

Psychogenic Syncope? A Cautionary Note

KHALIL KANJWAL, M.D., YOUSUF KANJWAL, M.D., BEVERLY KARABIN, M.S.N.,
and BLAIR P. GRUBB, M.D.

From the *Department of Medicine, Division of Cardiovascular Medicine, Center for Autonomic Disorders, the University of Toledo Medical Center, Toledo, Ohio

Introduction: *In some patients with recurrent syncope, the etiology may remain unclear despite extensive evaluation. These patients may sometimes be labeled as having a “psychogenic” cause for their syncope.*

Methods: *We report on three patients with recurrent unexplained syncope (despite extensive evaluation) who were labeled as having a psychogenic cause for their events. In each patient following placement of an implantable loop recorder, their syncopal events were found to be due to periods of prolonged asystole and/or complete heart block. One patient had prolonged asystole for 44 seconds. In each patient, episodes of syncope were eliminated following permanent pacemaker implantation.*

Conclusion: *We conclude that physicians should exercise great caution before labeling any patient's syncope as psychogenic and that prolonged monitoring may be necessary to exclude a potential cardiac rhythm-related etiology. (PACE 2009; 32:862–865)*

psychogenic syncope, complete heart block, implantable loop recorder, asystole

Introduction

Recurrent syncope or transient loss of consciousness is a common clinical problem that accounts for 3% of all emergency department visits and 1–6% of all hospital admissions annually in the United States.^{1–4} While advances in our understanding of the causes of syncope, combined with advances in diagnostic modalities, have greatly reduced the number of patients with recurrent syncope of unknown origin, in at least 10% of syncope patients the cause remains unidentified.^{1,2} Before the advent of implantable loop recorders (ILR), there was a tendency to attribute recurrent syncope in these patients to psychogenic causes.^{5,6} While psychogenic syncope may occur in some patients, extreme caution should be exercised in using this diagnosis, as many of these patients may have an unidentified organic cause for their syncopal events. We report on a series of patients who were labeled as suffering from “psychogenic syncope” in whom prolonged monitoring with implantable loop recorders revealed a clear cardiovascular etiology for their episodic loss of consciousness.

Case 1

A 41-year-old woman was referred for evaluation of recurrent syncope of unknown origin. Her episodes first began at the age of 29 years. She described her episodes as consisting of a prodrome

of “ringing in her ears” followed by an abrupt loss of consciousness. Her husband described these as “her eyes rolled back” followed by her abruptly falling to the floor. Episodes were often accompanied by periods of “muscle jerking and shaking,” occasional urinary incontinence, and a loss of consciousness that would last anywhere from 10 seconds to 15 minutes. The frequency of these events was quite variable but averaged out to one every 1–2 months. Over the years, she had suffered from multiple traumas resulting from these syncopal events. She underwent extensive neurological evaluations (electroencephalography, magnetic resonance imaging of the brain, nerve conduction studies), all of which were unremarkable. She additionally underwent an extensive cardiovascular evaluation (including echocardiography, coronary angiography, electrophysiological studies, tilt table test, Holter and event recorder monitoring), all of which were also unremarkable. She also underwent endocrinologic evaluation (glucose tolerance testing and adrenal function testing), which were normal. Due to the aforementioned negative evaluations, she was labeled as suffering from “psychogenic syncope” as well as “social anxiety disorder” and did not undergo any additional evaluation for years. She became homebound and was afraid to leave her home because of the recurrent and unpredictable nature of her syncopal events. She was seen in our syncope clinic and thereafter underwent placement of an ILR.

Downloads from the ILR showed that her syncope was associated with periods of complete heart block with junctional escape rhythm of 30 beats/min. She thereafter underwent dual-chamber pacemaker implantation with complete elimination of her syncopal events. She is no

Address for reprints: Blair P. Grubb, M.D., Director of Electrophysiology Services, Division of Cardiology, Department of Medicine, Health Sciences Campus, University of Toledo Medical Center, Mail Stop 1118, 3000 Arlington Avenue, Toledo, OH 43614. Fax: 419-383-3041; e-mail: blair.grubb@utoledo.edu

Received November 6, 2008; revised December 31, 2008; accepted February 1, 2009.

longer homebound and has resumed a normal life.

