

showed an intrapericardial hydatid cyst attached to the diaphragmatic surface of both ventricles without infiltrating them.

Exclusively cardiac hydatid disease is rare (less than 2%). *Echinococcus granulosus* reaches the heart structures through systemic circulation or by extension from adjacent structures. Clinical development depends on the size, location and integrity of the cyst, but in some cases it is asymptomatic.<sup>1</sup>

Diagnosis can be complicated. It should be suspected from a chest radiography or echocardiography, which can easily detect deformities in the cardiac silhouette, and in the case of echocardiography, the possible existence of functional compromise. The study should subsequently be completed using computed tomography and/or high-resolution magnetic resonance imaging, which are superior to ultrasound tests in detecting structures within the mass and in defining their scope and relationship with adjacent tissues, with a view to possible surgery.<sup>2</sup>

The definitive treatment is surgical resection of the cyst, especially to avoid complications. It is sometimes used in association with medical treatment with antiparasitic drugs. In

this case, the patient was not operated on, as he was asymptomatic and rejected the intervention.

Ane Elorriaga,\* Ainhoa Rubio, and Javier Bóveda  
Servicio de Cardiología, Hospital de Basurto, Bilbao, Vizcaya, Spain

\*Corresponding author:

E-mail address: aneelorriaga@yahoo.es (A. Elorriaga).

Available online 1 April 2011

## REFERENCES

1. Murat V, Quian Z, Guo S, Qiao J. Cardiac and pericardial echinococcosis: report of 15 cases. *Asian Cardiovasc Thorac Ann.* 2007;15:278-9.
2. Vural M, Sayin B, Pasaoglu L, Koparal S, Elverici E, Dede D. Isolated pericardial hydatid cyst in an asymptomatic patient: a remark on its radiologic diagnosis. *Clin Imaging.* 2007;31:37-9.

doi:10.1016/j.rec.2010.10.021

## Percutaneous Revascularization of Chronic Total Occlusion of the Left Main Coronary Artery

### Revascularización percutánea de oclusión total crónica del tronco común izquierdo

#### To the Editor,

A 54-year-old, Caucasian, hypertensive, cigarette smoking man with hypercholesterolemia and without previous cardiovascular events or history of chest pain was hospitalized for dyspnea and

increased New York Heart Association (NYHA) scale. Both physical and electrocardiogram examination were within normal limits. Echocardiogram showed anterior-apical akinesia and hipokinesia of the remaining segments with severe left ventricular dysfunction: left ventricular ejection fraction (LVEF) 20%. Cardiac catheterization was then performed. Left main coronary artery (LMCA) was occluded at its very proximal portion (Fig. 1A). Right coronary artery (RCA) had a severe stenosis in the mid-distal segment (Fig. 1B). The collateral flow ran from septal branches to the left anterior descending (LAD) and from lateral branches to the left circumflex (LCX) showing a left coronary artery without stenotic lesions (Fig. 1C). A myocardial single photon emission

