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# A Multidisciplinary Approach in Head and Neck Cancer: A Case Report

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**ABSTRACT**

Multidisciplinary team conferences (MDTC) significantly improve outcomes in complex malignancies such as head and neck squamous cell carcinoma (HNSCC). However, diagnostic delays in early-stage oral malignancies remain a substantial obstacle to optimal prognosis. A 28-year-old male with a history of substance use presented with persistent, severe tongue pain previously misdiagnosed as oral lichen planus and treated empirically for four months without symptom relief. Clinical and histopathological reassessment confirmed a poorly differentiated squamous cell carcinoma (SCC) on the dorsal tongue. The patient underwent oncologic surgical resection, neck dissection, and adjuvant chemoradiotherapy. Post-treatment recovery was characterized by severe functional limitations, psychological distress, and substance relapse. Comprehensive multidisciplinary rehabilitation—encompassing oral medicine specialists, head and neck oncologists, speech therapists, nutritionists, prosthodontists, and psychiatric support—facilitated long-term functional recovery, addiction cessation, and a disease-free state at the 2-year follow-up. This case highlights the vital role of oral medicine specialists within the MDTC framework, particularly in accurate differential diagnosis, reducing diagnostic delay, managing oral complications during cancer therapy, and orchestrating comprehensive long-term supportive care.

**Keywords:** Head and neck neoplasms; Squamous cell carcinoma; Diagnostic delay; Multidisciplinary care team; Oral medicine.

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## Introduction

The multidisciplinary team conference (MDTC) model was established in oncology in the mid-1980s following evidence that multimodal therapy combining surgery, radiotherapy, and chemotherapy markedly improves overall survival [1]. MDTC represents a collaborative, patient-centered paradigm aimed at delivering specialized, evidence-based care while circumventing specialty-specific cognitive biases and reducing healthcare expenditure [2,3]. In head and neck oncology, MDTCs have become the standard of care to address complex anatomical and functional challenges, routinely integrating head and neck surgeons, radiation oncologists, medical oncologists, oral medicine specialists, speech pathologists, nutritionists, and psychologists [4,5]. Malignancies of the oral cavity present unique challenges due to their direct impact on vital functions such as mastication, deglutition, respiration, and speech, as well as facial aesthetics and psychosocial well-being [5].

Despite significant therapeutic advances, diagnostic delay remains a major determinant of unfavorable outcomes. A considerable proportion of diagnostic delay is attributable to the misinterpretation of early malignant lesions as benign inflammatory conditions by healthcare providers unfamiliar with specialized oral mucosal pathology [6,7]. This case report details the clinical trajectory, diagnostic pitfalls, and comprehensive multidisciplinary management of an advanced tongue SCC in a young adult. It underscores the indispensable role of oral medicine specialists in early detection, prompt referral, oncologic treatment coordination, supportive oral supportive care, and long-term survivorship management.

## Case Presentation

A 28-year-old male presented to the Department of Oral Medicine, School of Dentistry, Tehran University of Medical Sciences, with a three-month history of severe, persistent, piercing pain on the dorsal aspect of the tongue (Visual Analog Scale [VAS]: 9/10), refractory to conventional analgesics. His medical history was unremarkable for systemic diseases, but his personal history revealed chronic substance abuse, including a 10 pack-year cigarette smoking history, daily alcohol intake, regular waterpipe and opium use, and occasional methamphetamine consumption. Four months prior to presentation, he had sought care from an oral and maxillofacial surgeon for a persistent white lesion on the lateral tongue border. An incisional biopsy at that time had resulted in an unsubstantiated diagnosis of oral lichen planus without comprehensive clinicopathological correlation. Despite subsequent treatment with topical prednisone (5 mg/day), mouthwashes, left third molar extraction, and four ineffective sessions of low-level laser therapy (LLLT), the patient experienced worsening pain radiating to the sublingual space and mandible. Subsequent consultations with otolaryngologists and neurologists failed to identify the underlying etiology, leading to escalating opioid misuse for pain palliation. Upon clinical evaluation at our department, extraoral examination revealed secondary myofascial pain dysfunction syndrome (MPDS) involving the left medial and lateral pterygoid muscles, as well as a firm, tender lymph node measuring greater than 1.5 cm in the left submandibular region (Level Ib).

Intraoral examination demonstrated a large, indurated, and tender exophytic mass with a lobulated surface, central ulceration, and overlying white, hyperkeratotic patches involving the posterior third of the left dorsal and ventrolateral aspect of the tongue, extending toward the lateral border and floor of the mouth (Figure 1). The lesion was associated with impaired tongue mobility and severe pain upon movement. Given the high index of oncologic suspicion—supported by the patient's heavy smoking, alcohol, and opium consumption history—and the failure of prior empirical treatment, a repeat deep incisional biopsy was performed four months after the initial non-conclusive biopsy. The incision revealed prominent central tissue necrosis within the mass. Histopathological examination demonstrated invasive nests and sheets of atypical squamous epithelial cells with marked nuclear pleomorphism, hyperchromatism, prominent nucleoli, individual cell keratinization, and frequent abnormal mitotic figures, without keratin pearl formation—confirming the diagnosis of poorly differentiated squamous cell carcinoma.