Case 2

A 52-year-old woman was referred to the syncope clinic for evaluation of recurrent unexplained syncope. She reported having syncopal episodes as a child, which disappeared in her late teens. She began to experience syncope again in her late 20s, one of which resulted in a severe motor vehicle accident. She underwent extensive cardiac and neurologic evaluations over the years, all of which were unremarkable. She underwent a cardiac angiogram in her late 40s, which was complicated by an accidental dissection of a normal right coronary artery, which was treated by stent placement. Thereafter, her syncopal episodes increased in frequency and severity. She underwent electrophysiologic studies as well as prolonged Holter and event recorder monitoring, all of which were unremarkable. She also underwent extensive neurologic and endocrine evaluations that were inconclusive. As her increase in syncopal frequency also coincided with a divorce, she was labeled as being depressed and her syncopal episodes as “psychogenic” in nature. She described her episodes as having a prodrome of weakness, flushing, and nausea, followed by an abrupt loss of consciousness. While the frequency of her events was quite variable, they occurred at an average of one every 1–2 months (although events would sometimes occur in clusters). The duration of loss of consciousness ranged from 1 to 20 minutes. She thereafter underwent ILR placement. After ILR placement she had several syncopal episodes, all of which were associated with prolonged episodes of complete heart block with ventricular asystole. One event was observed by bystanders and was reported as a “seizure” that corresponded with a 44-second period of asystole recorded by the ILR. She thereafter underwent permanent pacemaker implantation with complete resolution of her syncopal episodes.

Case 3

A 50-year-old woman was referred to the syncope clinic for recurrent episodes of syncope, near syncope, and vertigo. These had begun years previously and slowly increased in frequency and severity over the years. Her episodes were described as a feeling of lightheadedness and/or vertigo followed by abrupt loss of consciousness. The episodes occurred on an average of once to twice a month, and the duration of loss of consciousness was reported ranging from 1 to 15 minutes. One of these syncopal episodes occurred during driving that resulted in a severe motor vehicle accident during which her son (who was a passenger in the

car) was killed. Afterward, her episodes increased in both frequency and severity. Her episodes then became more unpredictable as she used to suffer from multiple episodes in a month followed by periods of one episode every 1–2 months. She underwent extensive neurologic and cardiovascular examinations that were unremarkable. A tilt table test demonstrated mild orthostatic intolerance but did not reproduce any of her symptoms. At the same time she was diagnosed by a psychiatrist as having posttraumatic stress disorder and her episodes were labeled as psychogenic in nature. She also had a negative endocrine and neurological workup. After being seen in the syncope clinic she underwent ILR placement. Downloads from the ILR demonstrated episodes of complete heart block with an escape rhythm 30 beats/min during her syncopal episodes (Fig. 1). She thereafter underwent dual-chamber pacemaker insertion with elimination of her syncopal episodes.

Discussion

Recurrent episodes of unexplained syncope may have a variety of different causes. It has long been recognized that syncope may occur due to psychiatric causes.^{4,6–10} However, at the same time it should be remembered that patients with psychiatric disorders are not immune for organic illness, such as heart disease and cancer. In each of our patients, the history did not suggest the diagnosis of “psychogenic syncope”; rather, it was the failure of traditional neurologic or cardiovascular evaluation to ascertain the cause of their recurrent syncope that resulted in their episodes being labeled as psychogenic in nature. Interestingly, in each case once the “psychogenic” label was placed upon them all subsequent medical evaluation of their episodes effectively ceased. All patients in our series had unpredictable episodes of syncope. The frequency of these episodes was so variable from almost daily episodes to none in months. The episodes of syncope remained elusive and unexplained despite extensive cardiovascular, neurological, and endocrine evaluation. It was only after prolonged monitoring with the ILR that a cardiac rhythm disturbance was found to be responsible for their syncopal events. The role of the ILR is well established in the evaluation of unexplained syncope, particularly if other findings of conventional investigations (head-up tilt table and electrophysiological testing) are normal. Due to unpredictable and transient nature of rhythm disturbances in patients with unexplained syncope, the limitations of the traditional forms of rhythm monitoring, such as the Holter monitor and event recorder, is self-evident. Kassotis et al.¹¹ reports a case of a 49-year-old woman