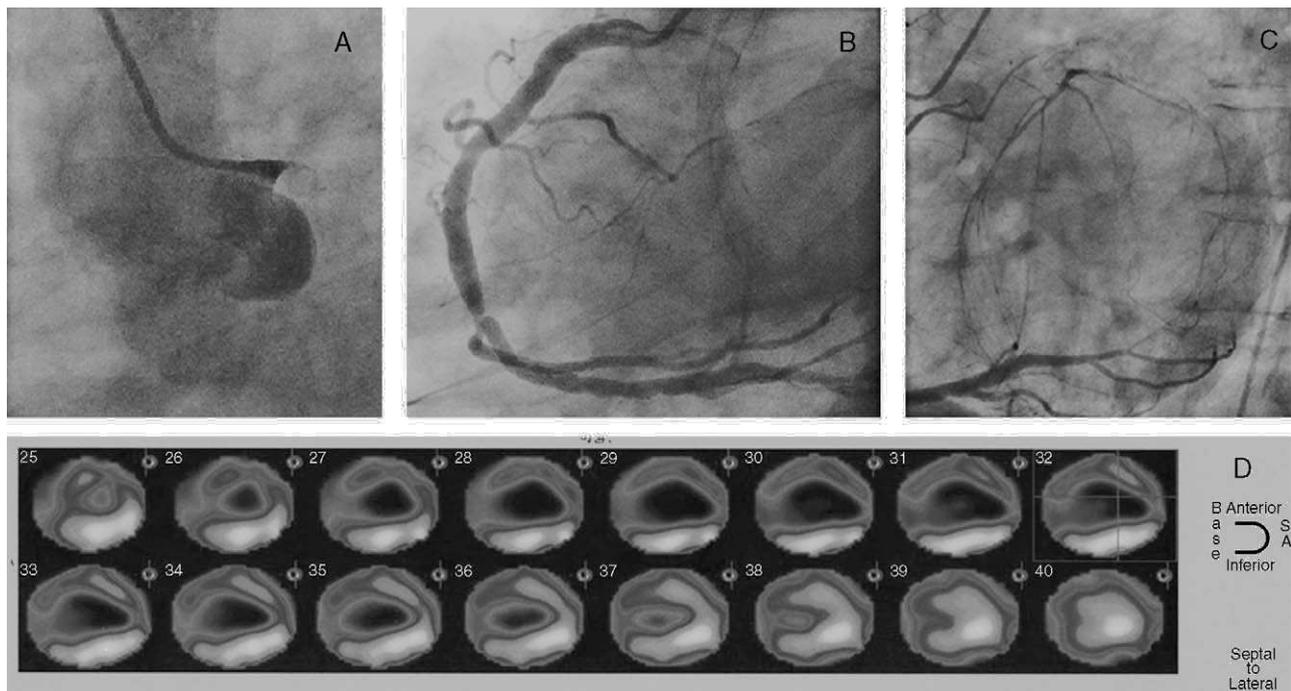
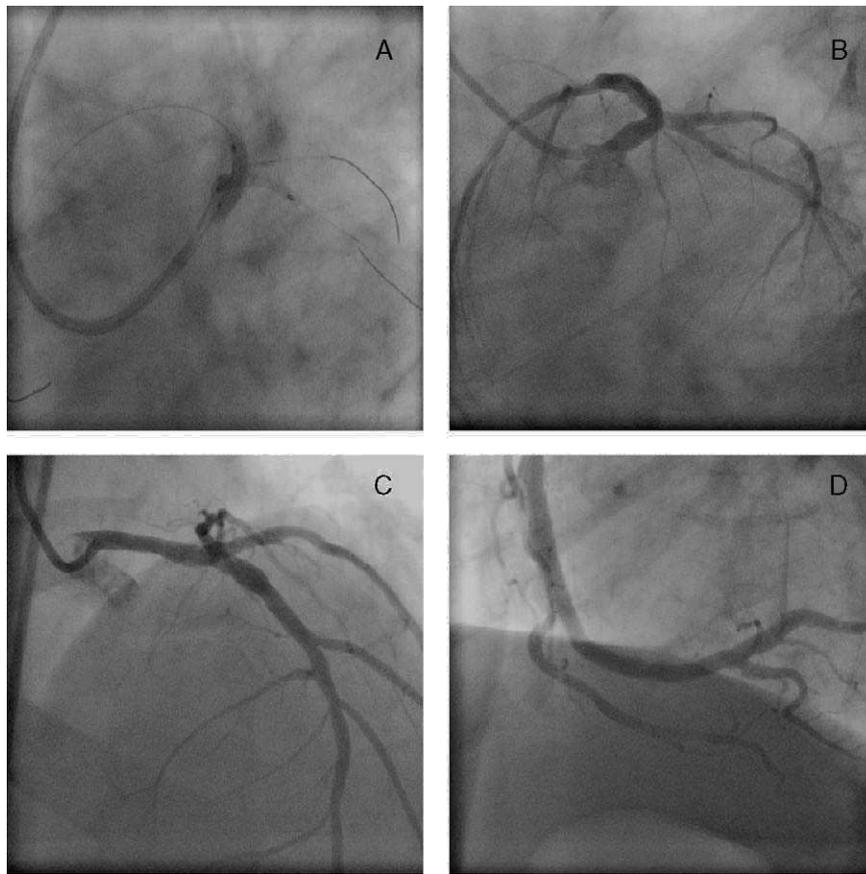


Figure 1. A-C: Admission angiography. D: Admission single photon emission tomography.



