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Herpes zoster of the trigeminal nerve presenting as dental pain: A diagnostic challenge in outpatient practice

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Abstract

Background: Herpes zoster is caused by reactivation of latent varicella-zoster virus and typically presents with a painful, vesicular rash along a dermatomal distribution. Involvement of the trigeminal nerve, particularly the maxillary branch, is uncommon and may mimic odontogenic pain, leading to misdiagnosis and delayed treatment.

Case presentation: We report the case of a 52-year-old woman who presented to a dental clinic with acute unilateral maxillary pain, described as sharp and burning, without obvious dental pathology on examination or radiography. The pain followed the distribution of the maxillary branch of the trigeminal nerve. Forty-eight hours later, clusters of vesicular lesions appeared over the right cheek and upper lip, consistent with herpes zoster. Antiviral therapy with oral acyclovir was initiated promptly, along with analgesics, resulting in complete resolution of lesions and pain within two weeks. No post-herpetic neuralgia occurred during follow-up.

Conclusion: This case underscores the diagnostic challenge of herpes zoster involving the trigeminal nerve when it presents as isolated facial pain without rash. Awareness of this atypical presentation among primary care and dental practitioners is essential to facilitate early diagnosis and treatment, thereby reducing the risk of complications.

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Introduction

Herpes zoster is an acute, neurocutaneous disease caused by reactivation of latent varicella-zoster virus within the dorsal root or cranial nerve ganglia. It is characterized by neuropathic pain and a vesicular rash confined to one or more dermatomes, typically affecting the thoracic or lumbar regions [1]. Involvement of the trigeminal nerve accounts for approximately 10-15% of cases, with the ophthalmic branch being the most frequently affected. Maxillary and mandibular branch involvement is comparatively rare [2].

The clinical presentation of trigeminal herpes zoster can be variable, and in some cases, the prodromal phase manifests as isolated facial pain before the appearance of vesicular lesions. When pain is localized to the maxillary or mandibular region, it can closely mimic odontogenic pathology, often prompting patients to first seek dental evaluation [3]. Without characteristic

skin lesions, this prodromal pain is challenging to distinguish from dental or temporomandibular joint disorders, increasing the risk of misdiagnosis and delayed antiviral therapy [2,3].

Early recognition of herpes zoster is crucial because timely antiviral treatment can reduce the severity of acute symptoms, prevent ocular or neurologic complications, and lower the risk of post-herpetic neuralgia [1]. This case report describes an unusual presentation of herpes zoster involving the maxillary branch of the trigeminal nerve, initially mistaken for dental pain, and highlights the importance of interdisciplinary awareness between dental and medical practitioners in outpatient settings.

Case presentation

A 52-year-old woman presented to a dental clinic with a two-day history of sudden-onset, severe right-sided facial pain localized to the upper jaw and cheek. The pain was described as sharp, burning, and continuous, with intermittent exacerbations triggered by chewing and touching the skin. She denied fever, nasal congestion, or history of recent trauma. Her past medical history was unremarkable, with no known immunodeficiency, diabetes, or prior episodes of herpes zoster. She reported a history of varicella infection during childhood.

On examination, there was no facial swelling, erythema, or intraoral lesions. Dental inspection and percussion of the maxillary teeth were unremarkable, and panoramic radiography did not reveal any periapical pathology, sinus disease, or temporomandibular joint abnormalities. Given the absence of dental findings, the patient was reassured and prescribed symptomatic analgesics.

Within 48 hours, she returned with new-onset erythematous, grouped vesicular eruptions distributed over the right midface, including the upper lip, lateral nose, and malar area, corresponding to the dermatome of the maxillary (V2) branch of the trigeminal nerve. Neurological examination revealed intact motor function but reduced light touch sensation in the affected dermatome. No ocular involvement was detected.

A clinical diagnosis of herpes zoster of the trigeminal nerve (maxillary branch) was made. Laboratory testing was not deemed necessary given the characteristic presentation. The patient was started on oral acyclovir 800 mg five times daily for 7 days, along with oral ibuprofen and topical calamine lotion for symptomatic relief.

The lesions crusted over by day 10 of illness, with complete resolution by the end of the second week. At one-month follow-up, the patient remained pain-free, with no signs of post-herpetic neuralgia or secondary bacterial infection.

Discussion

Herpes zoster results from reactivation of the Varicella-Zoster Virus (VZV), which remains dormant in the sensory ganglia after primary infection. While the thoracic dermatomes are most frequently affected, cranial nerve involvement occurs in approximately 10-15% of cases, with the ophthalmic branch of the trigeminal nerve being the most commonly implicated. Involvement of the maxillary branch (V2) is comparatively rare and often under-recognized, especially when the initial presentation is isolated facial pain without rash [1,4].

The prodromal phase of herpes zoster is characterized by neuropathic pain, dysesthesia, or paresthesia in the affected dermatome, typically lasting 1-5 days before vesicular eruption. When the maxillary branch is involved, this pain can closely mimic odontogenic conditions such as pulpitis, periapical abscess, or sinusitis [2,3]. In our case, the patient sought dental care due to the localization of pain to the upper jaw and cheek. The absence of dental or sinus pathology should prompt clinicians to consider non-dental causes of facial pain, including trigeminal neuralgia, temporomandibular joint disorders, and, importantly, early herpes zoster.

The key to diagnosis lies in maintaining a high index of suspicion during the prodromal stage, especially in older adults or those with risk factors such as immunosuppression. Early initiation of antiviral therapy, ideally within 72 hours of rash onset, has been shown to reduce the severity and duration of acute symptoms and to lower the incidence of post-herpetic neuralgia [1]. In this case, the patient began antiviral therapy shortly after the appearance of vesicular lesions, leading to rapid resolution without chronic pain.

Several case reports have documented herpes zoster of the trigeminal nerve mimicking dental disease, emphasizing the importance of interdisciplinary collaboration between dental practitioners, primary care physicians, and neurologists. Dentists are often the first point of contact, and awareness of this entity can prevent unnecessary dental interventions and ensure timely medical referral [5,6].

Learning points from this case include

1. Isolated maxillary pain without dental pathology should raise suspicion for non-odontogenic causes, including herpes zoster.

2. Careful neurological and dermatological assessment in facial pain cases is essential, even in the absence of rash.

3. Early antiviral therapy is crucial for optimal outcomes and prevention of complications.

Conclusion

Herpes zoster involving the maxillary branch of the trigeminal nerve is an uncommon but important cause of facial pain in the outpatient setting. When presenting in its prodromal phase, it may closely mimic odontogenic conditions, leading to diagnostic delays and inappropriate treatment. This case highlights the need for clinicians, particularly dental practitioners and primary care providers, to maintain a broad differential diagnosis for unilateral facial pain, especially when routine dental and radiographic evaluations are normal. Early recognition and timely initiation of antiviral therapy are essential to achieve optimal recovery and minimize the risk of complications such as post-herpetic neuralgia.

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