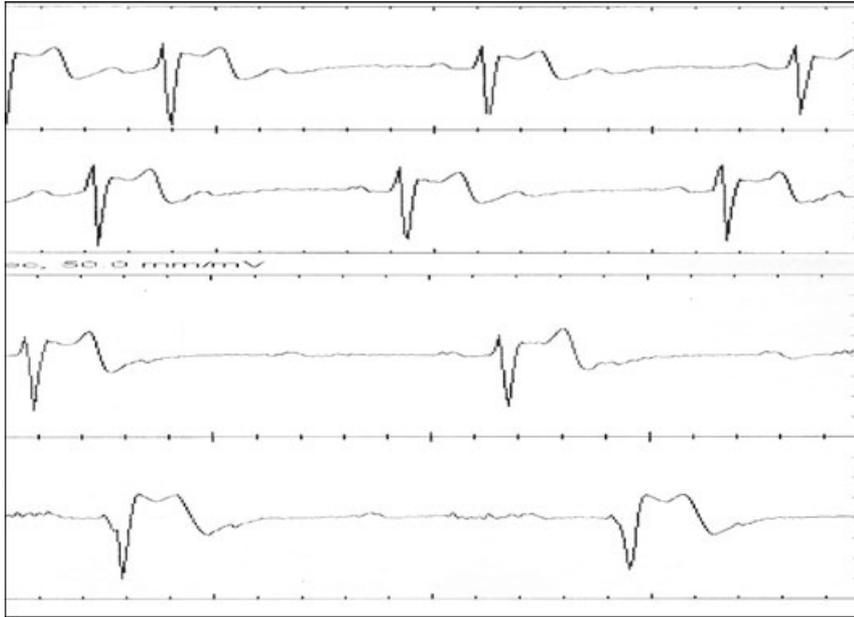


Figure 1. Tracing downloaded from implanted loop recorder shows complete heart block during periods of syncope.

with apparent panic disorder in whom the ILR monitoring showed that these episodes were secondary to episodes of ventricular asystole. In addition, a study by Zaidi et al.^{12,13} reported that up to 45% of patients with atypical seizures may have a cardiovascular cause of these events, and that a long-term cardiac rhythm monitoring plays an important role in identifying this subgroup of patients.

By increasing the diagnostic yield, loop recorders have also been shown to increase the electrocardiography-directed treatment in a select group of syncope patients.^{14,15}

All the patients in our series had received an extensive workup and the failure to arrive at correct diagnosis did not stem from a rush to dismiss the syncope as being of “psychogenic in origin.” In our series of patients, establishing the diagnosis would have not been possible without prolonged monitoring.

