Case Report

Stent Implantation in Critical Stenosis of the Celiac Trunk: Enlarging the Frontiers of Percutaneous Vascular Intervention

Alexandre Schaan de Quadros, Rogério Sarmento-Leite, Cláudio Vasquez Moraes, Luis Maria Yordi
Porto Alegre, RS - Brazil

Symptomatic mesenteric ischemia usually associated with severe and diffuse atherosclerosis of the visceral arteries is a rare clinical situation, difficult to treat.

We describe here the case of a 75-year-old woman with disabling mesenteric angina and stenosis of 80% in the origin of the celiac trunk, proximal stenosis of 50% in the superior mesenteric artery, and occlusion of the inferior mesenteric artery. A stent was successfully implanted in the ostium of the celiac trunk, without complications. The symptoms reversed in the first postoperative day, and the patient has remained asymptomatic for one year after the procedure, which is considered safe and efficient and which may become the treatment of choice for this disease.

Case Report

A 75-year-old-female, with progressive epigastric pain in the prior 3 months, starting during meals and stopping after 30 minutes, evolved with progressive weight loss of 4kg, and was unable to eat properly. The patient had a clinical diagnosis of severe ischemic heart disease (triple-vessel disease without the possibility of invasive treatment), NYHA class III heart failure because of left ventricular systolic function, diabetes mellitus, chronic renal failure, and peripheral vascular disease. She was taking digoxin 0.125 mg/day, furosemide 80 mg/day, spironolactone 25 mg/day, losartan 100 mg/day, glibenclamide 4 mg/day, isosorbide dinitrate 120 mg/day, metoprolol 100 mg/day, acetylsalicylic acid 100 mg/day, and simvastatin 40 mg/day.

Laboratory examination demonstrated mild anemia (Ht=33%, Hb=10.8 g/dL), renal function impairment (creatinine=1.5 mg/dL, urea=68 mg/dL), normal electrolytes, and fasting glycemia=123 mg/dL. Electrocardiogram at rest demonstrated sinus rhythm, HR=64 bpm, left ventricular overload pattern with ST segment depression in leads V5 and V6. A chest X-ray demonstrated cardiomegaly without signs of pulmonary venocapillary congestion.

Epigastric pain assessment was performed with digestive endoscopy, which was normal, and with the assessment of the gastroenterologist, severe mesenteric angina was diagnosed. Angio resonance of the abdominal aorta and its branches was performed and demonstrated stenosis of 80% in the origin of the celiac trunk, 50% proximal stenosis in the superior mesenteric artery, inferior mesenteric artery occlusion, and stenosis of 70% in the right renal artery. Abdominal aortography was indicated, as well as visceral arteriography, with intervention in the same procedure, in case the angiography scan findings were confirmed.

The patient was taken to the hemodynamic laboratory in good clinical conditions, with neither angina nor heart failure. Puncture of the femoral artery and abdominal aortography were performed in anteroposterior projection and left lateral projection with a pigtail catheter, confirming the findings of the angiographic scan: 70% stenosis in the origin of the celiac trunk, 50% stenosis in the superior mesenteric artery, and occlusion of the inferior mesenteric artery (fig. 1 and 2). Renal arteries did not have significant stenosis. Endovenous 5.000 U heparin was administered, and catheterization of the celiac trunk was selectively performed using a Veripath Lima 7F-guiding catheter (Guidant, Indianapolis, Indiana, USA). The stenosis was surpassed with a 0.014 ACS Hi-Torque Extra Sport guidewire (Guidant, Indianapolis, Indiana, USA). Once in place, a Herculink 6.0 X 18-mm biliary stent (Guidant/Advanced Cardiovascular Systems, Indianapolis, Indiana, USA) was released and pushed against the artery wall by using 18 atm (fig. 3). Normal flow was observed at the end of the procedure, with residual stenosis lower than 10% (fig. 4 and 5). The patient left the laboratory in good condition, and in the first postoperative period, she could eat normally, without abdominal pain. In clinical follow-up, one year after the procedure, the patient remains asymptomatic, without recurrent symptoms and has returned to her normal weight.

Discussion

Chronic mesenteric ischemia caused by severe atherosclerosis of visceral arteries is a rare clinical situation, and it is usually followed by postprandial abdominal pain, weight loss, and atherosclerotic involvement in other vascular territory. Therapeutic options are limited, and revascularization surgery has high mor-
Stent Implantation in Critical Stenosis of the Celiac Trunk: Enlarging the Frontiers of Percutaneous Vascular Intervention

Stent implantation decreases these complications because it provides a metallic support that prevents the elastic recoil of the vessel. Because of the low prevalence of this disease, clinical experience with stent implantation in visceral artery stenosis is limited, restricted to case reports and retrospective studies with small number of patients. In these studies, stent implantation was more often associated with lower complication and restenosis rates than was isolated balloon angioplasty and lower morbidity when compared with that in traditional surgical treatment. The risks of this procedure are small, but they include distal embolism with ischemia worsening, reperfusion syndrome, cholesterol embolism for inferior limbs through manipulation of the aortic plaques, and aortic dissection in cases of ostial stenosis.

Our patient had severe atherosclerotic involvement of the vis-
Stent Implantation in Critical Stenosis of the Celiac Trunk: Enlarging the Frontiers of Percutaneous Vascular Intervention

In conclusion, stent implantation in visceral arteries for the treatment of mesenteric angina due to significant atherosclerotic involvement of these vessels is an efficient procedure and should become the treatment of choice for these patients, who usually have several comorbidities and high surgical risk.

References