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Internal Carotid Vasospasm during Mechanical Thrombectomy

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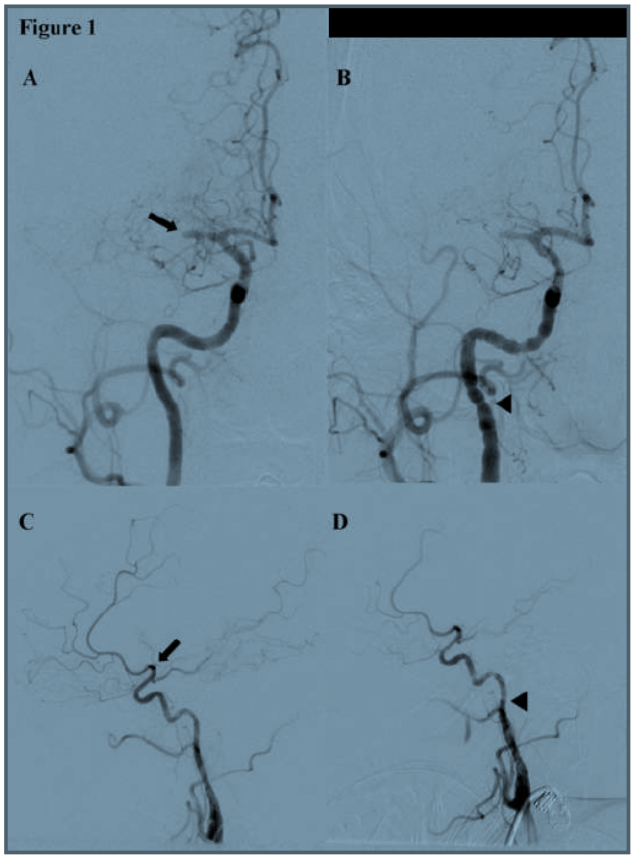
Image Description

A 23-year-old woman 6 weeks post-partum with a history of systemic lupus erythematosus on immunosuppressant medications was admitted with a dense left hemiparesis, homonymous hemianopsia, hemineglect and sensory loss, and a right gaze preference in the setting of an acute proximal right middle cerebral artery (MCA) occlusion. She presented outside of the time window for systemic intravenous thrombolysis, and was taken for endovascular rescue therapy with a clot retrieval device. Figures 1A and B show the initial normal caliber of her right internal carotid artery and an abrupt MCA cut off (arrow) on anterior-posterior and lateral views, respectively. After one pass with the Solitaire™ device, she developed angiographically significant vasospasm as demonstrated by Figure 1C and 1D (arrow head). The procedure achieved improvement of flow in the MCA after local administration of intra-arterial tissue plasminogen activator (not shown), but was complicated by mild hemorrhagic transformation, which was clinically asymptomatic. Unfortunately, no significant clinical improvement was noted.



Image

Arterial spasm of the target vessel is a well-known phenomenon related to manipulation of the vessel wall during both introduction and withdrawal of instruments [3]. The incidence of vasospasm during intra-arterial procedures is estimated between 13-32% [1-4] and is typically a self-limited complication without clinical consequences, rarely requiring specific treatment such as local vasoactive drug administration [1-3]. To date, there is no data to support a significant association between the number of mechanical thrombectomy passes and the development of vasospasm1. Some institutions use vasodilators, including glyceroltrinitrate, during device withdrawal in an attempt to prevent vasospasm1, although this has not yet been specifically investigated.

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