have GERD and persistent unexplained diarrhea.

Sami R. Achem, MD
Alexander Klaus, MD
Ronald A. Hinder, MD, PhD
Kenneth R. DeVault, MD
Mayo Clinic
Jacksonville, Florida


A HEART INSULATED BY FAT

To the Editor:

Arrhythmogenic right ventricular dysplasia is a myocardial disease that can result in sudden death in young adults. Typical electrocardiogram (ECG) manifestations of this disease include one or more of the following: ventricular arrhythmia with a left bundle branch block pattern, epsilon waves, and a prolonged QRS complex over leads V1 through V3 (1). We describe a patient with arrhythmogenic right ventricular dysplasia who presented with frequent syncope with diffuse low voltage upon ECG recording.

A 47-year-old man was admitted due to recurrent syncope in the past month. Syncope was preceded by sudden-onset palpitations and occurred for 1 to 2 minutes. There was no history of systemic disease. On examination, there were no specific abnormal laboratory or physical findings except for diffuse low voltage on a 12-lead surface electrocardiogram (Figure 1). On the second day of admission, the patient suffered from another episode of syncope; ventricular tachycardia was documented upon ECG recording. After resuscitation, he regained consciousness without any neurological sequelae. Echocardiography revealed a dilated right ventricle with subtricuspid, infundibular, and apical diastolic bulging aneurysms. Magnetic resonance imaging (MRI) of the heart demonstrated generalized fatty tissue replacement of normal myocardium in the subepicardial layer of the anterior wall of the right ventricle and the free wall of the left ventricle (Figure 2). The patient was diagnosed with arrhythmogenic right ventricular dysplasia because of the ventricular arrhythmia and positive MRI findings. He received an implantable cardioverter-defibrillator (ICD); and no more syncpe episodes have been observed during 2 years of follow-up. The diffuse low ECG voltage was

Figure 1. Twelve-lead electrocardiography (ECG) reveals a diffuse low QRS voltage.

Figure 2. T1-weighted magnetic resonance image shows that the normal myocardium in the subepicardium layer of the anterior wall of the right ventricle and the free wall of the left ventricle have been replaced by fat.
thought to be caused by adipose tissue that had infiltrated both ventricles, thereby almost completely “insulating” the heart.

Arrhythmogenic right ventricular dysplasia is a myocardial disease that predominantly affects the right ventricle and that involves gradual replacement of normal myocardium with fibrofatty tissue (1,2). Treatment should be individualized according to the patients’ clinical situation; antiarrhythmic drugs, catheter ablation, or ICDs have been reported to be effective in patients with non–life-threatening ventricular arrhythmia (3). The fibrofatty tissue replacement may progress to the left ventricle and eventually cause biventricular heart failure. These patients may be candidates for heart transplantation. We report this case to alert physicians that arrhythmogenic right ventricular dysplasia may present as diffuse low voltage in addition to epsilon wave or wide QRS complex in leads V1 through V3 upon ECG recording. In conclusion, arrhythmogenic right ventricular dysplasia should be included in the differential diagnosis of unexplained syncope, particularly in patients with diffuse low voltage upon ECG recording.

Hsin-Bang Leu, MD
Wen-Chung Yu, MD
Tsui-Lieh Hsu, MD
Taipei Veterans General Hospital
National Yang-Ming University
School of Medicine
Taipei, Taiwan