The clinical staging was classified as cT4aN2bM0 (Stage IVA) according to the AJCC 8th edition. Following diagnostic confirmation, the patient experienced severe acute depression with explicit suicidal ideation. He was promptly enrolled in a dedicated head and neck multidisciplinary team conference (MDTC). The primary surgical intervention comprised a composite resection including a partial glossectomy of the left posterior tongue and floor of the mouth, ipsilateral selective neck dissection addressing levels I–IV, and mandibulotomy for surgical access. Given the extensive nature of the soft tissue defect, reconstruction was performed using a pedicled pectoralis major myocutane-

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ous (PMMC) flap harvested from the left chest wall (Figure 3). A temporary tracheostomy was performed to secure the airway during the immediate postoperative period, and a nasogastric feeding tube was inserted for nutritional support (Figure 2). Postoperative histopathological examination confirmed metastatic involvement in cervical lymph nodes without extracapsular extension, with clear surgical margins. Following adequate wound healing and decannulation, the patient received adjuvant concurrent chemoradiotherapy. Chemotherapy consisted of intravenous Cisplatin (100 mg/m$^2$ intravenously every 3 weeks for 3 cycles). Concurrently, intensity-modulated radiation therapy (IMRT) was delivered to the primary tumor bed and ipsilateral neck with a total dose of 66 Gy administered in 33 daily fractions of 2.0 Gy over 6.5 weeks.

Throughout treatment, oral medicine specialists implemented pre-radiotherapy dental stabilization and proactive oral supportive care—including professional oral hygiene, non-alcoholic chlorhexidine rinses, and artificial saliva—effectively minimizing radiation-induced mucositis and xerostomia. Following oncologic treatment, the patient experienced severe dysphagia, dysarthria, malnutrition with significant weight loss, and altered facial appearance, culminating in a relapse into substance dependence and exacerbation of severe depression one month postoperatively.

The MDTC initiated an intensive rehabilitative program involving psychiatry for substance abuse rehabilitation and psychotherapy, speech and language pathology for swallowing and speech retraining, and clinical nutrition. Secondary surgical revision of the tongue defect was deferred per surgical and patient consensus; thus, the oral medicine team coordinated with a maxillofacial prosthodontist to fabricate a customized tongue prosthesis and pharyngeal obturator to enhance speech and deglutition. Through rigorous quarterly multidisciplinary follow-up over a two-year period, the patient achieved complete substance cessation, resolution of depressive symptoms, and functional oral rehabilitation, with no clinical or radiographic evidence of locoregional recurrence or second primary malignancy.



*Figure 1.* Preoperative intraoral clinical view showing a large, exophytic, indurated mass with central ulceration and overlying hyperkeratotic white patches involving the posterior third of the left dorsal and ventrolateral tongue, extending toward the floor of the mouth.



*Figure 2.* Immediate postoperative view of the patient demonstrating facial and cervical surgical incisions, a temporary tracheostomy tube securing the airway, and marked postoperative edema following composite resection and neck dissection.



*Figure 3.* Donor site of the pedicled pectoralis major myocutaneous (PMMC) flap on the left chest wall, closed with surgical staples, with a passive drain in place during the early postoperative period.

## Discussion and Conclusion

The management of head and neck malignancies requires seamless collaboration among diverse disciplines within an MDTC, including oral medicine specialists, surgical oncologists, radiation and medical oncologists, maxillofacial prosthodontists, speech therapists, psychologists, and specialized palliative care teams [1-4]. A major vulnerability in current oncologic pathways remains the diagnostic delay of oral malignancies. Diagnostic delay—defined as the interval between the initial onset of signs or symptoms and the definitive histopathologic confirmation [6]—averages approximately 2.8 months worldwide, with up to 30% of patients experiencing delays exceeding 3 months [8]. Such delays frequently stem from clinical underestimation of persistent mucosal alterations, empirical treatment with anti-inflammatory agents without adequate tissue sampling, or non-representative superficial biopsies [7,9]. In this patient, an initial misdiagnosis of oral lichen planus and subsequent empirical laser and pharmacological therapy led to a critical four-month treatment delay. This underscores the essential role of oral medicine specialists as diagnostic gatekeepers. Their specialized expertise allows accurate differentiation between immune-mediated conditions and early malignancies, execution of precise deep-tissue incisional biopsies, and avoidance of unnecessary dental or invasive procedures [10,11].

Furthermore, oral cancer awareness campaigns frequently exhibit demographic disparities, missing younger individuals or those with complex risk-factor profiles such as polysubstance abuse [12]. In addition to early diagnosis, oral medicine specialists play an indispensable ongoing role across the MDTC care continuum. They deliver pre-treatment oral stabilization, manage acute toxicities such as oral mucositis and dysgeusia during chemoradiotherapy, monitor long-term sequelae (e.g., osteoradionecrosis and radiation-induced xerostomia), and maintain vigilant post-treatment mucosal surveillance to detect early recurrence or secondary primary neoplasms [4,11]. In conclusion, incorporating oral medicine specialists from the initial clinical encounter through long-term survivorship significantly curtails diagnostic delay, optimizes supportive care, and ensures comprehensive functional and psychosocial rehabilitation in head and neck cancer patients.

## Conflict of Interest

There is no conflict of interest to declare.

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