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Oral Medicine in Primary Dental Care: A Narrative Review of Recognition, Management and Referral of Oral Mucosal, Neoplastic, Orofacial Pain and Medication-Related Conditions

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ABSTRACT

General dental practitioners are usually the first, and often the only, health professionals to examine the oral mucosa, which places them at the centre of early recognition of oral disease. This narrative review aimed to summarise current evidence on the recognition, initial management and referral of common oral medicine conditions encountered in primary dental care. Relevant literature, including systematic reviews, meta-analyses, consensus statements and clinical guidelines, was identified through searches of major biomedical databases and synthesised thematically. The review addresses oral potentially malignant disorders and oral squamous cell carcinoma, oral lichen planus, oral candidiasis and herpetic infections, recurrent aphthous stomatitis, temporomandibular disorders and burning mouth syndrome, and medication-related conditions including xerostomia and osteonecrosis of the jaw. The evidence shows that a systematic extra-oral and intra-oral examination, supported by a thorough medical and medication history, remains the most reliable tool for detecting disease in the dental setting. Conventional examination and scalpel biopsy remain the diagnostic standard, and adjunctive devices do not replace histopathology. No treatment has been shown to prevent malignant transformation of leukoplakia, so early detection, risk-factor counselling and structured follow-up are central. Delays in diagnosis and referral continue to contribute to advanced-stage oral cancer, including in South Africa. Most mucosal conditions can be managed safely in practice with simple, evidence-based measures, while a defined group of red-flag presentations requires urgent referral. Strengthening oral medicine competence in primary care, with clear referral pathways, is essential to improving patient outcomes.

Keywords: Oral medicine; primary dental care; oral potentially malignant disorders; oral cancer; oral mucosal diseases; referral

1. Introduction

Oral medicine is the field of dentistry concerned with the diagnosis and non-surgical management of medically related disorders and conditions affecting the oral and maxillofacial region. The FDI World Dental Federation describes oral health as a multifaceted state that includes the ability to speak, smile, taste, chew and swallow and to convey emotion without pain or discomfort, and that is part of general health and wellbeing [1]. Oral diseases remain among the most prevalent health conditions worldwide and impose a substantial burden on individuals and health systems [2]. The World Health Organization has called for oral health to be integrated into universal health coverage and primary care [3].

In most settings the general dental practitioner is the first health professional to see patients with oral mucosal, salivary, neuropathic and jaw-related complaints, and is frequently the only clinician who routinely inspects the oral mucosa of apparently healthy people. This gives primary dental care a pivotal role in the early detection of oral cancer. Lip and oral cavity cancer accounts for approximately 390,000 new cases and 188,000 deaths worldwide each year [4]. In South Africa, patients with oral squamous cell carcinoma continue to present at an advanced stage, and the disease is closely linked to modifiable risks such as tobacco and alcohol use [5]. Early detection of oral cancer and potentially malignant disorders by the dentist is widely accepted as the key to improving survival [6], yet diagnostic delay, whether patient-related or professional, remains a consistent contributor to late-stage presentation [7].

Beyond cancer, dentists regularly encounter lichen planus, candidiasis, recurrent aphthous stomatitis, viral infections, temporomandibular disorders, burning mouth syndrome and the oral effects of systemic disease and medication. Uncertainty about which conditions can be managed in practice and which require specialist input can lead to under-recognition, unnecessary treatment or delayed referral.

The objective of this review was therefore to synthesise current evidence on the recognition, initial management and referral of common oral medicine conditions in primary dental care, and to propose a practical framework that general dental practitioners can apply in daily practice.

2. Materials and Methods

Study design. This was a narrative review. It was designed to give a balanced, clinically oriented synthesis rather than a systematic estimate of effect, and it was not registered as a systematic review protocol.

Literature search. Searches were conducted in PubMed/MEDLINE, Scopus and Google Scholar, supplemented by the Cochrane Database of Systematic Reviews and by hand-searching reference lists of key papers and the *South African Dental Journal* for regional context. Search terms combined controlled vocabulary and free text, including "oral medicine", "primary dental care", "general dental practice", "oral potentially malignant disorders", "leukoplakia", "oral cancer", "oral lichen planus", "oral candidiasis", "recurrent aphthous stomatitis", "temporomandibular disorders", "burning mouth syndrome", "xerostomia" and "medication-related osteonecrosis of the jaw".

