

Hemostatic Clips for Middle Cerebral Artery Vascular Reconstruction: Report of Two Cases

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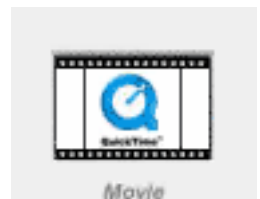


Introduction

The vascular closure staples (VCS)-clips has been studied in animal models and shown to have comparable results with sutured repair when it comes to the healing process, degree of vessel narrowing and risk of thrombosis. However, they are clearly superior when the speed of application is taken into account and they were clinically used in many vascular repair processes. Nevertheless, their usefulness in intracranial vascular surgery has not been described.

Methods

Two female patients diagnosed with giant symptomatic cavernous sinus aneurysms were undergoing elective endovascular procedures that were complicated by the dislodgement of coils into the M1 segment of MCA. Both patients were treated performing M1 arteriotomies and coil embolectomy. To avoid prolonged temporary occlusion in the M1 perforator's territory, the arteriotomies were repaired using microhemoclips in less than 10 minutes with reestablishment of flow.

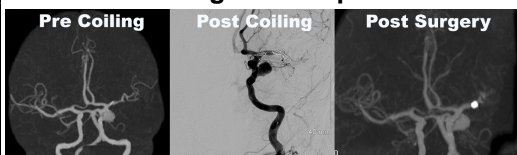


Video showing the removal of the coils from the M1 segment before repairing the external wall of the artery using Hemoclips

Results

In both patients, flow was reestablished in the M1 segments. In one patient, the coils extended to the temporal M2 causing intimal injury and leading to diminished flow. M1 segments in both patients were patent on later angiographic studies.

Angiogram showing a patent left M1 segment before Coiling, closed after dislodgment of coils into it, and then patent again after surgically removing coils and reconstructing the M1 wall using Hemoclips



Conclusions

We describe the advantage of emergent cerebrovascular arteriotomy and embolectomy in a rapid repair process that helped avoid massive ischemic injury. We believe this technique should be added to the armamentarium of neurosurgical cerebrovascular options.

Learning Objectives

To describe the usefulness of hemoclips in fast and efficient repair of medium sized and large intracranial vessels.