

**Dangerous Cold Beverages:
A Case of Swallow Syncope**

To the Editor:

Swallow syncope is the loss of consciousness during or immediately after swallowing.¹ Usually, swallow syncope is caused by upper gastrointestinal-cardiac vagovagal reflexes and rapid gastric distention that are initiated by swallowing. Although rare, swallow syncope can impair a patient's quality of life significantly. Here, we report a case of swallow syncope caused by the consumption of cold beverages and review the relevant literature.

Funding: None.

Conflict of Interest: None.

Authorship: All authors listed in the manuscript had access to the data and a role in preparing the manuscript.

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CASE REPORT

We saw a 57-year-old man with a history of recurrent episodes of lightheadedness and syncope for several months. These recurrent episodes of presyncope and syncope affected his quality of life significantly, and he stopped driving to avoid accidents. His family history was unremarkable for arrhythmias or syncope. Results of physical examination, including a comprehensive cardiovascular and neurological examination, were normal. The initial electrocardiogram (ECG) showed a normal sinus rhythm, with normal QRS duration and normal QTc interval. However, a nurse noticed that while consuming a cold drink, the patient showed transient unresponsiveness; further, telemetry showed advanced heart block with a 3.4-second pause.

Further questioning revealed that his symptoms occurred mostly during swallowing, especially after the consumption of cold beverages. Hence, we obtained continuous 12-lead ECGs as the patient consumed ice water. In addition to the usual symptoms, the patient developed advanced heart block, with the longest pause of 3.4 seconds (**Figure 1A**). Hence, a rate-responsive, dual-chamber pacemaker was implanted. **Figure 1B** shows the repeat continuous ECG,

