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Research Article

Pattern of Specialised Oral Medicine Cases at a Tertiary Dental Care Centre in Lahore, Pakistan: A Retrospective Study

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Abstract: Background: Oral medicine data in Pakistan remain limited. **Objectives:** This study aimed to describe the presentation patterns, diagnostic categories, management modalities, and referral destinations of all specialised oral medicine cases presenting to a tertiary dental care centre in Lahore during three months. **Methods:** Records of patients who attended the Department of Oral Medicine at Lahore Medical and Dental College between 4 August and 4 November 2025 were retrospectively reviewed after ethical approval. A complete enumeration sampling of all eligible medical records within the study period was done rather than by drawing a subset sample. Only diagnosed specialised cases were considered, and repeat incomplete entries were excluded. Statistical analysis was performed using IBM SPSS version 26. Frequencies and percentages were used for categorical variables, whereas mean ± standard deviation was used for continuous variables. **Results:** A total of 118 patients were included; 60.2% were female and the mean age was 33.23 ± 16.32 years. Orofacial pain and temporomandibular disorders formed the largest diagnostic category (24.6%), followed by Acquired Functional Restrictions & Drug-Induced Conditions (17.8%), Oral Mucosal Pathologies & Soft Tissue Lesions (16.9%), and Maxillofacial Trauma, Neoplasia & Hard Tissue Defects (16.1%). Overall, 66.9% of patients were managed conservatively and 33.1% surgically. Diagnostic category was significantly associated with management type ($p < 0.001$; Cramér's V = 0.50) and with referral departments ($p < 0.001$; Cramér's V = 0.52). Oral and Maxillofacial Surgery received the largest share of referrals (46.6%), whereas 51.7% of Orofacial pain and temporomandibular disorders required no referral. **Conclusions:** Orofacial pain and temporomandibular disorders constituted the largest diagnostic group that requires diagnosis-specific patient pathways. These findings emphasise the important role of oral medicine departments in the diagnosis, triage and coordinated management of complex oral conditions requiring multidisciplinary care.

Keywords: Oral Medicine; Retrospective Studies; Pakistan; Diagnosis, Oral; Referral and Consultation.

INTRODUCTION

Oral medicine integrates principles of medicine and dentistry for the diagnosis and management of disorders affecting the oral and maxillofacial region, as specified by the American Academy of Oral Medicine (available at https://www.aaom.com/; accessed 21 October 2020). The specialty encompasses orofacial pain disorders, temporomandibular disorders, salivary gland disorders, systemic diseases leading to oral complications, malignant conditions, and oral mucosal conditions. Oral medicine clinics manage medically complex patients and serve as diagnostic and referral centres [1].

Reports from hospital-based oral medicine services have identified immune-mediated diseases, neuropathic pain, and potentially malignant oral disorders among the most common clinical presentations, and the distribution of cases varies considerably between centres. Moreover, data from university oral medicine clinics show a wide range of cases and stress the need for regional data to improve staff training, triage, and service development [2].

International studies have documented considerable geographic variation in the pattern and spectrum of oral medicine cases. Han et al. analysis of oral medicine services in New Zealand and China showed changing patterns in oral medicine case profiles [3], whereas Coppola et al. found a high prevalence of potentially malignant and immune-mediated conditions in a university-based oral medicine clinic in Italy [4]. Conversely, Villa et al. reported immune-mediated conditions and orofacial pain disorders as the most predominant presentations in United States-based oral medicine clinics [5]. These findings collectively reflect variability in diagnostic profiles between public and private settings [2], while some hospital-based studies show common presentations in academic centres [5], emphasising the need for accurate triage [4].

Studies across different regions of South Asia further emphasise the burden of oral mucosal lesions and the influence of local risk factors (e.g., tobacco, areca nut,

denture use) and comorbidity on lesion patterns. Studies from South Asia consistently report a high frequency of oral mucosal lesions, although the distribution varies according to age, gender, local habits, and healthcare setting [6]. Similarly, clinic-based studies originating from South Asia, including India, have documented mucosal disorders in tertiary care environments [7].

