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## CLINICAL VIGNETTE

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# Cold Deglutition as a Rare Cause of Complete Heart Block

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### Case Presentation

A 73-year-old male presented with years of episodic lightheadedness, sometimes associated with syncope, which was uniquely triggered by eating or drinking ice cold food or beverages. He was a former local Olympic level swimmer in excellent physical health who swims several hours per week, often in the ocean, with no associated symptoms. The lightheadedness would occur almost immediately after ingesting a cold substance. If he ate or drank something warm immediately afterwards, his symptoms would rapidly abate. Otherwise, he would rest and the lightheadedness typically resolved over a minute or two. However, several episodes progressed to syncope and a fall. In addition to his exceptional exercise tolerance, he denied chest pain, palpitations, shortness of breath, edema, and other cardiopulmonary symptoms. He learned to modify his diet in order to avoid episodes, but eventually presented to his primary care physician after one of his longer syncopal events and underwent additional evaluation.

The patient was referred to cardiology who elicited symptoms by having the patient drink a cold beverage while on a cardiac event monitor. After ingesting ice water, the patient became severely lightheaded. The monitor showed a 4.4 second asystolic pause followed by 1 minute and 39 seconds of complete heart block which resolved spontaneously. Once his heart rhythm returned to normal, his symptoms resolved.

Given the length of the pause, the degree of heart block, and the severity of the symptoms, he was referred to electrophysiology for pacemaker evaluation and underwent a dual chamber pacemaker placement. After uncomplicated pacemaker placement he has remained asymptomatic. He can now enjoy an ice cream cone or a glass of ice-cold water after one of his hour-long swims.

### Discussion

Deglutition or swallow syncope is well described in the medical literature, with dozens of case reports of patients who experience syncope associated with swallowing.<sup>1</sup> This is attributed to a neurally mediated process due to the vagal nerve's course that runs along the esophagus. While no specific cause is identified in most cases, there appears to be an association with hiatal hernia or the ingestion of large food boluses which, stimulates mechanoreceptors.<sup>2,3</sup> The latter phenomenon has been reproduced with balloon dilatation. Other esophageal conditions, such as achalasia and esophageal cancer, have also been linked

with the condition.<sup>4,5</sup> Traumatic causes have been reported after a whiplash injury or carotid endarterectomy.<sup>6,7</sup> Others found a correlation with underlying cardiac issues, such as myocardial infarction or digoxin use.<sup>8,9</sup>

Few case reports have described specific food or temperature triggers, although some case series identified carbonated beverages as a common cause.<sup>1</sup> While case reports of swallow syncope linked to ingestion of cold beverages have been described, they have not demonstrated a correlation between temperature of liquids ingested and severity of cardiac response.<sup>10,11</sup>

### Conclusion

Very little is understood about the variety of triggers and underlying pathologies that can produce this unusual phenomenon. The severity of heart block and potential danger from sudden syncopal events, should prompt additional evaluation, including a "swallow" stress test should any physician encounter a patient with this condition. While not always indicated, implantation of a cardiac pacemaker is curative and considered first line treatment.<sup>1,3</sup>

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