Eligibility. Priority was given to systematic reviews, meta-analyses, randomised trials, consensus statements, position papers and clinical practice guidelines published in English between 2005 and 2026. Landmark earlier papers and standard textbooks were included where they remain the accepted reference. Case reports, conference abstracts and papers without full text were excluded.

Selection and synthesis. The author screened titles and abstracts, read the full text of relevant papers, and extracted information on definitions, prevalence, diagnostic approach, first-line management and referral criteria. Findings were grouped by clinical theme and summarised narratively. Quality was judged by study design, consistency across sources and the authority of the issuing body, but no formal risk-of-bias scoring was applied.

Ethical considerations. This review used only published literature and involved no patients, patient data or animals. Ethical approval and informed consent were therefore not required.

3. Results and Discussion

The evidence is presented by clinical theme. Results and discussion are combined so that each finding can be interpreted immediately in terms of what the general dental practitioner should do.

3.1 The foundation: systematic examination and history

Every recurring theme in the literature begins with the same two steps: a structured extra-oral and intra-oral examination, and a medical, medication, tobacco, alcohol and betel-quid history. Examination should include the lips, labial and buccal mucosa, tongue (dorsal, ventral and lateral borders), floor of mouth, palate, gingivae, oropharynx and cervical lymph nodes, with attention to colour, contour, surface texture, induration, ulceration and fixity [8]. Lateral and ventral tongue and floor of mouth deserve particular care because these are high-risk sites. A lesion should be described, measured and photographed at the first visit so that change can be objectively assessed at review.

3.2 Oral potentially malignant disorders and oral cancer

Oral potentially malignant disorders (OPMDs) are conditions associated with an increased risk of cancer of the lip or oral cavity. The 2021 WHO Collaborating Centre consensus lists leukoplakia, erythroplakia, proliferative verrucous leukoplakia, oral lichen planus, oral submucous fibrosis, palatal lesions in reverse smokers, lupus erythematosus, epidermolysis bullosa and dyskeratosis congenita within this group [9]. Leukoplakia is a diagnosis of exclusion, applied to a white plaque that cannot be attributed to another known disease [9].

Malignant transformation varies widely by subtype. A systematic review and meta-analysis reported an overall rate of roughly 8%, with the highest rates in proliferative verrucous leukoplakia and erythroplakia and much lower rates in lichen planus [10]. Oral submucous fibrosis carries a transformation risk of approximately 4%, which is clinically important in communities that use areca nut or betel quid [11]. Dysplasia and non-homogeneous appearance increase risk, but a lesion without dysplasia can still progress, so clinical appearance alone cannot be relied upon.

A key and sobering finding for practice is that no intervention has been shown to prevent malignant transformation of oral leukoplakia. The Cochrane review found no evidence that medical or surgical treatment reduces cancer incidence, although surgery may remove the lesion itself [12]. This reinforces the role of the dentist in risk-factor modification, accurate diagnosis and long-term surveillance rather than in definitive treatment.

The American Dental Association guideline recommends that clinicians evaluate potentially malignant lesions by history and examination and that scalpel biopsy is the diagnostic standard, with adjunctive tools such as toluidine blue or autofluorescence not used as a substitute for biopsy [13]. Cochrane reviews on screening conclude that the evidence for routine visual screening in the general population is limited, and that only one trial, conducted in India among high-risk habit users, has shown reduced oral cancer mortality [14,15]. The Global Oral Cancer Forum nevertheless affirms conventional oral examination as the accepted first step, with opportunistic examination of all attenders and targeted attention to high-risk groups [16].

In the South African context, delayed diagnosis and advanced-stage presentation remain common [5,6], which supports a low threshold for referral. Any ulcer, red or white patch, or lump that persists for more than two to three weeks after removal of local causes such as a sharp cusp or ill-fitting denture should be regarded as suspicious and referred promptly for biopsy.

