Iron man: extreme endovascular treatment for chronic cerebrospinal venous insufficiency

Luciano Barbato\textsuperscript{a,b,c,}*, Filippo Scalise\textsuperscript{b,c}, Maria Antonietta Grasso\textsuperscript{a,b,c} and Salvatore Spagnolo\textsuperscript{a,b,c}

\textsuperscript{a} Department of Cardiac and Vascular Surgery, Policlinico di Monza, Monza, Italy
\textsuperscript{b} Cardiac and Vascular Catheterization Laboratory, Policlinico di Monza, Monza, Italy
\textsuperscript{c} CCSVI Research Center, Policlinico di Monza, Monza, Italy

* Corresponding author. Department of Cardiac and Vascular Surgery, Policlinico di Monza, Via Amati 111, 20900 Monza, Italy. Tel: +39-039-2810372; e-mail: barbatoluciano@gmail.com (L. Barbato).

Received 27 March 2014; received in revised form 17 June 2014; accepted 19 June 2014

Keywords: Multiple sclerosis • Chronic cerebrospinal venous insufficiency • Thrombosis • Stent

Figure 1: The echo-colour doppler and CT show the complications of an extreme endovascular treatment. (A) Occlusion of the right jugular vein, patency of the trunk of the brachiocephalic and subclavian vein and thrombosis of the left jugular vein and the brachiocephalic trunk with residual stenosis of 70%. (B) The extreme treatment and endovascular stenting (CT view). (C) Occlusion of the right jugular vein and stenosis of the left jugular vein with minimal residual lumen formation (CT view). (D) Stenosis of the left jugular vein with a thrombotic sleeve in the brachiocephalic trunk (CT view). CT: computer tomography.
A 48-year old man has been affected by multiple sclerosis since 1991. In 2010, he received a diagnosis of chronic cerebrospinal venous insufficiency. The patient has undergone four procedures of bilateral internal jugular vein angioplasty and stenting for restenosis. This resulted in a thrombosis of the stents (Fig. 1). The complex anatomy ruled out a surgical treatment. The patient was discharged on anticoagulation therapy.