

To eat, or not to eat...?: A live video case of swallowing-induced atrial tachycardia



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Introduction

A 69-year-old male patient was admitted to Sint-Jan Hospital in Bruges because of repetitive, short-lived paroxysms of palpitations that occurred invariably while eating (both hot and cold food). Because of this symptom, he developed a fear of food and preferred to starve rather than eat.

Case evaluation

A 12-lead baseline electrocardiogram at admission showed sinus rhythm without signs of ischemia. There were no abnormal findings on physical examination. Biochemical blood evaluation showed no abnormalities. An echocardiogram revealed a normal morphology and function of the heart.

Holter monitoring revealed bouts of regular supraventricular tachycardia while eating, with a maximal duration of 4 seconds and a ventricular response ≤ 210 beats per minute (bpm) (Figure 1). We filmed such an episode (Supplemental Video available online; Video stills 1 and 2). Clearly, runs of narrow complex tachycardia arise in short salvos during the swallowing phase. In between swallows, the heart converts to normal sinus rhythm. At the end of the recording, the tachycardia is characterized by aberrant conduction.

KEYWORDS Swallowing-induced; Atrial tachycardia; Ablation; Paroxysmal atrial tachycardia; Palpitations

ABBREVIATIONS AT = atrial tachycardia; AV = atrioventricular; bpm = beats per minute (Heart Rhythm Case Reports 2015;1:503–505)

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A diagnostic electrophysiological examination (while the patient ate cookies) showed an ectopic atrial tachycardia originating from the roof of the left atrium (Figure 2). This region was successfully ablated, and 6 months after the procedure, the patient was asymptomatic and free of palpitations during swallowing.

Swallowing-induced atrial tachycardia (AT) is a rare form of supraventricular tachycardia. In most individuals there is no underlying structural heart disease or any esophageal abnormality. Most frequently, an ectopic focus is present in the left atrium, and it is very often pulmonary vein mediated.¹ The observation, however, of an origin in the low posterior right atrium¹ or from the superior caval vein demonstrates that there is no predisposed region of this kind of AT.² Among the mechanisms that may explain swallowing-induced AT are:

- (1) Direct stimulation of the left atrium by the passage of contents or contraction of the esophagus. This hypothesis is strengthened when AT can be elicited by inflation/deflation of a balloon in the esophagus.³ However, it does not explain why “dry” swallowing can also precipitate arrhythmia in some individuals.⁴
- (2) Vagal stimulation. Although vagal stimulation is known to shorten atrial refractoriness in a nonuniform manner, this hypothesis does not explain why anticholinergic agents, such as atropine, fail to suppress this type of AT.⁵

Although swallowing-induced AT is a rare condition and etiology is still unknown, this video illustrates to what extent this arrhythmia may disable patients by compromising their nutrition. Monitoring patients while they have a meal allows for diagnosis on the spot.

KEY TEACHING POINTS

- The importance of anamnesis. In this case, from profound and detailed anamnesis of the onset and extent of the palpitations, one can suspect the possible diagnosis (if one is aware of the existence of this type of tachycardia).
- Proof of the arrhythmia. Many patients complain of having palpitations, but arrhythmia is hardly proven. If there is a diagnosis on Holter monitoring or ECG, targeted treatment is more likely.
- Rare entities of tachycardia. This case is a rare and unusual entity of atrial tachycardia, with high impact on the patient's quality of life. The etiology is not fully understood. Aberrant conduction may mimic a ventricular origin. Again, long-term monitoring to prove the arrhythmia may help diagnose and target treatment.