3.3 Oral lichen planus

Oral lichen planus (OLP) is a chronic T-cell-mediated mucocutaneous disease with a global prevalence of approximately 1% [17]. It most often presents as bilateral, symmetrical white reticular lesions of the buccal mucosa, and may also be plaque-like, atrophic or erosive. Erosive forms cause burning and sensitivity to spicy food. Diagnosis is clinical where the picture is classic and bilateral, but biopsy is advised for atypical, unilateral, persistent erosive or non-healing lesions to confirm the diagnosis and exclude dysplasia or carcinoma [18].

Although OLP is classified as an OPMD, the absolute risk of malignant transformation is low, in the order of 1% in pooled data, and is higher in erosive and atrophic forms and in patients who smoke or drink alcohol [19]. Practical management in primary care includes eliminating local irritants, reviewing medications and restorative materials that may cause lichenoid reactions, optimising oral hygiene, and prescribing topical corticosteroids for symptomatic disease. Patients should be reviewed regularly, and referred if lesions are severe, refractory, unilateral or suspicious.

3.4 Oral candidiasis and herpetic infections

Oral candidiasis is the most common oral fungal infection and may present as pseudomembranous, erythematous or hyperplastic disease, as angular cheilitis or as denture stomatitis [20]. It is generally a marker of local or systemic predisposition rather than a stand-alone problem. Common contributors include denture wearing, inhaled or topical corticosteroids, xerostomia, broad-spectrum antibiotics, diabetes and immunosuppression [21]. Management starts with correcting these factors, particularly denture hygiene and removal of dentures at night.

For uncomplicated oropharyngeal candidiasis, current infectious disease guidelines recommend topical agents such as clotrimazole troches or miconazole buccal tablets for mild disease, and oral fluconazole for moderate to severe disease [22]. Persistent, recurrent or unexplained candidiasis in an apparently healthy adult should prompt medical investigation, including consideration of diabetes, nutritional deficiency and HIV, a particularly relevant concern in South Africa. Hyperplastic candidiasis can mimic leukoplakia and should be reassessed after antifungal treatment, with biopsy if the lesion persists.

Herpes simplex virus type 1 causes primary herpetic gingivostomatitis, most often in children and young adults, and recurrent herpes labialis or intraoral recurrences in latently infected individuals [23]. Care is largely supportive, with analgesia, hydration and topical measures, and systemic antivirals are indicated when the patient is immunocompromised or when treatment can be started early in severe disease [23]. Large, chronic or atypical ulcers in an immunocompromised patient should be biopsied rather than assumed to be herpetic.

3.5 Recurrent aphthous stomatitis

Recurrent aphthous stomatitis (RAS) is among the commonest oral mucosal disorders, characterised by recurrent, painful, round or oval ulcers with a yellow-grey floor and erythematous halo, arising on non-keratinised mucosa [24]. Minor ulcers heal within 10 to 14 days without scarring, while major ulcers are larger, deeper and may scar. The aetiology is multifactorial, involving immune dysregulation, genetic predisposition, local trauma, stress and nutritional factors [24].

Topical corticosteroids remain the mainstay of treatment, with antiseptic or anaesthetic rinses and analgesic gels for symptom relief [25]. Patients with frequent, severe or atypical ulceration should be assessed for underlying contributors. Investigations commonly include a full blood count and haematinic screen (iron, folate and vitamin B12), and consideration of coeliac disease and inflammatory bowel disease [26]. Ulcers that do not heal within three weeks must never be labelled aphthous without biopsy.

3.6 Temporomandibular disorders and burning mouth syndrome

Temporomandibular disorders (TMD) are the most common non-dental cause of orofacial pain presenting to dentists, with a pooled prevalence of roughly 31% in adults [27]. The Diagnostic Criteria for TMD (DC/TMD) provide a validated two-axis framework, combining a physical diagnosis (Axis I) with an assessment of psychosocial status and pain-related disability (Axis II) [28]. Initial management should be conservative and reversible: patient education, self-care, jaw rest, soft diet, simple analgesia, physiotherapy and, where appropriate, a stabilisation appliance. Irreversible occlusal or surgical treatment should be avoided at the outset. Referral is indicated for locking that does not resolve, suspected intra-articular pathology, trauma or neurological signs, and for persistent pain with significant psychosocial impact.

