Journal of Neuroradiology (2013) 40, 360—363

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TECHNICAL NOTE

Mechanical thrombectomy ''as a rescue treatment'' of thromboembolic complications during endovascular treatment of intracranial aneurysms

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KEYWORDS
Intracranial aneurysms;
Thromboembolic events;
Stent retriever

Summary Acute thromboembolic periprocedural events during endovascular intracranial aneurysm treatment are mostly treated with intravenous or intra-arterial pharmacological thrombolysis. The present report describes a case of mechanical thrombectomy as a rescue treatment that may be an acceptable alternative to the current strategies. The feasibility and safety of stent retrievers in such a clinical indication are also discussed.

Introduction

For years, thromboembolic complications have remained a threat during the endovascular treatment of intracranial aneurysms, although the incidence of such events has been significantly decreasing along with improved comprehension and the development of more customized pre-, peri- and postoperative anticoagulation and antiplatelet protocols. Acute intraprocedural thromboembolic events are frequently treated with intra-arterial or intravenous thrombolytic agents [1].

Recently, several published reports have described the use of infusions of glycoprotein IIb/IIIa (Gp IIb/IIIa) inhibitors injected transvenously or in situ intra-arterially to recanalize occluded cerebral arteries during endovascular treatment [2—6]. However, newly published data and the present authors' own experience with acute treatments of stroke patients have demonstrated the efficacy and safety of mechanical thrombectomy alone or combined with intravenous (IV) thrombolysis [6—8]. Based on such experience and point of view, our present report describes a case of mechanical thrombectomy performed intraprocedurally for occlusion of the middle cerebral artery (MCA).

Case report

A 70-year-old woman was admitted to our institution for elective treatment of multiple aneurysms, one in the M1 segment of the right MCA and another in the right pericallosal—callosomarginal artery. Two months previously, she had suffered a massive subarachnoid hemorrhage (SAH) and hematoma from a ruptured right MCA aneurysm. At that time, the MCA aneurysm was surgically clipped. Her clinical status on admission was a modified Rankin scale (mRS) score

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0150-9861/$ - see front matter
http://dx.doi.org/10.1016/j.neurad.2013.08.002

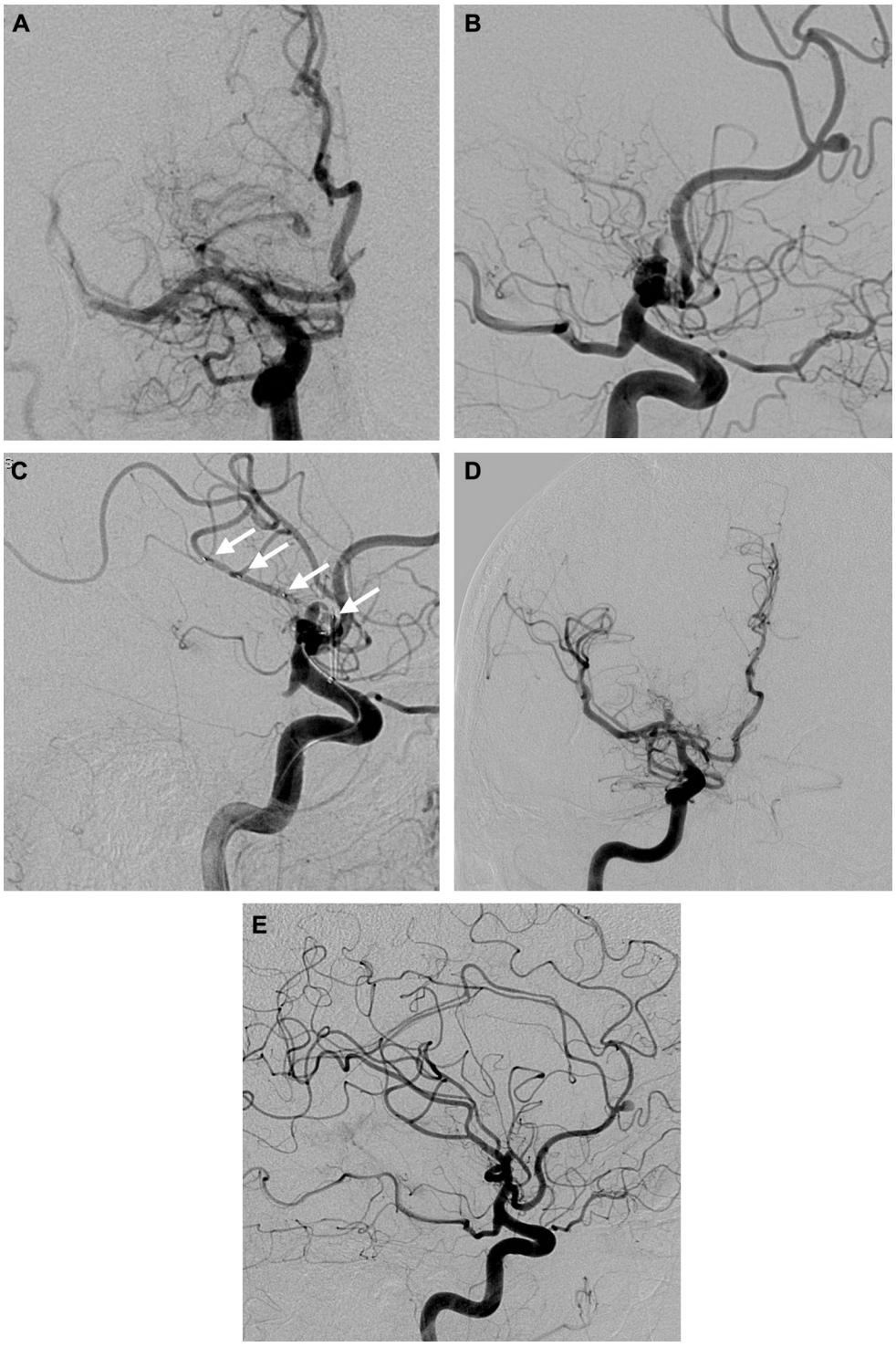

Figure 1 Periprocedural thromboembolic events: (A, B) embolic occlusion is evident in the right middle cerebral artery on both anteroposterior (AP) and lateral views; (C) in this lateral view of mechanical thrombectomy using a Separator 3D device, note the central position of the four markers; (D, E) angiographic appearances immediately post-mechanical thrombectomy (AP and lateral views).

of 1. The patient was premedicated according to the American Society of Anesthesiologists (ASA) classification system, and clopidogrel and systemic heparin were introduced during the treatment.

A 6F Neuron MAX Long Sheath (Penumbra, Alameda, CA, USA) was placed in the right internal carotid artery (ICA). After initial digital subtraction angiography (DSA), done according to the chosen working position, and