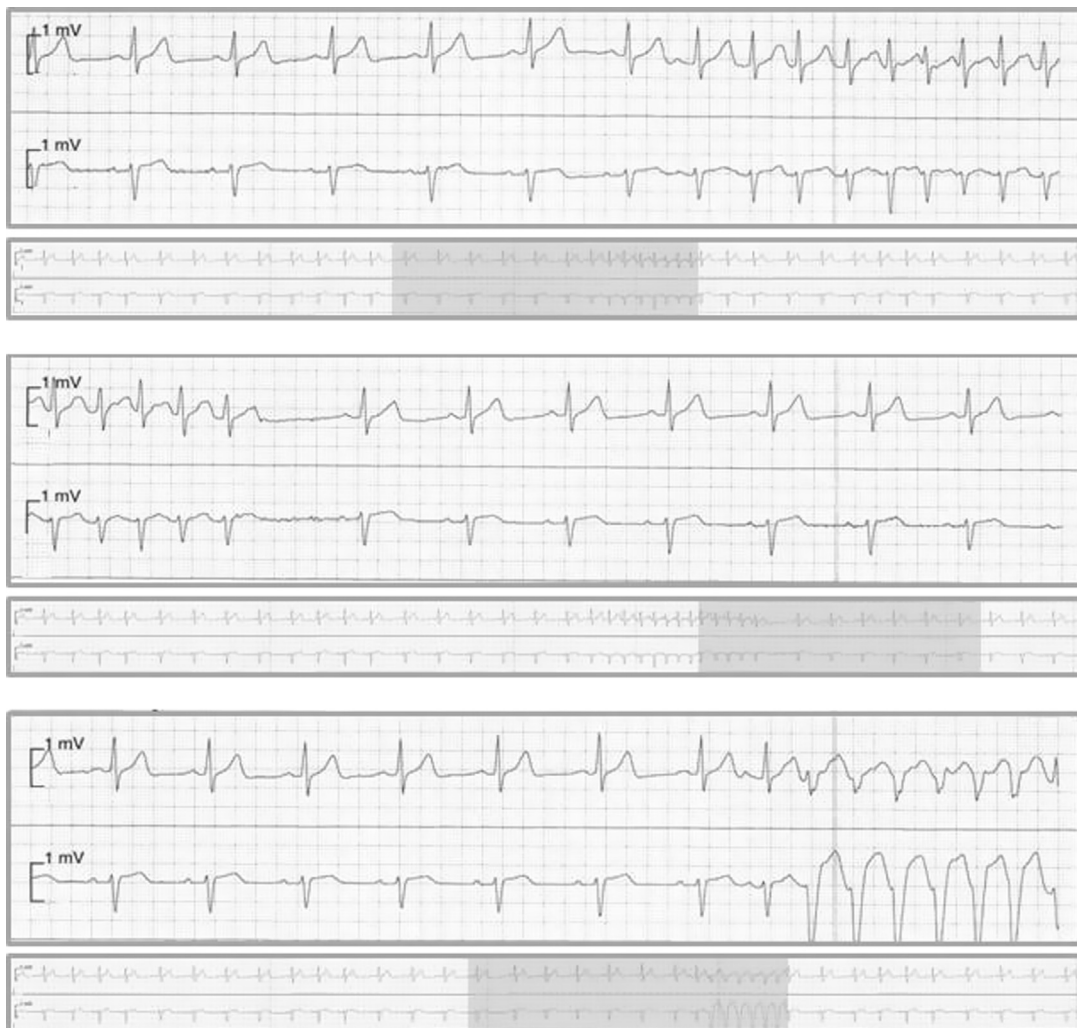


Figure 1 An extraction of Holter monitoring results. Short bouts of both narrow and wide complex tachycardia were recorded.

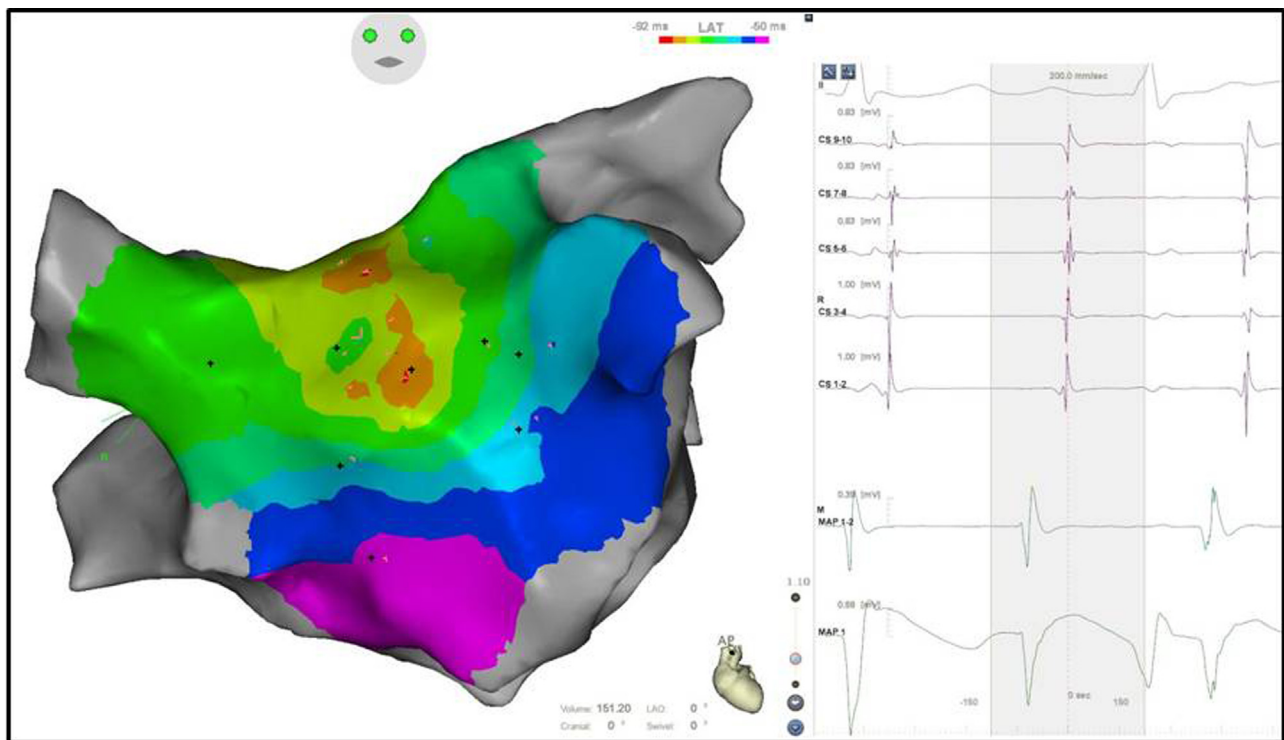


Figure 2 Activation map of swallowing-induced atrial tachycardia (left panel). The earliest activation was recorded at the roof of the left atrium (red zone). The corresponding early bipolar and unipolar electrograms are given (right panel, lower tracings).

Appendix

Supplementary data

Supplementary data associated with this article can be found in the online version at <http://dx.doi.org/10.1016/j.hrcre.2015.03.016>.

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