References

1. Brignole M, Alboni P, Benditt D, Bergfeldt L, Blanc J, Thomson P, Van dijk J, et al. Guidelines on management (diagnosis and treatment) of syncope. *Eur Heart J* 2001; 22:1256–1306.
2. Krahn AD, Klein GJ, Norris C, Yee R. The etiology of syncope in patients with negative tilt table and electrophysiological testing. *Circulation* 1995; 92:1819–1824.
3. Krahn AD, Klein GJ, Yee R, Norris C, Yee R. The etiology of syncope in patients with negative non-invasive and invasive testing: Final results from a pilot study with an implantable loop. *Circulation* 1995; 92:1819–1824.
4. Kapoor WN, Hammill SC, Gersh BJ. Diagnosis and natural history of syncope and the role of electrophysiologic testing. *Am J Cardiol* 1989; 63:730–734.
5. Kapoor WN, Fortunato M, Hanusa BH, Schulberg HCL. Psychiatric illnesses in patients with syncope. *Am J Med* 1995; 99:505–512.
6. Linzer M, Felder A, Hackel A, Perry AJ, Varia I, Melville ML, Krishnan KR. Psychiatric syncope: A new look at an old disease. *Psychosomatics* 1995; 31:181–188.
7. Mathias CJ, Deguchi K, Bleasdale-Barr K, Smith S. Familial vasovagal syncope and pseudosyncope: Observations in a case with both natural and adopted siblings. *Clin Auton Res* 2000; 10:43–45.
8. Petersen MEV, Williams T, Sutton R. Psychogenic syncope diagnosed by prolonged head-up tilt testing. *Q J Med* 1995; 88:209–213.
9. Ventura R, Maas R, Rüppel R, Stuhr U, Schuchert A, Meinertz T, Nienaber CA. Psychiatric conditions in patients with recurrent unexplained syncope. *Europace* 2001; 3:311–316.

In each of these patients, the etiology of recorded episodes of heart block is unclear, and may have been either due to atrioventricular nodal dysfunction or a manifestation of neurocardiogenic (vasovagal) syncope. A relatively preserved sinus rate would appear to make a purely vagal origin somewhat less likely (Fig. 1). After pacemaker placement their syncope events completely disappeared. One could again argue that this could be a placebo effect from implanted pacemaker.^{16,17} However, reports suggest that placebo as treatment cannot be so powerful as to cancel the positive effects of pacemakers.¹⁸

Conclusion

We conclude that great caution should be exercised by physicians before labeling any patient’s syncope as psychogenic in origin and that prolonged monitoring may be necessary to exclude a potential cardiac rhythm-related etiology.

PSYCHOGENIC SYNCOPE

10. Koenig D, Linzer M, Pontinen M, Divine GW. Syncope in young adults: Evidence for a combined medical and psychiatric approach. *J Int Med* 1992; 232:169–176.
11. Kassotis J, Yusupova M, Thoben D, Stawiarski M, Reddy CV. Syncope masquerading as a panic disorder: Role of subcutaneous loop recorder in eliciting the appropriate diagnosis. *Pacing Clin Electrophysiol* 2001; 24:1829–1830.
12. Zaidi A, Clough P, Cooper P. Misdiagnosis of epilepsy: Many seizures like episodes have cardiovascular cause. *J Am Coll Cardiol* 2000; 36:181–184.
13. Zaidi A, Clough P, Marwer G, Fitzpatrick A. Accurate diagnosis of convulsive syncope: Role of implantable subcutaneous ECG monitoring. *Seizure* 1999; 8:184–186.
14. Brignole M, Sutton R, Menozzi C, Garcia-Civera R, Moya A, Wieling W, Anderson D, et al., International Study on Syncope of Uncertain Etiology 2 (ISSUE 2) Group. Early application of an implantable loop recorder allows effective specific therapy in patients with re-current suspected neurally mediated syncope. *Eur Heart J* 2006; 27:1085–1092.
15. Farwell DJ, Freemantle N, Sulke N. The clinical impact of implantable loop recorders in patients with syncope. *Eur Heart J* 2006; 27:351–356.
16. Connolly SJ, Sheldon R, Thorpe KE, Roberts RS, Ellenbogen KA, Wilkoff BL, Morillo C, et al. Pacemaker therapy for prevention of syncope in patients with recurrent severe vasovagal syncope: Second vasovagal pacemaker study (VPS II). *JAMA* 2003; 289:2224–2229.
17. Raviele A, Giada F, Menozzi C, Speca G, Orazi S, Gasparini G, Sutton R, et al. The vasovagal syncope and pacing trial (SYNPACE). A randomized placebo controlled study of permanent pacing for treatment of recurrent vasovagal syncope. *Eur Heart J* 2004; 25:1741–1748.
18. Brignole M, Sutton R. Pacing for neurally mediated syncope: Is placebo powerless? *Europace* 2007; 9:31–33.