Pakistani studies have addressed different aspects of the oral disease burden. Shabir et al. described the spectrum of distribution of oral and maxillofacial pathologies that were histologically confirmed [8], and Ali et al. reported considerable diagnostic delays in patients of oral mucosal and premalignant conditions [9]. Hospital-based studies revealed a significant proportion of oral mucosal lesions in dental outpatients [10], while Akhlaq et al. also showed a high frequency of reactive and potentially malignant lesions in Karachi-based patients [11].

Despite the increasing burden of oral diseases, there is limited evidence regarding the spectrum of patients presenting to oral medicine departments in Pakistan, a gap this research aims to address. By documenting the spectrum and frequency of specialised oral medicine cases, this study seeks to establish region-specific quality indicators that may guide resource allocation, curriculum development, and multidisciplinary patient care, while supporting earlier diagnosis and more effective clinical management. Therefore, this study aimed to characterise the pattern of presentation, demographic characteristics, diagnostic categories, management modalities, and referral destinations of specialised oral medicine cases presenting to a tertiary dental care centre in Lahore, Pakistan, between 4 August and 4 November 2025. This aim was achieved: the study yielded a complete case-mix profile of the study period, from which diagnostic, management, and referral patterns could be described and compared with other settings.

MATERIALS AND METHODS

Study Design and Setting

A three-month descriptive retrospective cross-sectional study was conducted in the Department of Oral Medicine and Diagnosis at Lahore Medical and Dental College (LMDC), Lahore, Pakistan. The study period, from 4 August to 4 November 2025, corresponded to the dates of patient attendance. Retrospective data abstraction and analysis were conducted after ethical approval was obtained from the Institutional Review Board of LMDC (IRB No. FD/258/26; 22 January 2026).

LMDC is one of the largest dental centers in Lahore, receiving referrals from city hospitals, clinics, and different regions of Pakistan. The findings therefore reflect the case mix, management patterns and referral pathways of specialised oral medicine presentations encountered at this tertiary care service rather than population-level patterns in Pakistan. This observational study was reported in accordance with the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) guidelines for cross-sectional studies [12].

Eligibility and Sampling

A criterion-based consecutive complete-enumeration approach was used. All consecutive patient records from the predefined study period that met the eligibility criteria for a specialised oral medicine presentation were included. Therefore, no random sampling or prior sample-size calculation was performed.

Cases were eligible when the clinical record contained a documented specialised oral medicine condition and sufficient information to classify the primary diagnosis, management modality and referral destination. A specialised case was defined as an unusual or complex oral condition requiring specialist diagnostic assessment, additional investigation, multidisciplinary evaluation or condition-specific management beyond routine dental care [5].

Routine presentations more appropriately managed as standard endodontic, periodontal, restorative or surgical dental conditions were excluded, even when they initially appeared clinically unusual. Follow-up visits relating to the same clinical episode and duplicate records were also excluded.

Eligibility was determined retrospectively from the final diagnoses documented in the clinical records. The authors assessed each case in consultation with a senior oral medicine specialist. Eligibility decisions and diagnostic categorisation were subsequently reviewed by the specialist, and no disagreements occurred.

Data Collection and Variable Classification

Data were manually extracted from patient record cards using a structured data-collection form. The recorded variables were age, sex, primary diagnosis, management modality and referral destination. All 118 eligible records contained complete information for these variables; therefore, no records were excluded because of missing data.

Each patient was assigned one primary diagnosis corresponding to the main reason for presentation. Because the individual diagnoses were clinically diverse and several occurred infrequently, they were consolidated into six broader categories according to shared clinical and anatomical characteristics. The classification framework was reviewed and approved by a senior oral medicine specialist before statistical analysis.

Management modality represented treatment provided during the index clinical episode in the Department of Oral Medicine and was classified as conservative or surgical. Conservative management included pharmacological treatment and other non-invasive

measures. Surgical management included incision and drainage, biopsy, excision or another invasive procedure planned or documented in the clinical record.

Referral destination was recorded separately from the management modality. Patients could therefore receive initial management within the department and subsequently be referred for further assessment or definitive treatment. Referral destinations were grouped into four categories: Oral and Maxillofacial Surgery; Restorative Dentistry, including operative dentistry, crown and bridge, and prosthodontics; other specialised dental services, including periodontics, paediatric dentistry and orthodontics; and no referral.

