Experience with a New Generation of Nitinol Stents for Endovascular Treatment of Unruptured Aneurysms at a Single Center

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Introduction

Several advances in endovascular technology have allowed for the treatment of aneurysms which were previously felt to be untreatable by endovascular therapy. New generation nitinol stents which are able to be deployed through a 0.017 inch microcatheter have allowed stent coiling to be performed in cases which previously may have required microsurgery. We present our clinical experience with a new generation of nitinol stents at our center.

Methods

We retrospectively reviewed the charts of 26 patients who underwent placement of a LVIS Jr stent and 12 patients who underwent placement of a FRED stent for elective treatment of unruptured aneurysms. Aneurysm dimensions, complication rates of stroke, bleeding and systemic complications were recorded.

Results

The majority of aneurysms treated with the LVIS Jr device were basilar tip(56.5%), AComm(26.1%) and MCA bifurcation(21.7%). The FRED cohort consisted of 30% supraclinoid aneurysms, 30% cavernous ICA aneurysms and 20% PComm aneurysms. One patient in the LVIS Jr group suffered an ischemic event(3.8%). No systemic complications were noted. No intracranial hemorrhages were observed.

Conclusions

Novel advances in endovascular technology have allowed for the treatment of aneurysms which were previously felt to be untreatable by endovascular intervention. The addition of a nitinol stent which can be deployed through a 0.017 inch microcatheter as well as a new flow diverting nitinol stent have increased the tools in the armamentarium of the neurointerventionalist. The use of these stents appears to be safe with low complication rates.

Learning Objectives

By the conclusion of the session, participants should be able to 1) Review the characteristics of the new generation of stents which may allow for treatment of previously untreatable aneurysms 2) Discuss the complication rates

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