**Figure 2.** A: Percutaneous coronary intervention on left main coronary artery. B and C: Left main coronary artery after percutaneous coronary intervention. D: Right coronary artery after percutaneous coronary intervention.

tomography (SPECT) showed preserved viability in the inferior-lateral portion; no perfusion was detected in the anterior-apical segments, suggesting necrosis (Fig. 1D). The patient was then evaluated by cardiac surgeons who contraindicated a coronary artery bypass graft due to the absence of viability in the anterior wall. We then performed a percutaneous coronary intervention (PCI) of RCA, following an attempted PCI of the LMCA. The decision was based on no history of myocardial infarction, suggesting presence of severely hypoperfused but potentially still viable myocardium. The procedure was successful: we implanted a Paclitaxel-eluting stent  $3.5 \times 28$  mm on LMCA-LAD, followed by a kissing balloon on LAD-LCX (Fig. 2A-C); subsequent intravascular ultrasound examination guided expansion optimization. Two days later, we performed a PCI of RCA using a bare metal stent  $4.5 \times 12$  mm (Fig. 2D). Intraprocedural intra-aortic balloon pump device could not be used due to the occlusion of the left common iliac artery. The patient was then discharged asymptomatic with clopidogrel, acetylsalicylic acid, beta blocker, angiotensin-converting enzyme inhibitor-I, and statin as pharmacological treatment. At 1 month follow-up visit he was asymptomatic and reported no cardiac events; the echocardiogram showed a slight LVEF improvement (26%); no change was made in pharmacological therapy. At 4 months follow-up the patient reported an improvement in physical capacity, in accordance with an echocardiogram showing further LVEF improvement (43%). No inducible ischemia was detected in an ECG treadmill test at 12

months follow-up. The patient was totally asymptomatic and the echocardiogram confirmed the improvement in the LVEF (46%). Chronic total occlusion (CTO) of the LMCA is a rare but critical condition that can exist only in patients with a dominant RCA and good collateral formation.<sup>1-3</sup> The clinical course of this condition is varied<sup>4,5</sup> and its correct treatment is still unclear, debating between percutaneous and surgical revascularization. In the case we present, however, coronary artery bypass graft was avoided because of the absence of perfusion in the anterior-apical segments (revealed by SPECT) and the high operative risk due to low LVEF.

The PCI was programmed with an Intraprocedural intra-aortic balloon pump as a supportive device that could not be used because of the occlusion of the left common iliac artery. In this case, we had no hemodynamic complications or arrhythmic events, probably due to the presence of a CTO with a well collateralized LMCA ("protected LMCA"). The most important aspect of this case is the improvement of LVEF. Even though SPECT showed a large necrotic portion, this patient received an important benefit from revascularization, probably because the LMCA occlusion did not occur acutely but was a chronic progressive condition with the development of good collateral flow that lead to severely hypo-perfused but still viable myocardium.

Although we did not perform a pre-PCI cardiac positron emission tomography or a follow up SPECT, myocardial hiberna-

tion remains the most likely hypothesis explaining the improvement of the left ventricular systolic function.

Gioel Gabrio Secco,\* Paolo Nicola Marino, Luca Venegoni, and Giuseppe De Luca

Dipartimento di Cardiologia, Ospedale "Maggiore della Carità", Università degli Studi del Piemonte Orientale, Novara, Italy

\*Corresponding author:

E-mail address: gioel.gabrio.secco@gmail.com (G.G. Secco).

Available online 5 April 2011

## REFERENCES

1. Goldberg S, Grossman W, Markis JE, Cohen MV, Baltaxe HA, Levin DC. Total occlusion of the left main coronary artery - a clinical, hemodynamic and angiographic profile. *Am J Med.* 1978;64:3-8.
2. Sugishita K, Shimizu T, Kinugawa K, Harada K, Ikenouchi H, Matsui H, et al. Chronic total occlusion of the left main coronary artery. *Intern Med.* 1997;36:471-8.
3. Koster NK, White M. Chronic effort-induced angina as presentation of a totally occluded left main coronary artery: a case report and review. *Angiology.* 2009;60:382-4.
4. Zimmer SH, Rogers WJ, Bream PR, Chaitman BR, Bourassa MG, Davis KA, et al. Total occlusion of the left main coronary artery: the Coronary Artery Surgery Study (CASS) experience. *Am J Cardiol.* 1982;49:2003-10.
5. Shahian DM, Butterly JR, Malacoff RF. Total obstruction of the left main coronary artery. *Ann Thorac Surg.* 1988;46:317.

