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Differential Response to Pregabalin in Coexisting Cervical Radiculopathy and Burning Mouth Syndrome: A Case Report

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Abstract

Background: Burning mouth syndrome (BMS) is a chronic oral pain disorder characterized by burning pain in the absence of visible mucosal lesions or identifiable laboratory abnormalities. Coexisting burning mouth syndrome and cervical radiculopathy may complicate interpretation of treatment response and suspected adverse drug reactions.

Case presentation: A 68-year-old woman with diabetes mellitus, hypertension, and hyperlipidemia presented with headache, dizziness, and occipital paresthesia. Cervical magnetic resonance imaging demonstrated multilevel degenerative changes with severe left foraminal stenosis at C3–4. Her cervical symptoms improved after pregabalin dose escalation from 50 mg to 75 mg twice daily. Approximately 7 weeks later, she developed burning tongue pain with metallic taste. Oral examination was normal, and laboratory studies were unremarkable. Pregabalin was discontinued because an adverse drug reaction was initially suspected; however, the tongue symptoms persisted for more than 5 months without improvement. Cervical epidural block completely relieved the headache and occipital paresthesia but did not change the tongue pain. Pregabalin was later reintroduced for recurrent cervical symptoms, resulting again in marked improvement of cervical symptoms without any change in the tongue pain. Repeated evaluations at tertiary hospitals found no structural or systemic cause.

Conclusion: This case suggests that temporal association alone is insufficient to establish drug causality. In patients with concurrent neuropathic pain syndromes, pregabalin may have markedly different effects on distinct pain generators, and persistent oral burning symptoms should prompt consideration of coexisting BMS rather than presumed medication toxicity alone.

Keywords: Burning Mouth Syndrome, Cervical Radiculopathy, Pregabalin, Neuropathic Pain, Differential Response, Case Report

Introduction

Burning mouth syndrome (BMS) is a chronic orofacial pain disorder characterized by intraoral burning pain in the absence of visible mucosal lesions or an identifiable local or systemic cause [1, 2]. It predominantly affects middle-aged and older women, especially peri- and postmenopausal women, and its pooled prevalence in the general population has been estimated at 1.73% [2, 3]. Neuropathic mechanisms have been proposed, including possible small-fiber neuropathy, although the pathophysiology remains incompletely understood [2, 4].

Treatment responses in BMS are heterogeneous. Systematic reviews and small clinical reports suggest that some patients may benefit from gabapentinoids, including pregabalin, whereas others do not [5-8]. We describe a patient with cervical radiculopathy and persistent burning tongue pain in whom pregabalin was reproducibly effective for cervical symptoms but had no effect on the oral burning symptoms. This case highlights the importance of distinguishing coexisting pain disorders from presumed medication-related adverse effects.

Case report

A 68-year-old woman with diabetes mellitus, hypertension, and hyperlipidemia developed headache and dizziness in August 2024 and underwent neurologic evaluation. Brain magnetic resonance imaging and angiography showed no acute intracranial lesion, with only minimal chronic ischemic changes. Because occipital discomfort and paresthesia persisted, she underwent

cervical spine magnetic resonance imaging, which demonstrated multilevel degenerative changes, including severe left foraminal stenosis at C3–4.

She was treated with pregabalin 50 mg twice daily, eperisone 50 mg twice daily, and celecoxib 100 mg twice daily. At her first pain clinic visit on September 25, 2024, the symptoms had partially improved, and the regimen was continued. Because intermittent occipital paresthesia persisted, pregabalin was increased to 75 mg twice daily on October 23, 2024.

At follow-up on December 4, 2024, she reported marked improvement in occipital tingling and pain after dose escalation. However, on December 16, 2024, she presented with new tongue discomfort and metallic taste. The tongue pain was intermittent and mild initially. Oral examination showed no visible lesion, erythema, or ulceration. Laboratory studies, including complete blood count, vitamin B12, folate, iron studies, and thyroid function tests, were within normal limits. Because the oral symptoms developed after pregabalin dose escalation, pregabalin-related adverse effect was initially suspected, and the drug was discontinued.

