Abstract

BACKGROUND: Endovascular approach to the aortic arch is an appealing solution for selected patients. OBJECTIVE: To compare the technical and clinical success recorded in the different anatomical settings of endografting for aortic arch disease. METHODS: Between June 1999 and October 2006, among 178 patients treated at our institution for thoracic aorta disease with a stent-graft, the aortic arch was involved in 64 cases. According to the classification proposed by Ishimaru, aortic zone 0 was involved in 14 cases, zone 1 in 12 cases and zone 2 in 38 cases. A hybrid surgical procedure of supra-aortic debranching and revascularization was performed in 37 cases. RESULTS: Zone 0. Proximal neck length: 44±6 mm. Initial clinical success was 78.6%: two deaths (stroke), one type Ia endoleak. At a mean follow-up of 16.4±11 months the midterm clinical success was 85.7%. Zone 1. Proximal neck length: 28±5 mm. Initial clinical success was 66.7%: 0 deaths, four type Ia endoleaks. At a mean follow-up of 16.9±17.2 months the midterm clinical success was 75.0%. Zone 2. Proximal neck length: 30±5 mm. Initial clinical success was 84.2%: two deaths (one cardiac arrest, one multiorgan embolization), three type Ia endoleaks, one case of open conversion. Two cases of delayed transitory paraparesis/paraplegia were observed. At a mean follow-up of 28.0±17.2 months the midterm clinical success was 89.5%. CONCLUSIONS: This study and a literature review demonstrated that hybrid procedure for aortic arch pathology is feasible in selected patients at high risk for conventional surgery. Our experience is still limited by the relatively small sample size. We propose to reserve zone 1 for patients unfit for sternotomy or in cases with aortic neck length > 30 mm following left common carotid artery debranching. We recommend to perform complete aortic rerouting of the aortic arch in cases with lesser comorbidities and shorter aortic neck.

Keywords

Aortic arch, endovascular treatment, stent-graft, hybrid procedure.