Ethical Approval

Ethical approval for this study was granted by the Institutional Review Board of Lahore Medical and Dental College (IRB No. FD/258/26, dated 22 January 2026). The study was performed in accordance with the Declaration of Helsinki. As this was a retrospective analysis of de-identified clinical records involving no direct contact with patients, individual informed consent was not required or obtained; this is consistent with the retrospective, anonymised design of the study reviewed and approved by the Institutional Review Board. The analysis was limited to existing retrospective records, and all data were de-identified before analysis. Patient confidentiality and anonymity were maintained in accordance with ethical standards and institutional review board approval.

Statistical Analysis

Data were analysed using IBM SPSS Statistics version 26 (IBM Corp., Armonk, NY, USA). Continuous variables were summarised using mean ± standard deviation, while categorical variables were presented as frequencies and percentages. Ninety-five per cent confidence intervals were calculated for key proportions. Associations between diagnostic category, management modality and referral destination were assessed using the Pearson chi-square test. Because some cross-tabulation cells had expected frequencies below five, Monte Carlo estimation was used to obtain valid p values. Cramér's V was calculated to determine the strength of association, with values of approximately 0.10, 0.30 and 0.50 interpreted as small, moderate and large effects, respectively. Statistical significance was set at $p < 0.05$.

RESULTS

The study involved a total of 118 participants, with a higher female representation (60.2%) than males, as shown in Table 1. The age distribution ranged from 2 to 67 years, with a mean of 33.23 ± 16.32 years, and most participants belonged to the 21–40-year age group.

Table 1. Socio-demographic characteristics of the study participants (N = 118)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	47	39.8
	Female	71	60.2
Age group	≤ 10 years	7	5.9
	11–20 years	22	18.6
	21–30 years	28	23.7
	31–40 years	25	21.2
	41–50 years	15	12.7
	51–60 years	10	8.5
	> 60 years	11	9.3

The diagnostic pattern revealed that Orofacial pain and temporomandibular disorders were the most common diagnostic category (24.6%; 95% CI 17.7–33.1), followed by Acquired Functional Restrictions & Drug-Induced Conditions (17.8%; 95% CI 11.9–25.7), Oral Mucosal Pathologies & Soft Tissue Lesions (16.9%; 95% CI 11.2–24.7), and Maxillofacial Trauma, Neoplasia & Hard Tissue Defects (16.1%; 95% CI 10.6–23.8). A detailed distribution is shown in Table 2.

Table 2. Distribution pattern of specialised oral medicine cases and dental diagnoses (N = 118)

Diagnostic category	Frequency (n)	Percentage (%)
Orofacial Pain & Temporomandibular Disorders TMDs	29	24.6
Temporomandibular disorders (e.g., disc disorders)	22	18.6

Diagnostic category	Frequency (n)	Percentage (%)
Other orofacial pain (incl. trigeminal neuralgia, burning mouth syndrome)	7	5.9
Oral Mucosal Pathologies & Soft Tissue Lesions	20	16.9
Immune-mediated (e.g., lichen planus)	8	6.8
Tongue lesions & reactive lesions (PGCG)	10	8.5
Ulcerative, white, red lesions (leukoplakia, etc.)	2	1.7
Developmental Anomalies & Dental Structural Defects	14	11.9
Structural anomalies and craniofacial syndromes (adenoid facies, etc.)	6	5.1
Dental anomalies (fluorosis, ectopic eruption)	8	6.8
Maxillofacial Infections & Inflammatory Conditions	15	12.7
Fascial space infections & sinus tracts	10	8.5
Extra-oral swellings	5	4.2
Maxillofacial Trauma, Neoplasia & Hard Tissue Defects	19	16.1
Dentoalveolar & fascial trauma	10	8.5
Malignant conditions	6	5.1
Bony spicules	3	2.5
Acquired Functional Restrictions & Drug-Induced Conditions	21	17.8
Limited mouth opening (oral submucous fibrosis, pericoronitis, etc.)	15	12.7
Drug-induced complications (gingival enlargement & bleeding)	6	5.1
Total	118	100.0

PGCG: peripheral giant cell granuloma.