After discontinuation, her headache and occipital tingling recurred, whereas the tongue pain did not improve. At a pain clinic visit on January 22, 2025, the tongue pain had worsened and become more distressing. She was later lost to follow-up and stopped her remaining medications on her own.

She returned on June 3, 2025, with recurrent head tingling and discomfort. At that time, she had been off pregabalin for more than 5 months, yet the tongue pain had persisted without meaningful change. Because of concern regarding pregabalin re-exposure, cervical epidural block was performed for the cervical pathology. Two weeks later, her headache and occipital tingling had resolved completely, but the tongue pain and metallic taste remained unchanged. Further neurologic and otolaryngologic evaluations at tertiary hospitals did not identify any structural oral lesion or systemic cause.

Because mild occipital tingling later recurred, pregabalin 75 mg twice daily was restarted on August 22, 2025. Within 2 weeks, her cervical symptoms again improved markedly. In contrast, the burning tongue pain and metallic taste remained unchanged in character, frequency, and intensity. Based on the chronic burning tongue pain, normal oral examination, unremarkable laboratory findings, persistence despite prolonged pregabalin withdrawal, lack of worsening after rechallenge, and dissociation from cervical symptom control, the patient was considered to have coexisting cervical radiculopathy and burning mouth syndrome.

Discussion

This case demonstrates two coexisting neuropathic pain conditions with clearly different responses to pregabalin. The patient's cervical symptoms improved after pregabalin dose escalation, recurred after discontinuation, improved after cervical epidural block, and again responded after pregabalin rechallenge. In contrast, the burning tongue pain persisted regardless of pregabalin withdrawal, cervical intervention, or pregabalin reintroduction.

Initially, the temporal association between pregabalin dose escalation and onset of tongue symptoms raised concern for a drug-related adverse effect. However, the subsequent clinical course did not support direct causality. According to standard adverse drug reaction causality frameworks, temporal sequence alone is insufficient to establish causality, and the responses to withdrawal and re-exposure materially influence causality assessment [9]. In this case, the oral symptoms persisted for more than 5 months after discontinuation, worsened rather than improved during the withdrawal period, and did not worsen after pregabalin rechallenge, arguing against direct pregabalin causality.

The persistent burning tongue pain in the absence of oral lesions, laboratory abnormalities, or an identifiable systemic cause was most consistent with BMS [1, 2]. Published treatment data for BMS are heterogeneous; although pregabalin benefit has been described in case reports and small series, the response is inconsistent across patients [5-8]. The present case extends that observation by showing a reproducible pregabalin response in cervical symptoms but no apparent effect on the oral burning symptoms.

The cervical epidural block provided an additional clinical clue. It successfully relieved the headache and occipital paresthesia, supporting the cervical origin of those symptoms, but had no effect on the tongue pain. This dissociation suggests that the oral burning symptoms were mediated by a separate mechanism. BMS is also frequently accompanied by extraoral symptoms and somatic comorbidities, which may complicate clinical interpretation when multiple pain generators coexist [10].

The main clinical implication of this case is that temporal association alone should not be used to establish medication causality. When new symptoms arise during treatment, temporal association should be interpreted cautiously, and coexisting pain disorders should remain in the differential diagnosis, particularly in patients with complex neuropathic pain presentations.

Conclusion

We report a case of coexisting cervical radiculopathy and BMS in which pregabalin showed reproducible benefit for cervical symptoms but no effect on oral burning pain. Although the tongue symptoms first appeared after pregabalin dose escalation, the prolonged persistence after withdrawal and the absence of change after rechallenge did not support direct drug causality. This case highlights the need to distinguish coexisting pain generators from presumed medication-related adverse effects and underscores the limited value of temporal association alone in causal inference.

Informed Consent

Written informed consent was obtained from the patient for publication of this case report.

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