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PAROXYSMAL TOOTHACHE AFTER DRINKING: ALCOHOL-INDUCED VASOSPASTIC ANGINA

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ABSTRACT

A 68-year-old Japanese man presented with recurrent paroxysmal toothache exclusively after alcohol consumption. The episodes occurred 2–3 hours after drinking, lasted 10-15 minutes, and were unrelated to exertion or eating, chewing, or brushing the teeth. Physical examination and laboratory tests were unremarkable. Vasospastic angina was suspected based on the episodic nature and association with alcohol. Symptoms resolved within 1-2 minutes of nitroglycerin administration, confirming the diagnosis of alcohol-induced vasospastic angina. This case highlights the importance of considering cardiac causes, including vasospastic angina, in patients with unexplained paroxysmal symptoms such as toothache, especially when triggered by alcohol consumption.

KEYWORDS

Drinking, toothache, vasospastic angina

LEARNING POINTS

- Vasospastic angina is caused by transient abnormal contraction of the coronary arteries. Episodes last for 5-15 minutes and are most common in the late evening and early morning.
- In some patients with vasospastic angina, attacks occur only on drinking days, several hours after drinking. Alcohol-induced vasospastic angina is thought to be attributable to a functional disorder of vascular smooth muscle caused by acetaldehyde accumulation due to alcohol metabolism or transient coronary artery spasm associated with magnesium deficiency and increased endothelin-1 activity.
- Vasospastic angina can manifest as pain in the head and neck, teeth, arms and shoulders, and is often accompanied by chest pain. However, toothache can be the only symptom and is often bilateral, as in this case.

INTRODUCTION

Paroxysmal toothache is an uncommon symptom rarely associated with cardiovascular conditions and is typically attributed to dental or neurological disorders. However, atypical presentations of angina, such as pain localized to non-cardiac regions, have been increasingly recognized in clinical practice[1]. Vasospastic angina, characterized by transient coronary artery spasms, is one such condition that

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can present with non-cardiac pain, including discomfort in the jaw, head, or teeth[1]. These atypical symptoms pose a diagnostic challenge, particularly in the absence of concurrent chest pain. Alcohol consumption has been identified as a potential trigger for vasospastic angina in certain individuals[2-4]. This phenomenon is thought to be mediated by metabolic by-products of alcohol, such as acetaldehyde, and their effects on vascular smooth muscle function[2-4]. Despite this association, alcohol-induced vasospastic angina often remains underdiagnosed due to its rare and varied presentations. Here, we report the case of a 68-year-old Japanese man who experienced recurrent episodes of toothache exclusively following alcohol consumption. This case highlights the need to consider cardiac aetiologies in patients with unexplained episodic symptoms and illustrates the diagnostic challenges associated with atypical presentations of vasospastic angina.

CASE DESCRIPTION

A 68-year-old Japanese man presented with a 2-month history of paroxysmal toothache after consuming alcohol. The patient visited a dentist, but dental or temporomandibular joint pathology was ruled out. Because the cause of his symptoms was unknown, he was referred to our clinic. Two months previously, he developed toothache at 10 PM, approximately 2 hours after consuming alcohol. The symptoms improved after approximately 15 minutes but recurred repeatedly 2-3 hours after drinking. The toothache occurred about 2-3 times per month, only after alcohol consumption, and resolved spontaneously after approximately 10-15 minutes. The symptoms occurred regardless of the type or amount of alcohol consumed, but were not aggravated by exertion, eating, chewing, or brushing the teeth. The pain was distributed in the lower teeth bilaterally. His past medical history was hypertension and hyperuricemia, for which he had been prescribed 5 mg/day of amlodipine and 40 mg/day of febuxostat. He consumed 200 ml of Shochu twice a week, and did not drink alcohol in the morning or at lunchtime. He had smoked 20 cigarettes per day for over 48 years.

Physical examination revealed a temperature of 36.2°C, pulse rate of 75 beats/minute, blood pressure of 130/85 mmHg, respiratory rate of 12 breaths/minute, and oxygen saturation (SpO2) of 98% (ambient air). There was no percussion pain or tenderness in the teeth, and no sign of gum disease. Laboratory tests and an electrocardiogram showed no abnormalities. As the symptoms were paroxysmal, occurred at night after drinking alcohol, and were unrelated to exertion, we considered a diagnosis of vasospastic angina and prescribed oral nitroglycerin to take during toothache episodes. This relieved the symptoms within 1-2 minutes, confirming the diagnosis of alcohol-induced vasospastic angina. Although we recommended an acetylcholine loading test, the patient voluntarily reduced his drinking frequency and the episodes stopped, so he declined further investigation.

DISCUSSION

Vasospastic angina is caused by transient abnormal contraction of the coronary arteries. Episodes last for 5-15 minutes and are most common in the late evening and early morning[2,5]. In some patients with vasospastic angina, attacks occur only on drinking days, several hours after drinking[2-4]. Alcohol-induced vasospastic angina is thought to be attributable to a functional disorder of vascular smooth muscle caused by acetaldehyde accumulation due to alcohol metabolism or transient coronary artery spasm associated with magnesium deficiency and increased endothelin-1 activity[2-4]. Vasospastic angina can manifest as pain in the head and neck, teeth, arms and shoulders, and is often accompanied by chest pain[1]. However, toothache can be the only symptom and is often bilateral, as in this case[1]. Cardiac function may be normal other than during attacks, and the electrocardiogram and coronary artery computed tomography may show normal results, making diagnosis difficult. Additionally, for paroxysmal conditions, the acronym VAPES (vascular, allergy/autoimmune, psychiatric, endocrine/electrolyte/epilepsy, seizure/sleep/stone) offers a practical approach to efficiently narrow down potential causes[6]. In this case, recognizing the symptom as “paroxysmal” prompted consideration of vascular aetiologies, ultimately leading to the diagnosis of vasospastic angina[6].

In conclusion, angina should be considered in patients with paroxysmal toothache, which can occur only after alcohol consumption.

REFERENCES

1. Kreiner M, Okeson JP, Michelis V, Lujambio M, Isberg A. Craniofacial pain as the sole symptom of cardiac ischemia: a prospective multicenter study. *J Am Dent Assoc* 2007;**138**:74-79.
2. Yasue H, Nakagawa H, Itoh T, Harada E, Mizuno Y. Coronary artery spasm--clinical features, diagnosis, pathogenesis, and treatment. *J Cardiol* 2008;**51**:2-17.
3. Takizawa A, Yasue H, Omote S, Nagao M, Hyon H, Nishida S, et al. Variant angina induced by alcohol ingestion. *Am Heart J* 1984;**107**:25-27.
4. Miwa K, Igawa A, Miyagi Y, Fujita M. Importance of magnesium deficiency in alcohol-induced variant angina. *Am J Cardiol* 1994;**73**:813-816.
5. Beltrame JF, Crea F, Kaski JC, Ogawa H, Ong P, Sechtem U, et al. International standardization of diagnostic criteria for vasospastic angina. *Eur Heart J* 2017;**38**:2565-2568.
6. Ishizuka K, Ohira Y, Uehara T, Noda K, Tsukamoto T, Shikino K, et al. VAPES: a new mnemonic for considering paroxysmal disorders. *Diagnosis (Berl)* 2023;**10**:203-204.