Sinus Node Dysfunction (SND) in an Elderly Patient with Recurrent High-Risk Syncope Diagnosed by Electrophysiologic Study (EPS)

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**Introduction**: Syncope shares many clinical features with other disorders and presents with many differential diagnoses. Even more challenging is the evaluation of episodic loss of consciousness among elderly patients. One of the known causes of cardiac syncope is sinus node dysfunction (SND). Electrocardiography, telemetry monitoring, 24-hour Holter and implantable loop recorders (ILR) have been used to document and diagnose this condition. However, in our patient, whom SND was strongly suspected but no arrhythmia has ever been documented, electrophysiologic study (EPS) has provided the means in finally diagnosing the cause of his syncope.

**Methods**: Case Presentation. We report the case of a 93-year old priest with recurrent episodes of high-risk syncope resulting in injuries and multiple admissions for the past 3 years due to fall. Repeated neurologic work-up and initial cardiac work-up results were all negative. Tilt-table testing was done to test for reflex syncope which showed systemic vasodilation on administration of isosorbide dinitrate (ISDN). Due to the recurrence of episodes and associated injury, the patient underwent EPS during his last admission which finally diagnosed SND.

**Result**: Discussion. Early, rapid and intensive investigation is needed especially for patients with high risk features. These include syncope during exertion and no warning symptoms during attacks which the patient has. The sinus node recovery time (SNRT) in EPS is designed to test the automaticity of the sinus node during an electrophysiology study. The patient had prolonged SNRT and corrected SNRT during EPS which led to the diagnosis of SND.

**Conclusion**: Though the patient was already positive for a vasodilator type of reflex syncope, a condition not usually requiring treatment, a high index of suspicion for an arrhythmic cause of the symptoms helped in finally diagnosing sinus node dysfunction and definitively addressed it with permanent pacemaker insertion.