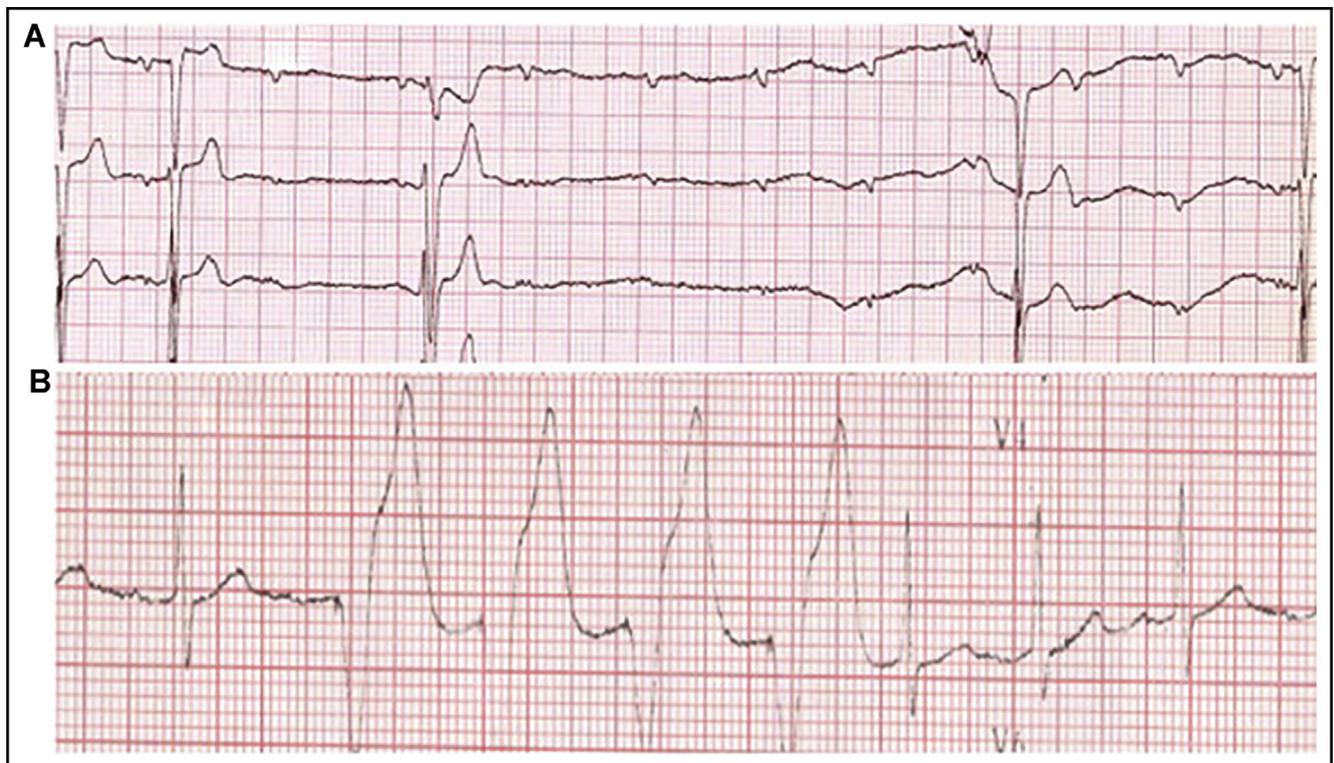


Figure 1 Electrocardiograms obtained while swallowing ice water. (A) At baseline. (B) After placement of the pacemaker.

after pacemaker placement, obtained while the patient drank ice water. The patient did not exhibit any symptoms of syncope, as the pause was averted by the pacemaker.

DISCUSSION

Swallow syncope is a relatively rare type of syncope that belongs to the neutrally mediated reflex syncopal syndromes.¹ Swallow syncope is caused by the stimulation, irritation, or dysfunction of the afferent origin of a vagovagal reflex (eg, the distal esophagus). In most cases, bradyarrhythmia after swallowing results in cerebral hypoperfusion and syncope. Although sinus bradycardia, sinoatrial block, and atrial and ventricular asystole have been reported, atrioventricular block is the most frequent cause of syncope. Some patients have a primary or concomitant vasodepressor component with hypotension preceding syncope or in the absence of bradycardia.²

A diagnosis of swallow syncope should be made only after carefully examining the temporal relationship between the swallowing of liquids or solid foods and the presentation of lightheadedness and syncope.¹ Provocative testing with various types of liquid and solid foods also should be conducted.¹ In addition, all patients presenting with unexplained syncope should be questioned if they had noted any possible relationship between the syncope episodes and swallowing.¹ Swallow syncope is often triggered by the consumption of liquids, particularly cold and carbonated beverages; however, selective precipitation of swallow syncope by solid foods also has been reported in individuals.³

Swallow syncope has been treated successfully with anticholinergic agents, sympathomimetic agents, surgical denervation of certain portions of the esophagus, and transvenous pacemaker placement (demand mode).⁴ Swallow syncope is a rare condition, and thus far, no randomized controlled trial has compared the efficacy of different treatment remedies such as medications, surgery, or pacemakers. Although swallow syncope is considered a benign condition, it can impair patients' quality of life significantly and cause considerable injury if it occurs

while driving or operating heavy machinery. Therefore, for many patients with swallow syncope, pacemaker implantation is considered the safest and most definitive treatment approach.³ However, patients with a significant vasodepressor component may not benefit from pacemaker implantation; hence, they should generally be managed pharmacologically.²

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<http://dx.doi.org/10.1016/j.amjmed.2014.01.021>

References

1. Olshansky BA. Pepsi challenge. *N Engl J Med.* 1999;340:2006.
2. Carey BJ, de Caestecker J, Panerai RB. More on deglutition syncope. *N Engl J Med.* 1999;341:1316-1317.
3. Armstrong PW, McMillan DG, Simon JB. Swallow syncope. *Can Med Assoc J.* 1985;132:1281-1284.
4. Omi W, Murata Y, Yaegashi T, Inomata J, Fujioka M, Muramoto S. Swallow syncope, a case report and review of the literature. *Cardiology.* 2006;105:75-79.