

Introduction

Excision of intra-aneurysmal coils during clipping of recurrent or residual aneurysm after prior endovascular coiling is challenging. The goal of this study is to evaluate the use of carbon dioxide (CO2) Omni laser (Lexington, MA) for safe and effective removal of coils during clipping of recurrent aneurysms.

Methods

This is a case series of three patients, who underwent laser-assisted excision of coil mass during clipping of recurrent aneurysms after multiple endovascular coiling. Intra-operative angiogram was performed in all three patients, showing complete obliteration of aneurysm without compromising the parent vessel.

Results

The first patient is a 56-year-old male with a previously coiled ruptured Anterior communicating artery (ACoA) aneurysm. Follow-up angiogram at 3 years showed Raymond III recurrence, which was not amenable for coiling. Craniotomy and aneurysmal clipping was performed after resection of coil mass with Co2 laser assistance. Intra-operative cerebral angiogram showed complete obliteration of the aneurysm. Second patient is a 69-year-old female with a previously coiled un-ruptured Middle cerebral artery (MCA) aneurysm. Follow-up angiogram at 2 years showed Raymond III recurrence of aneurysm. A laser assisted coil mass resection was performed before the aneurysmal reconstruction. Intra-operative angiogram showed complete obliteration of the aneurysm. Third patient is a 66-year-old female with an un-ruptured MCA bifurcation aneurysm that was previously coiled twice at an outside institution. Six month follow-up angiogram revealed substantial regrowth of the aneurysm. Laser assisted coilectomy and aneurysmorrhaphy was performed. Intraoperative angiogram revealed complete obliteration of the aneurysm.

Conclusions

Coilectomy and aneurysmorrhaphy is sometimes required while treating recurrent intracranial aneurysms, which were previously treated by endovascular techniques. The use of the CO2 Omni laser assistance while retrieving the coils is a safe and effective technique.

Learning Objectives

Laser assisted aneurysmorrhaphy is a safe and effective technique for removing coils and reconstructing the aneurysm

References

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