

Acute Generalized Dentinal Hypersensitivity Following Excessive Intake of Ice-Cold Hibiscus Green Tea: A Case Report

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Case Report

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Abstract

Dentinal hypersensitivity is a common dental condition often triggered by thermal, chemical, or mechanical stimuli. While acidic beverages are known to contribute to enamel erosion and sensitivity, the impact of prolonged consumption of ice-cold herbal teas (high amounts in a short duration) has not been widely reported.

This report describes a 32 year old, female, patient who consumed ice-cold hibiscus green tea daily for a period of three weeks to alleviate gastrointestinal discomfort. One week after discontinuing the beverage, she presented with severe generalized dental hypersensitivity. No systemic symptoms or additional dental pathology were observed. In-office treatment consisted of liquid desensitizers applied to all teeth, along with recommendations for tooth desensitizing toothpaste and avoidance of extreme temperature foods and beverages.

This case highlights the potential for excessive consumption of cold, acidic herbal beverages to trigger acute, generalized dentinal hypersensitivity. Conservative treatment with Gluma provided immediate relief, and the patient is scheduled for follow-up.

Keywords: Dentinal hypersensitivity; Herbal tea; Hibiscus; Cold beverages; Erosion; Desensitizers; Case report

Introduction

Dentinal hypersensitivity is defined as a short, sharp pain arising from exposed dentin in response to external stimuli and cannot be ascribed to any other dental defect or pathology [1]. The condition affects an estimated 10–30% of adults, with prevalence influenced by dietary habits, oral hygiene techniques, and erosion-related enamel loss [2].

According to the hydrodynamic theory originally described by Brännström, fluid movement within open dentinal tubules, especially from cold or evaporative stimuli, triggers pulpal nerve responses resulting in pain [3]. This mechanism explains why both acidic and cold exposures heighten sensitivity.

Acidic beverages such as carbonated drinks, fruit juices, and certain herbal teas can lower intraoral pH below the critical threshold for enamel demineralization (~pH 5.5) [4]. Hibiscus-based beverages, in particular, have been shown to possess low pH levels ranging between 2.3 and 3.1, similar to many erosive dietary substances [5]. Repeated exposure may soften enamel surfaces, increase dentin exposure, and predispose patients to hypersensitivity.

This report describes a patient who developed acute generalized dentinal hypersensitivity following three weeks of daily ice-cold hibiscus green tea consumption.

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Case Presentation

A 32 year old, Hispanic female patient presented with the chief complaint of “sharp sensitivity on all my teeth”, noting that even plain water and cold air while speaking caused pain.

History of Present Illness

The patient reported that for three consecutive weeks, she consumed 5 glasses of ice-cold hibiscus green tea daily to alleviate stomach discomfort. She discontinued the beverage one week prior to her appointment, during which her stomach symptoms were resolved. Shortly after stopping the tea, she developed generalized hypersensitivity in all teeth. She had attempted relief with Sensodyne toothpaste but reported no significant improvement. Sensitivity was triggered by plain water, cold air, toothbrushing, and foods/beverages with extreme temperatures.

She denied bruxism, recent dental procedures, use of whitening products, or changes in oral hygiene habits.

Medical and Dental History

- No significant medical conditions reported
- No changes in medication
- Regular dental care, no previous history of widespread sensitivity

Clinical Examination

Clinical inspection revealed:

- Generalized sensitivity to air, cold, and gentle probing
- Mild enamel softening consistent with early erosive effects
- No carious lesions
- No fractured restorations or enamel cracks
- Minimal localized recession not consistent with the generalized symptoms
- Radiographs showed no periapical pathology, and the periodontal status was stable.

Diagnosis

Generalized dentinal hypersensitivity associated with acidic exposure and thermal insult from frequent intake of ice-cold hibiscus tea.

Treatment

The desensitizer was applied following manufacturer protocols. It’s mechanism involves precipitating proteins within dentinal tubules, thereby reducing fluid flow and sensitivity [6,7].

Home recommendations included using desensitizing (potassium nitrate) toothpaste, avoiding foods and beverages with extreme temperatures, avoiding acidic drinks, and transitioning to a soft-bristled brush.

Outcome

The patient did not reported back for a 7 day follow up, either via in-office visit. The office reached out to the patient via a phone call, to assess whether the recommended treatment and home care measures were effective in reducing sensitivity. The patient responded that the palliative treatment provided helped her and her teeth feel normal again.

Discussion

The patient’s symptoms are consistent with dentinal hypersensitivity caused by a combination of acid exposure and cold stimulation. Hibiscus beverages are recognized to have a highly acidic pH, with erosive potential similar to citrus-based drinks.⁵ Enamel softened by repeated acid challenges becomes more vulnerable to abrasion and subsequent dentin exposure [4,8]. When dentin tubules are exposed, cold stimuli cause rapid outward fluid displacement, which activates A-delta fibers and results in sensitivity [3].

Although the patient’s hypersensitivity became apparent only after discontinuing the beverage, enamel erosion is cumulative, and it is likely that dentin exposure reached a symptomatic threshold after three weeks of persistent intake. Despite reporting limited initial benefit from Sensodyne toothpaste, its continued use is recommended for ongoing management, as potassium nitrate acts by decreasing pulpal nerve excitability and stabilizing neural response over time [8,9].

The management provided, Gluma desensitizer, is supported by literature demonstrating significant short-term reduction in dentin hypersensitivity and effectively sealing dentinal tubules [6,7].

This case underscores the importance of educating patients about the dental risks of frequent acidic beverage intake, even when the drink is perceived as “natural” or “healthy.” Additionally, consuming such ice-cold beverages intensifies temperature-induced stimulation, exacerbating sensitivity.

Conclusion

Frequent intake of ice-cold hibiscus green tea may contribute to acute generalized dentinal hypersensitivity through acid-induced enamel softening and thermal activation of dentinal tubules. Conservative treatment with desensitizer medication provided rapid relief. Preventive counseling, ongoing use of desensitizing toothpaste, and regular follow-up remain essential for management.

Acknowledgement

Conflict of Interest

The author(s) declare no conflict of interest.

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