Burning mouth syndrome (BMS) is a chronic intraoral burning sensation, with no clinically visible mucosal lesion, that is an important diagnosis of exclusion [29]. The International Classification of Headache Disorders defines it as daily intraoral burning or dysaesthesia lasting more than two hours per day over more than three months, without clinically evident causative lesions [30]. Before BMS is diagnosed, local and systemic causes must be excluded, including candidiasis, xerostomia, haematinic deficiency, diabetes, ill-fitting dentures and medication effects. Where no cause is found, reassurance, avoidance of irritants and early referral for specialist management are appropriate.

3.7 Medication-related and salivary conditions

Medication-related osteonecrosis of the jaw (MRONJ) is defined by exposed or probeable necrotic bone in a patient exposed to antiresorptive or antiangiogenic therapy, with no history of head and neck radiotherapy [31]. The American Association of Oral and Maxillofacial Surgeons position paper emphasises prevention: patients should have a dental assessment and, where possible, completion of invasive dental treatment before starting these drugs,

followed by good oral hygiene and regular review [31]. Dentists should record all bisphosphonate and denosumab exposure and refer suspected cases early for staging and specialist care.

Xerostomia and salivary gland hypofunction are common, are strongly associated with polypharmacy and ageing, and increase the risk of caries, candidiasis, dysgeusia and difficulty wearing dentures [32]. Primary care management includes medication review in liaison with the prescribing physician, saliva substitutes and stimulation, fluoride therapy, dietary advice and shorter recall intervals [32]. A dry mouth accompanied by dry eyes or recurrent parotid swelling should prompt consideration of systemic autoimmune disease and referral.

3.8 A practical framework for referral

Across conditions, the literature supports a simple principle: manage in practice what is common, benign and responds to first-line measures, and refer early what is persistent, atypical, undiagnosed or potentially malignant. Table 1 summarises red-flag presentations and the suggested action.

Table 1. Red-flag presentations in primary dental care and suggested action

Presentation	Why it is a concern	Suggested action
Ulcer persisting more than 3 weeks	Possible oral squamous cell carcinoma	Remove local causes, review at 2 weeks, urgent referral for biopsy if unresolved
Red or mixed red-white patch	Erythroplakia and non-homogeneous lesions carry a high risk of dysplasia or cancer	Refer for biopsy without delay
White patch not clearing after removal of cause	Possible leukoplakia	Document, photograph and refer for biopsy and surveillance
Indurated, fixed lesion or unexplained neck node	Suggests invasive disease	Urgent referral
Unilateral, erosive or atypical lichenoid lesion	May be dysplasia or autoimmune blistering disease	Biopsy or refer for specialist assessment
Recurrent or unexplained candidiasis or ulceration	May indicate diabetes, nutritional deficiency or immunosuppression	Medical investigation and referral
Exposed bone in a patient on antiresorptive therapy	Possible MRONJ	Avoid extraction or surgery, refer to oral and maxillofacial surgery
Persistent burning or facial pain with no clear cause	Possible BMS or neuropathic pain	Exclude local and systemic causes, refer

Several limitations apply to this review. As a narrative review it is subject to selection bias, formal risk-of-bias assessment was not performed, and much of the evidence on lesion behaviour comes from specialist or hospital populations that may not reflect primary care. South African data on early detection in general practice remain limited, and there is a need for locally relevant studies of oral cancer screening, referral pathways and the oral manifestations of HIV and other endemic conditions. Further, evidence for several first-line treatments, including topical therapies for lichen planus and aphthous ulceration, rests on small trials, and clinicians should combine it with clinical judgement and patient preference.

4. Conclusion

Primary dental care is the front line of oral medicine. The evidence reviewed here shows that a systematic mucosal examination with a thorough medical and medication history, combined with scalpel biopsy as the diagnostic standard, is the most reliable way to detect serious disease early. Because no treatment has been proven to prevent malignant transformation, the general dental practitioner's most valuable contributions are early recognition, risk-factor counselling, careful documentation, surveillance and timely referral. Most common conditions, including lichen planus, candidiasis, aphthous ulceration and temporomandibular disorders, can be safely managed in practice with first-line measures, while persistent, atypical or potentially malignant lesions need prompt specialist input. Strengthening undergraduate and continuing education in oral medicine, and establishing clear referral pathways, particularly in resource-limited settings such as South Africa, would help reduce diagnostic delay and improve patient outcomes.

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