

A Case Report of Paroxysmal Atrial Fibrillation

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ABSTRACT

Patient: Female, 59 years. Final Diagnosis: Paroxysmal atrial fibrillation cold-stimulus headache. Symptoms: Palpitations, Headache, Vomiting, and Tinnitus. Medication: Cordaron and Diltiazem. Clinical Procedure: None. Specialty: Internal Medicine.

Key words: Paroxysmal atrial fibrillation, Headache, Tinnitus

INTRODUCTION

Rapid consumption of ice-cold food and drink can cause paroxysmal atrial fibrillation (AF) episodes. The prevalence of this illness has not been adequately reported in studies, and little is known about it. Taking a patient's medical history and educating them about their condition could be compromised if treating doctors fail to recognize cold consumption as a cause of paroxysmal AF.

CASE REPORT

- A healthy 59-year-old woman arrived at the casualty complaining of abrupt, irregular palpitations 6 h before arrival and also headache, but headache resolved quickly. The symptoms began just as she started ingesting a commercial ice cream. Coincident with 4–5 episodes of abrupt, non-bilious, and non-projectile vomiting that contained food particles. The patient also complained of tinnitus during these episodes. Medical history was negative for any structural cardiac or neurological condition. For this complaint, she brought to SKN medical college casualty.
- When she arrived, at casualty, her headache and tinnitus resolved, but palpitation still persists. On arrival her vitals: PR 150/min, RR 20/min, and SPO₂ 98% on room

air. BP was 122/84 mm Hg, while irregularly irregular breathing was present. The patient was put on a cardiac monitor, a peripheral IV line was placed, and a 12-lead electrocardiogram (ECG) was obtained, suggestive of absent P wave with a rapid ventricular response which revealed AF stat dose Inj cordarone 300 mg was given and continued on infusion of 900 mg. Post-cordarone repeat ECG documented was normal [Figure 1].

- The patient was shifted to intensive care unit care. Where her electrolytes, cardiac enzymes, and serum thyroid level, levels were documented that were within normal limits while serum cholesterol levels (208) and Sr. triglycerides levels (246) were slightly raised. The patient was continued on cardiac monitoring. No repeat episode was noted. Inj cordarone was continued for 24 h later tapered and omitted and Tab Dilzem CR30 started. 2D Echo, Holter study documented was normal. Coronary artery angiography was done to rule out any structural causes of non coronary artery disease. She was discharged home with instructions to avoid coffee and cold beverages.

This ECG shows an absent P wave with an irregular ventricular rate suggestive of AF [Figure 1].

ECG showed normal sinus rhythm post-inj cordarone [Figure 2].

X-ray document is shown in [Figure 3].

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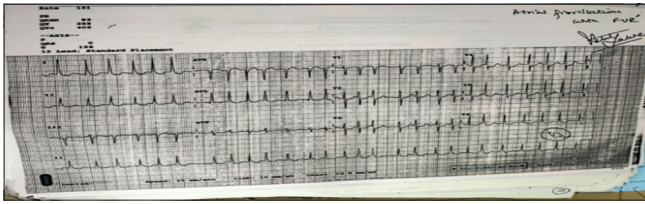


Figure 1: Post-cordarone repeat ECG

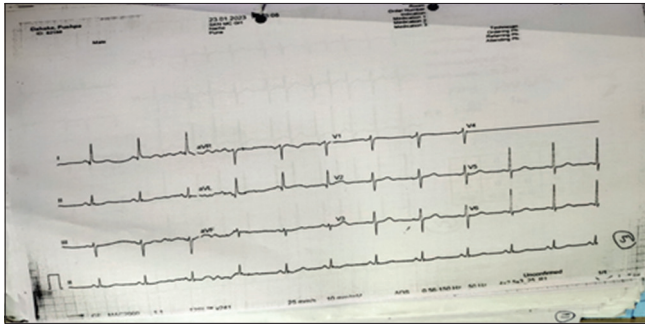


Figure 2: ECG showing normal sinus rhythm post-inj cordarone



Figure 3: Documented Xray

DISCUSSION

The present case demonstrated a strong link between consuming cold liquid or solids and AF. The origin of the arrhythmia was influenced by at least three significant factors:

1. The swallowing mechanism
2. The heightened vagal tone following exercise
3. Consuming ice-cold food or water.

This type of tachyarrhythmia may be brought on by mechanical stimuli, according to several investigations. By inflating a balloon at the level of the left atrium, Cohen *et al.* were able to cause AF, indicating that the left atrium may be mechanically stimulated by the esophagus contracting during food transit. When the balloon was inflated, AF retreated. Although this hypothesis is intriguing, there were problems with replication.

However, it must be remembered that an increase in intraesophageal pressure causes the vagus nerve's afferent and efferent branches to become active. The atrial ectopic activity resulting from the subsequent vasovagal reaction could cause an AF.

In addition, our athlete's enhanced vagal tone during exercise may significantly contribute to the development of AF following water consumption. In reality, atrial tissue's refractory time can be shortened by vagal stimulation of the atrial myocardium, which can also cause atrial ectopic activity that travels by circuitous pathways and causes supraventricular tachyarrhythmias.

However, certain data point to the sympathetic nervous system's participation. Shirayama *et al.*, for instance, documented a case in whom a rise in atropine and catecholamines were followed by a swallowing tachyarrhythmia.

In this regard, it should be highlighted that consuming ice-cold water resulted in AF in our patient. Only the activation of cold esophagus thermoreceptors that results in an adrenergic reflex may have caused the reaction to ice-cold water; the following sympathetic hyper-tone would produce an asynchrony in the recovery time, leading to a focused re-entry and subsequent atrial tachyarrhythmias.

Tascanov *et al.* have recently proposed that exposure to cold water may also raise cold oxidative stress parameters that have been shown to be important in initiating AF.

Verapamil, amiodarone, Class I antiarrhythmic medicines, and blockers are only a few examples of the medications that can be used to treat swallowing-induced arrhythmias. However, since the true etiology of these arrhythmias is still unknown, medications may make them worse.

CONCLUSION

This case study demonstrates how consuming cold beverages quickly can have negative medical effects. In our instance, eating ice-cream caused the onset of a headache, paroxysmal AF, nausea, and tinnitus all at once. While a cold-stimulus headache rapidly goes away after the trigger has been eliminated, paroxysmal AF can linger for a longer period of time and occasionally need medical attention. On discharge, the patient may not receive the optimal avoidance counsel if the treating physician is not aware of the link between cold intake and paroxysmal AF. Steer clear of dangers like ice cream. The present studies may improve our comprehension of the occurrence of cold-induced AF in patients seeking medical attention.

Our instance indicates that many processes underlie swallowing-induced AF, and esophageal stimulation may play a role in the onset of a variety of clinical tachyarrhythmias.

To fully understand whether a swallowing-induced tachyarrhythmia is merely a direct cause-to-effect phenomenon or a more complicated one including a brain mechanism, additional research is required.

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