









## When arrhythmia saves lives: a case report

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**Introduction:** Cardiac arrhythmia refers to an abnormal heart rhythm. Approximately 5% of the general population will experience some form of it during their lifetime. Arrhythmias can be completely asymptomatic or cause significant symptoms, impairing daily life and even leading to sudden cardiac death. While often seen in a negative context, this paper highlights that in certain situations, arrhythmia can have beneficial effects, potentially lifesaving one. Atrial arrhythmias occasionally co-occur with sinus node disease (SND). Although the sinus node function can sometimes recover spontaneously, in some cases, the implantation of a permanent pacemaker becomes necessary.

**Case report:** This case study examines a 58-year-old patient who was hospitalized for electrophysiology study (EPS) due to recurrent atrial flutter (AFL) following a previous cavotricuspid isthmus ablation. During the EPS, right atrial mapping was performed via the right femoral venous approach. Upon catheter entry for heart mapping, the arrhythmia was unexpectedly terminated, revealing complete atrial standstill with no compensatory rhythm from the AV node or ventricles, leading to both atrial and ventricular asystole. This abrupt cessation of the arrhythmia unmasked the underlying SND, which had been masked by the presence of the AFL. Prolonged atrial arrhythmias are known to be a common cause of SND. The patient was briefly paced using a catheter positioned in the coronary sinus, and sinus rhythm was restored with isoproterenol, followed by 1 mg of atropine, calcium gluconate, and aminophylline. A temporary pacemaker electrode was placed in the right ventricle, and the puncture site in the right femoral region was closed with a Z-suture and elastic bandage. The patient maintained stable sinus rhythm post-procedurally, and the temporary pacemaker was removed the next day. SND predominantly affects older adults with comorbid cardiac conditions or diabetes mellitus. In this case, the patient had undiagnosed diabetes mellitus, contributing to the development of the sinus node disease.<sup>1,2</sup>

**Conclusion:** Although prolonged AFL negatively impacted the atrial myocardium, it inadvertently saved the patient's life by sustaining cardiac output. This case demonstrates that while arrhythmias are typically considered harmful, there are instances where they can have a lifesaving effect.

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### LITERATURE

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