Endovascular treatment for multiple aortic narrowings in a patient with Takayasu arteritis

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Traitement endovasculaire des rétrécissements aortiques multiples chez un patient atteint d’artérite de Takayasu

A 17-year-old girl with a 1-month history of Takayasu arteritis had been referred for treatment of multiple stenotic lesions of the descending and abdominal aorta (figure 1A) and associated arterial hypertension (170/100 mmHg). She had been receiving oral prednisone and enalapril. Both erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) levels had been normal. Conventional angiography revealed a patchy narrowing of the descending and abdominal aorta (figure 1B). The celiac trunk was markedly stenotic at its origin, while the renal arteries were relatively spared (figure 2A). We decided to relieve the aortic stenosis by placing four overlapping bare stents (NuMed Inc., Hopkinton, NY, USA) measuring 45, 45, 39, and 34 mm in length over a 12 mm high-pressure balloon catheter (figure 1C). This gave the appearance of a “reinforced aorta” (figure 1D, supplementary Video 1). The aortic lumen significantly increased, and the peak systolic pressure gradient was reduced from 98 to 35 mmHg. The celiac trunk was dilated using a 4 mm high-pressure balloon catheter (figure 2B and C). The blood pressure decreased to 120/80 mmHg after the intervention. She was discharged on oral prednisone and aspirin.

She has been asymptomatic but poorly compliant with her therapeutic regimen during a 3-year follow-up. ESR and CRP levels have been slightly elevated over that period. Her latest angiogram revealed a beginning renal artery stenosis (figure 2D). Takayasu arteritis is a rare granulomatous vasculitis of unknown etiology, primarily affecting the aorta and its major branches [1]. It usually follows a chronic, progressive course leading to narrowing and obliteration of the arterial blood vessels, which is associated with significant morbidity and mortality [1]. Arterial hypertension in Takayasu arteritis is most frequently caused by renal artery stenosis, and only rarely by involvement of the suprarenal aorta [2]. Treatment options include immunosuppressive therapy and revascularization procedures such as percutaneous transluminal angioplasty and bypass graft surgery [1-3]. Revascularization procedures should be performed during quiescent phase of the disease and followed by immunosuppressive therapy [1,4]. This report shows that multiple narrowings affecting a long aortic segment in a Takayasu patient might be successfully treated by endovascular deployment of overlapping bare stents. While
endovascular treatment plays an important role in the management of patients with Takayasu arteritis, it is essential to keep the disease process under control with immunosuppressive therapy.

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References