Endovascular Thrombectomy for the Treatmnet of an Occluded EC-IC Bypass After 25 Years of Patency: A Case Report

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Introduction

The use of high flow interposition grafts for the treatment of flow-related intracranial circulation disease, as well as for intracranial pathology not amenable to surgical management, has been described in neurosurgical literature for over four decades.1 Sundt et. al. described their experience with use saphenous vein grafts (SVG) in extracranial to intracranial high-flow bypass for the treatment of posterior circulation disease in 1982.2, 3 Herein, we present the first reported case of a patient that presented after occlusion of her SVG 25 years after initial bypass surgery for the treatment of a giant basilar artery aneurysm, and the successful endovascular thrombectomy of SVG thrombus.

Methods

46 year old woman with a prior saphenous vein graft external carotid artery to posterior communicating (EC-PCOMM) artery bypass for the treatment of a basilar trunk giant aneurysm in 1989, by Dr. Sundt, presented with acute onset facial paresthesias and intermittent internuclear ophthalmoplegia, found to have partial occlusion of her EC-PCOMM bypass on subsequent angiography, with significant collateral circulation noted at that time.

Conclusions

Extracranial to intracranial bypass grafting has been a part of the neurosurgical management of intracranial vascular pathology for over four decades. We report a unique case of late SVG occlusion after 25 years of patency, and the first reported endovascular thrombectomy of a bypass graft.

Results

Her neurological status stabilized over the next 24 hours without intervention, until a decline in her neurological status prompted repeat angiography, demonstrating complete occlusion of her bypass graft, at which time successful endovascular thrombectomy was performed with improved neurological status. Routine follow up computed tomography angiography (CTA) imaging revealed re-occlusion of the bypass graft, and interval development of collateral circulation with no new clinical neurological deficit.

Learning Objectives

1)Describe the current and past treatment options for the treatment of flow related cerebrovascular disease

2)Present the first reported case of EC-IC bypass graft thrombectomy

3)Discuss the late-term follow up and outcomes of EC-IC bypass

References

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