

Case  
Reports

# Migraine and Vasodepressor Syncope in a Large Family

Robert D. Paisley, BA  
Harvinder S. Arora, MD  
Alireza Nazeri, MD  
Ali Massumi, MD  
Mehdi Razavi, MD

We evaluated a 47-year-old woman for recurrent migraine and syncope. The patient had 7 children (not examined by the authors), all of whom also experienced migraine and syncope. The patient's father, now deceased, had reportedly experienced migraine and episodes of feeling faint. All 5 of the patient's siblings reported migraine, and 4 of the 5 reported syncope. The case of our patient, which we discuss herein, suggests a genetic link between these 2 conditions, both of which include vascular dysregulation in their pathogenesis. To our knowledge, the medical literature contains no previous description of familial associations of combined migraine and syncope. (*Tex Heart Inst J* 2009;36(5):468-9)

**H**ere, we describe the case of a 47-year-old woman who was experiencing recurrent migraine and syncope. Her medical history revealed that multiple members of her family also experienced migraine and vasodepressor neurocardiogenic syncope. Although the medical literature contains descriptions of familial associations regarding either migraine or vasodepressor syncope in isolation, we believe that this report is the first to document carriers of both conditions.

## Case Report

In June 2007, a 47-year-old woman was referred to us for evaluation of recurrent migraine and syncope. Her episodes of migraine had begun when she was 9 years old and were associated with lightheadedness but not loss of consciousness. The episodes persisted for hours or days and tended to occur during the patient's menstrual periods. The diagnosis of migraine was made by a neurologist.

The patient's 1st syncopal episode had occurred when she was age 27 years and pregnant. Subsequent syncopal episodes occurred with increasing frequency. The episodes were associated with recovery from exercise and with orthostatic stressors, including changes in position. The syncope often coincided with migraine.

Our physical examination of the patient was remarkable for orthostasis with coincident syncope. The results of echocardiography and an exercise stress test were normal. Extensive monitoring showed no evidence of coronary vasospasm or dysrhythmic events. One tilt-table test was positive for vasodepressor neurocardiogenic syncope upon the administration of nitroglycerin to the patient. A 2nd test, also with nitroglycerin, produced loss of consciousness but not vasodepression.

The patient's 7 children (not examined by the authors) all had historical and ongoing migraine and syncope. A 24-year-old son had undergone pacemaker implantation at age 12 toward the treatment of vasovagal syncope; he experienced headaches thereafter, but he had not received a neurologic diagnosis of migraine. A 21-year-old son experienced orthostatic syncope, in addition to episodic headaches. A 19-year-old daughter had headaches that were associated with menstruation and exacerbated by dehydration, in addition to syncope, related to postural changes. A 16-year-old daughter had neurologically diagnosed migraine that was associated with menstruation and orthostatic hypotension. She also had deep venous incompetence and superficial varicose veins of the lower limbs. A 14-year-old son experienced syncope that was associated with orthostatic changes, and (several times a month) episodes of migraine that were exacerbated by the same triggers as were his mother's episodes. A 12-year-old daughter had neurologically diagnosed migraine, and orthostatic dizziness and syncope. Our patient stated that her 5-year-old son had complained of headaches and of

**Key words:** Family; hypotension, orthostatic/epidemiology; migraine disorders/genetics; syncope/genetics

**From:** Department of Cardiology, Texas Heart Institute at St. Luke's Episcopal Hospital, and University of Texas Medical School at Houston, Houston, Texas 77030

**Address for reprints:**  
Mehdi Razavi, MD, 6624  
Fannin Street, Suite 2480,  
Houston, TX 77030-2312

**E-mail:**  
[hallgar@hgcardio.com](mailto:hallgar@hgcardio.com)

© 2009 by the Texas Heart®  
Institute, Houston

occasional difficulty rising from a seated position because of weak legs.

The patient's now-deceased father reportedly had also experienced migraine and episodes of feeling faint. All 5 of the patient's siblings had reported migraine, and 4 of the 5 had reported syncope.

Our patient's syncope was treated unsuccessfully with hyoscyamine, fludrocortisone acetate, prazosin, paroxetine, and licorice root (*Glycyrrhiza glabra*, a weak mineralocorticoid agonist) in succession. Compression stockings were prescribed, but the patient was averse to complying with this therapy. Her migraine was successfully treated with rizatriptan.

---

## Discussion

Although various investigators have documented the occurrence of syncope during migraine, the medical literature contains few data concerning an association between these conditions. The CAMERA study<sup>1</sup> found that migraineurs have a higher lifetime prevalence of syncope than do control subjects (46% vs 31%, respectively). Multiple studies of monozygotic and dizygotic twins have indicated genetic and environmental bases for migraine.<sup>2,3</sup> Familial inheritance of vasovagal syncope has also been repeatedly documented.<sup>4,5</sup> However, to our knowledge, there have been no previous reports of a familial association between both migraine and syn-

cope. Our patient and her immediate family experienced very similar symptoms. This implies that migraine in combination with syncope has a heritable component, and that the conditions in combination are more prevalent among 1st-degree relatives than in the general population. Additional studies should be undertaken in order to determine whether this hypothesis is true, and also to better understand these 2 conditions, both of which are associated with a substantially reduced quality of life. Clinicians who encounter patients with migraine or syncope should elicit thorough family histories in order to investigate potential associations between the conditions.

---

## References

1. Thijs RD, Kruit MC, van Buchem MA, Ferrari MD, Launer LJ, van Dijk JG. Syncope in migraine: the population-based CAMERA study. *Neurology* 2006;66(7):1034-7.
2. Ulrich V, Gervil M, Kyvik KO, Olesen J, Russell MB. Evidence of a genetic factor in migraine with aura: a population-based Danish twin study. *Ann Neurol* 1999;45(2):242-6.
3. Gardner KL. Genetics of migraine: an update. *Headache* 2006;46 Suppl 1:S19-24.
4. Marquez MF, Urias KI, Hermsillo AG, Jardon JL, Iturralde P, Colin L, et al. Familial vasovagal syncope. *Europace* 2005;7(5):472-4.
5. Mathias CJ, Deguchi K, Bleasdale-Barr K, Kimber JR. Frequency of family history in vasovagal syncope. *Lancet* 1998;352(9121):33-4.