A 34-year-old man had been having recurrent chest pain since August 2008. Several months earlier, an electrocardiogram taken during chest pain showed ST-segment depression in leads II, III, aVF, V5, and V6 (A). Echocardiography showed no left ventricular regional wall motion abnormalities, left ventricular ejection fraction 60%, mild mitral regurgitation, mild aortic regurgitation, and mild tricuspid regurgitation. A coronary angiogram (CAG) showed systolic constriction of the left main artery, proximal left anterior descending artery, left circumflex artery, and proximal major obtuse marginal branch (B and Online Video 1, right anterior oblique caudal view; D and Online Video 2, anteroposterior caudal view), which normalized during diastole (C and Online Video 1, right anterior oblique caudal view; E and Online Video 2, anteroposterior caudal view). The right coronary artery was absolutely normal. Computed tomography coronary angiogram was normal (F and G, Online Video 3). The patient was placed on a regimen of tablet aspirin, atorvastatin, metoprolol, and ramipril, and subsequently, diltiazem was added. He remained symptomatic, so surgical revascularization was advised. Unfortunately, the patient died before surgery could be done.