A statistically significant association was found between the diagnostic category and the type of management used (Pearson chi-square test with Monte Carlo estimation: $\chi^2 = 28.94$, df = 5, $p < 0.001$, Cramér's V = 0.50, indicating a large effect), as shown in Table 3. Overall, 66.9% of patients were treated conservatively (95% CI 58.0–74.8) and 33.1% underwent surgical intervention. Conservative management was universal among Developmental Anomalies & Dental Structural Defects (100%) and prevailed in Orofacial pain and temporomandibular disorders (86.2%), Oral Mucosal Pathologies & Soft Tissue Lesions (70.0%), and Maxillofacial Trauma, Neoplasia & Hard Tissue Defects (63.2%).

Table 3. Comparison of management modalities across diagnostic categories (N = 118)

Diagnostic category	Conservative management		Surgical management		Row total, n (%)
	n	%	n	%	
Orofacial Pain & Temporomandibular Disorders TMDs	25	86.2	4	13.8	29 (24.6)
Oral Mucosal Pathologies & Soft Tissue Lesions	14	70.0	6	30.0	20 (16.9)
Developmental Anomalies & Dental Structural Defects	14	100.0	0	0.0	14 (11.9)
Maxillofacial Infections & Inflammatory Conditions	3	20.0	12	80.0	15 (12.7)
Maxillofacial Trauma, Neoplasia & Hard Tissue Defects	12	63.2	7	36.8	19 (16.1)
Acquired Functional Restrictions & Drug-Induced Conditions	11	52.4	10	47.6	21 (17.8)
Column total	79	66.9	39	33.1	118 (100)

* Chi-square test; $\chi^2 = 28.94$, df = 5, $p < 0.001$, Cramér's V = 0.50. Two of 12 cells (17%) had expected counts < 5. Percentages are row percentages within each diagnostic category. Monte Carlo estimation was used to obtain p values for analyses containing sparse expected cell frequencies.

Maxillofacial Infections & Inflammatory Conditions were the only category in which surgical therapy predominated (80.0%), followed by Acquired Functional Restrictions & Drug-Induced Conditions (47.6%), the majority of which were cases of limited mouth opening. The Monte Carlo method was used to verify the *p* values and to account for cells with low expected counts, which affected 2 of 12 cells (17%) in Table 3 and 15 of 24 cells (62%) in Table 4.

Diagnostic categories and referral destinations were significantly associated (Chi-square test; $\chi^2 = 95.53$, df = 15, $p < 0.001$; Cramér's V = 0.52, indicating a large effect). Oral and Maxillofacial Surgery received the largest share of referrals overall (46.6%), as shown in Table 4, and was the principal destination for Maxillofacial Trauma, Neoplasia & Hard Tissue Defects (78.9%), Acquired Functional Restrictions & Drug-Induced Conditions (61.9%), and Maxillofacial Infections & Inflammatory Conditions (60.0%). Developmental Anomalies & Dental Structural Defects were referred almost exclusively to Restorative Dentistry (78.6%). By contrast, 60.0% of Oral Mucosal Pathologies & Soft Tissue Lesions cases and 51.7% of Orofacial pain and temporomandibular disorder cases required no referral and were managed within the department itself.

Table 4. Referral patterns across diagnostic categories and departments (N = 118)

Diagnostic category	Surgery, n (%)	Restorative, n (%)	Specialised, n (%)	No referral, n (%)	Total, n (%)
Orofacial Pain & Temporomandibular Disorders TMDs	11 (37.9)	1 (3.4)	2 (6.9)	15 (51.7)	29 (24.6)
Oral Mucosal Pathologies & Soft Tissue Lesions	7 (35.0)	0 (0.0)	1 (5.0)	12 (60.0)	20 (16.9)
Developmental Anomalies & Dental Structural Defects	0 (0.0)	11 (78.6)	3 (21.4)	0 (0.0)	14 (11.9)
Maxillofacial Infections & Inflammatory Conditions	9 (60.0)	3 (20.0)	1 (6.7)	2 (13.3)	15 (12.7)
Maxillofacial Trauma, Neoplasia & Hard Tissue Defects	15 (78.9)	3 (15.8)	1 (5.3)	0 (0.0)	19 (16.1)
Acquired Functional Restrictions & Drug-Induced Conditions	13 (61.9)	0 (0.0)	6 (28.6)	2 (9.5)	21 (17.8)
Total	55 (46.6)	18 (15.3)	14 (11.9)	31 (26.3)	118 (100.0)

* Chi-square test with Monte Carlo estimation (15 of 24 cells [62%] had expected counts < 5); $\chi^2 = 95.53$, df = 15, $p < 0.001$, Cramér's V = 0.52. Percentages are row percentages within each diagnostic category. Restorative includes operative dentistry, crown and bridge, and prosthodontics; Specialised includes periodontics, paediatric dentistry, and orthodontics.

