Coronary-subclavian steal syndrome

Alberto Bouzas-Mosquera MD, Jorge Salgado-Fernández MD, Ramón Calviño-Santos MD, Guillermo Aldama MD, José Manuel Vázquez-Rodríguez MD, Nicolás Vázquez-González MD, Alfonso Castro-Beiras MD

A 58-year-old man was admitted with exertional angina. Two years previously, he underwent myocardial revascularization consisting of a left internal mammary artery (LIMA) graft to the left anterior

Figure 1) Left coronary angiography showing retrograde flow from the coronary tree through the mammary artery bypass grafts. LIMA Left internal mammary artery; RIMA Right internal mammary artery

descending coronary artery, and a right internal mammary artery graft from the LIMA to the ramus intermedius and to a left posterolateral branch. His physical examination was remarkable for the presence of a left supraclavicular bruit, and weak left radial and brachial pulses, with a significant discrepancy in blood pressure between the right (120/80 mmHg) and left (80/45 mmHg) arms. Contrast injection into the left main coronary artery (Figure 1) showed no evidence of progression of native coronary atherosclerotic disease, but did demonstrate a striking retrograde flow from the coronary tree through the grafts, which were all patent. A left subclavian artery angiography was subsequently performed, revealing a high-grade subclavian stenosis proximal to the origin of the LIMA (Figure 2A). The patient was successfully treated with subclavian balloon angioplasty and stent placement (Figure 2B), and has remained asymptomatic after a two-year follow-up.

In patients with mammary-coronary bypass grafts, the presence of a subclavian artery stenosis proximal to the internal mammary artery may result in a condition termed 'coronary-subclavian steal syndrome', which may cause a reversal of flow through the grafts from the coronary to the subclavian circulation, resulting in myocardial ischemia (1,2). Surgical therapy (carotid-subclavian or carotid-axillary bypass) was considered to be the procedure of choice in the past, but presently, percutaneous angioplasty and stenting of the subclavian artery is the most widely recommended therapeutic option.

REFERENCES

1. Kroll CR, Agarwal M, Stouffer GA. Angiographic evidence of coronary-subclavian steal syndrome. *Circulation* 2002;105:e184.
2. Bilku RS, Khogali SS, Been M. Subclavian artery stenosis as a cause for recurrent angina after LIMA graft stenting. *Heart* 2003;89:1429.

Figure 2) Subclavian artery angiography before (A) and after (B) stent placement. LIMA Left internal mammary artery

Department of Cardiology, Juan Canalejo Hospital, A Coruña, Spain

Correspondence: Dr Alberto Bouzas-Mosquera, Servicio de Cardiología, 8ª planta, Hospital Juan Canalejo, As Xubias, 84, A Coruña 15006, Spain.

Telephone 34-981178184, fax 34-981178258, e-mail aboumos@canalejo.org

Received for publication May 18, 2007. Accepted June 16, 2007