi M. Aphtes et ulcérations buccales. *Presse Med*. 2016;45(2):215–26.
4. Cui RZ, Bruce AJ, Rogers RS III. Recurrent aphthous stomatitis. *Clin Dermatol*. 2016;34(4):475–81.
5. Tarakji B, Gazal G, Al-Maweri SA, Azzeghaiby SN, Alaizari N. Guideline for the diagnosis and treatment of recurrent aphthous stomatitis for dental practitioners. *J Int Oral Health*. 2015;7(5):74–80.
6. Singh P, Katre R, Aggarwal P. Ensuring contemporary socio-economic classification: updated Modified BG Prasad Scale for 2026. *Indian J Community Health*. 2026;38(2):486–488. doi:10.47203/IJCH.2026.v38i02.050.
7. Patil S, Reddy S, Maheshwari S, Khandelwal S, Shruthi D, Doni B. Prevalence of recurrent aphthous ulceration in the Indian population. *J Clin Exp Dent*. 2014;e36–40. Available from: <http://dx.doi.org/10.4317/jced.51227>
8. Verma S, Srikrishna K, Srishti, Shalini K, Sinha G, Srivastava P. Recurrent oral ulcers and its association with stress among dental students in the Northeast Indian population: a cross-

- sectional questionnaire-based survey. *Cureus*. 2023;15(2):e34947
9. Goyal R, Jadia S, Jain L, Agarawal C. A clinical study of oral mucosal lesions in patients visiting a tertiary care centre in central India. *Indian J Otolaryngol Head Neck Surg*. 2016;68(4):413–6. Available from: <http://dx.doi.org/10.1007/s12070-015-0868-x>
 10. Swain N, Poonja LS, Penkar Y. Etiological factors of Recurrent Aphthous Stomatitis: A common perplexity. *J Contemp Dent*. 2012;2(3):96–100. Available from: <http://dx.doi.org/10.5005/jp-journals-10031-1019>
 11. Scully C, Porter S. Oral mucosal disease: recurrent aphthous stomatitis. *Br J Oral Maxillofac Surg*. 2008;46(3):198–206.
 12. Verma S, Srikrishna K, Srishti, Shalini K, Sinha G, Srivastava P. Recurrent oral ulcers and its association with stress among dental students in the Northeast Indian Population: A cross-sectional questionnaire-based survey. *Cureus*. 2023;15(2):e34947. Available from: <http://dx.doi.org/10.7759/cureus.34947>
 13. Lauritano D, Boccalari E, Di Stasio D, Della Vella F, Carinci F, Lucchese A, Petrucci M. Prevalence of Oral Lesions and Correlation with Intestinal Symptoms of Inflammatory Bowel Disease: A Systematic Review. *Diagnostics (Basel)*. 2019 Jul 15;9(3):77. doi: 10.3390/diagnostics9030077. PMID: 31311171; PMCID: PMC6787704.