DISCUSSION

The findings revealed a female predominance (60.2%), consistent with prior regional studies reporting higher female presentation rates for mucosal lesions and temporomandibular disorders, although the reasons for this pattern cannot be determined from the present data. The peak incidence (21–40 years) and the mean age (33.23 years) reflect the impact of trauma, infection, and stress-induced orofacial pain in the working population.

Orofacial pain and temporomandibular disorders formed the largest diagnostic category, mirroring hospital-based oral medicine services elsewhere in which orofacial pain is a leading reason for referral. In a North Indian tertiary dental hospital, Chaurasia *et al*. reported temporomandibular disorders in 61.2% of attendees [13], underscoring the burden of these conditions in specialist dental settings. The notable proportion of trauma is similar to that reported by Alshammary *et al*., who found that 44% of participants in Ha'il, Saudi Arabia, had experienced dental trauma [14].

Limited mouth opening (12.7%), predominantly related to oral submucous fibrosis, echoes South Asian series in which oral submucous fibrosis is a leading mucosal

diagnosis, reported at 22% by Shahzad *et al.* [15] and 21% by Singh *et al.* in Rajasthan, India [16]. Although areca nut, betel quid, and smokeless tobacco use are well-established regional risk factors for oral submucous fibrosis and are plausible contributors in this setting, exposure data were not collected in the present study; these associations are therefore offered as context rather than as study-derived findings. Most of these cases occurred in the 21–40-year working-age group. Given the recognised malignant transformation potential of oral submucous fibrosis reported in Pakistani cohorts [17], its concentration in the working-age population may carry public health relevance, and oral medicine departments are well placed to contribute to early detection and preventive education.

The detection of malignancies (5.1%) and fascial space infections (8.5%), supported by Kashif *et al.,* who demonstrated a similarly high frequency (57.5%) [18], reinforces the department's role in oncological screening and the management of life-threatening infections. Drug-induced complications (5.1%) demonstrate that the department plays a vital role in managing the oral side effects of systemic therapy, as highlighted by Shahzad *et al*. [15].

The 16.9% frequency of oral mucosal pathologies mirrors the findings of Ram *et al.,* who documented a 31.1% frequency of oral mucosal lesions, with leukoplakia being the most common clinical finding [10]. Tongue lesions accounted for 8.5% and immune-mediated lesions for 6.8%, supported by Mirza *et al*., who found a common occurrence of tongue lesions (14.4%) in a combined sample from Punjab and Sindh [19]. Villa *et al.* reported immune-mediated conditions (27.2%) and orofacial disorders (21.2%) in United States-based oral medicine clinics [5].

The high presentation rate of Developmental Anomalies & Dental Structural Defects (11.9%), of which 6.8% were dental anomalies, agrees with research by Shirazi *et al*., in which enamel abnormalities were found to occur commonly in primary teeth (14.7%) [20], and by Shahzad *et al.,* who found a wide occurrence of oral anomalies (developmental defects) and other general pathologies [21].

The conservative treatment rate of 70.0% for Oral Mucosal Pathologies & Soft Tissue Lesions shows that oral medicine practitioners can practise independently, consistent with international conservative-management practices supported by Sun *et al.* [22]. This is particularly important in Pakistan owing to the high prevalence of mucosal diseases in the region, which requires pharmacological rather than surgical skills, as detailed by Akhlaq et al. [11].

However, Ali *et al.* recognised an important diagnostic delay for oral malignancy and premalignancy cases in Pakistan, observing that the majority of patients present at advanced stages requiring surgery [9]. In the present series, by contrast, Orofacial pain and temporomandibular disorders were managed conservatively in 86.2% of cases, consistent with conservative-first protocols for these conditions and suggesting that such patients reached the service before irreversible joint pathology had developed. Surgical management instead concentrated in infectious and inflammatory conditions (80.0%), where drainage of fascial space infection is the definitive treatment rather than a marker of delayed presentation. Trauma-associated pain nonetheless remains a recognised driver of more invasive management in Pakistani tertiary settings, as reported by Alam and Shah [23].