doi:10.1016/j.rec.2010.10.031

## Polymorphic Ventricular Tachycardia After Atropine Use During Stress Echocardiography

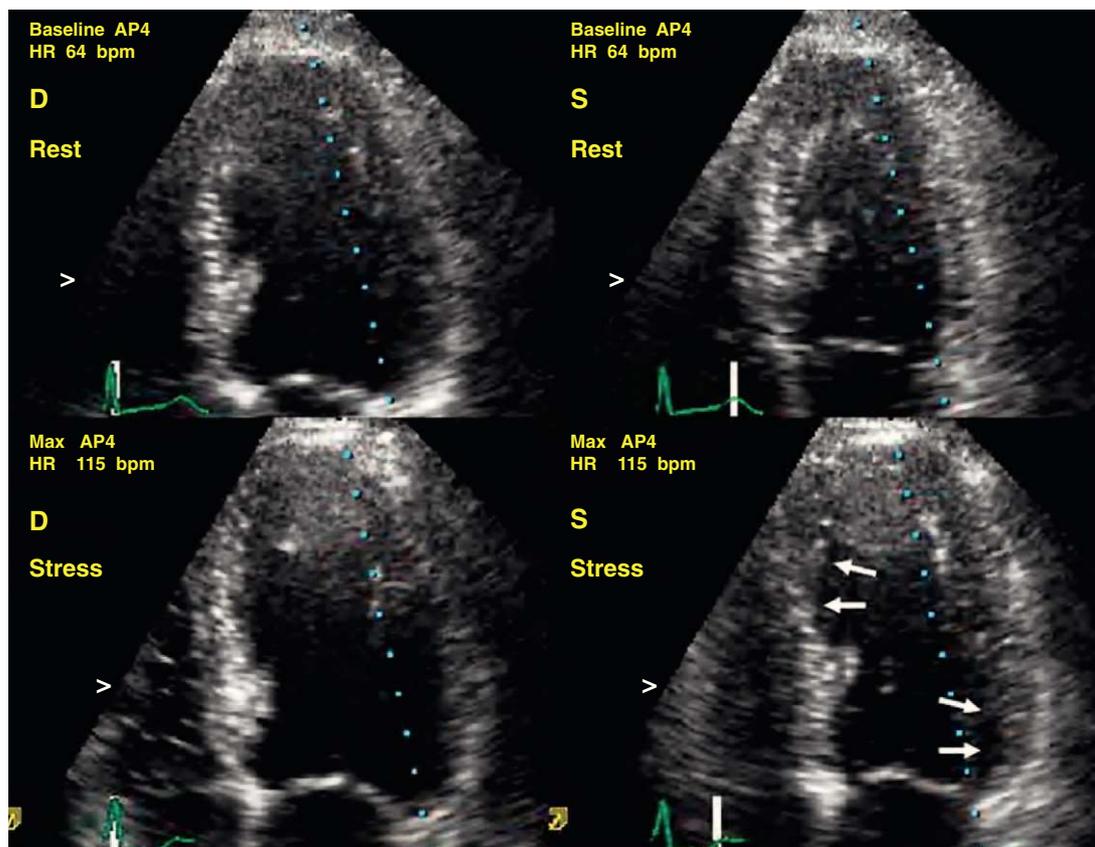
### *Taquicardia ventricular polimórfica tras la administración de atropina durante una ecocardiografía de esfuerzo*

To the Editor,

Stress echocardiography offers diagnostic capacity for the detection of myocardial ischemia that is superior to stress testing with an electrocardiogram (ECG), irrespective of patient age or sex,<sup>1</sup>

and its use is preferable to dobutamine stress echocardiography in subjects able to exercise.<sup>2</sup> The test is indicated in the diagnosis of ischemic heart disease in patients with suspected coronary disease or pathological baseline ECG and inconclusive conventional stress testing; in this type of patient, the test provides relevant prognostic information to predict mortality and major cardiovascular events.<sup>3</sup>

We describe a 59-year-old man with hypertension as the only cardiovascular risk factor. Some years previously, he had experienced an angina-like episode; however, the stress test was negative for ischemia and he was asymptomatic afterwards. Recently, the patient was again referred to our hospital for stress echocardiography following an episode of chest pain at rest. An



**Figure 1.** Stress echocardiography. Development of apical septal, lateral basal, and posterior hypokinesia during maximum exertion following the administration of intravenous atropine (arrows). bpm, beats per minute; D, end-diastolic; HR, heart rate; S, end-systolic.