In the Pakistani socioeconomic context, patients often refrain from seeking care until symptoms worsen. This pattern is well documented locally: in a survey of 400 patients attending a tertiary care dental hospital in Lahore, Waseem *et al.* showed that 87.5% had not consulted a dentist when their symptoms first appeared, with self-medication (24.57%) and the expectation that symptoms would resolve spontaneously (17.17%) the most frequently cited reasons for delay [24]. Hence, although oral medicine is a predominantly non-invasive specialty, surgical management was still required in approximately one third of cases overall, concentrated in infections and in limited mouth opening. Strengthening collaboration between dental clinics, specialised oral medicine units, and other specialties could shift this balance and allow more conservative therapies before advanced complications occur.

Notably, 51.7% of Orofacial pain and temporomandibular disorder cases and 60.0% of Oral Mucosal Pathologies & Soft Tissue Lesions cases were retained and managed within the department without onward referral. This suggests that the service absorbs a substantial share of complex non-surgical workload rather than acting purely as a conduit to other specialties, while still functioning as an important triage point within this tertiary care centre, as supported by Ramos *et al.* [2]. Patients with complicated Orofacial pain and temporomandibular disorders often move between general practitioners, otorhinolaryngologists, and neurologists before receiving a definitive diagnosis. By providing a central multidisciplinary hub, the department successfully filters cases by differential diagnosis, supported by Helmer *et al.*, who established a strong clinical correlation between facial trauma and the development of temporomandibular disorders [25]. The concentration of Developmental Anomalies & Dental Structural Defects among Restorative Dentistry referrals (78.6%), predominantly fluorosis and ectopic eruption, shows that tooth-related developmental pathology requires specialised operative involvement, as mirrored by Jindwani *et al*. [7]. There is a need for specific equipment and skills among operative and prosthetic specialists.

Importantly, 60.0% of Oral Mucosal Pathologies & Soft Tissue Lesion cases did not require any referral, indicating the clinical independence of the oral medicine specialist. These conditions were immune reactions (e.g., lichen planus) and reactive lesions treated via conservative drug therapy, as demonstrated by Goyal *et al.*, confirming that such conditions in tertiary clinics are effectively treated by conservative pharmacological protocols alone [6].

Overall, 46.6% of cases required consultation with Oral and Maxillofacial Surgery, underscoring the close collaboration between the two specialties at the tertiary level [18], whereas mucosal diseases were largely retained within the department, with only 5.0% referred onward.

These findings represent baseline data from a single tertiary urban centre and cannot be generalised to the wider Pakistani population. Multicentre studies with standardised data collection would help establish national reference data on oral medicine case-mix and referral pathways. Due to the retrospective nature of the study, there was inconsistent information about localized risk behaviors (e.g. betel quid use, smokeless tobacco use), and they could not be consistently related to mucosal diseases. The findings should be interpreted within the defined scope of this study. The three-month, single-centre design provided a focused assessment of specialised oral medicine presentations at a high-volume tertiary dental care service. Complete enumeration of all consecutive eligible cases during this period minimised selective sampling within the study population and ensured complete data for the variables analysed. However, the sample size of 118 limited the precision of estimates for less frequent diagnostic subgroups, and the short observation period may not have captured rare or seasonally varying presentations. As the analysis was based on retrospective clinical records, it was restricted to routinely documented information. Future multicentre studies conducted over longer periods may build on these findings and provide broader estimates of specialised oral medicine case patterns, management modalities and referral pathways.

CONCLUSION

The findings demonstrate that specialised oral medicine clinics manage a diverse spectrum of complex oral diseases, with significant associations between diagnosis, management strategy, and referral pathway. They support the role of oral medicine as a multidisciplinary diagnostic and triage service within tertiary dental care and provide baseline data for future multicentre studies in Pakistan. They also suggest opportunities to strengthen primary-level screening and earlier referral pathways to reduce the need for advanced surgical intervention. For clinicians, these patterns show that early diagnosis and structured triaging in oral medicine prevent severe complications and move patients toward timely conservative care. For policymakers, these findings may help inform the development of specialised triage pathways that could streamline patient routing and reduce reliance on late-stage surgical intervention.

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Conflicts of Interest

The authors declare that there is no conflict of interest to disclose.

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