

Original Article

Emergency surgical salvage for severe intracranial aneurysm rupture during endovascular coiling procedures not amenable to additional coiling

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Received: 27 May 11

Accepted: 1 June 11

Published: 30 June 11

This article may be cited as:
 Nussbaum ES, Defillo A, Janjua TM, Zelensky A, Tatman P, Stoller R, Lowary J, Nussbaum LA. Emergency surgical salvage for severe intracranial aneurysm rupture during endovascular coiling procedures not amenable to additional coiling. *Surgical Neurology International*. 2011;2(2):101-105. doi:10.4103/2152-7806.82329

Abstract

Background: We report the management and outcomes of six patients who underwent emergency surgical intervention in the setting of severe intraprocedural rupture during endovascular treatment of an intracranial aneurysm not amenable to additional coiling.

Methods: From July 1997 through December 2010, our neurovascular service treated 1613 patients with coil embolization. During this time, we encountered 10 cases of severe contrast extravasation during the coiling procedure, in whom additional attempted coiling failed to stop the ongoing extravasation. Hospital records, neuroimaging studies, operative reports, and follow-up clinic notes were complete and reviewed in all cases. The follow-up review in surviving patients ranged from 1.5 to 9 years (average 3.8 years), and no patient was lost to the follow-up review.

Results: In all cases, persistent extravasation necessitated urgent surgical decompression and securing of the ruptured aneurysm. Of these six cases, three patients achieved a good functional status after prolonged rehabilitation, and one of these had only subtle cognitive changes on formal neuropsychological testing. Two patients died.

Conclusion: Intraprocedural rupture during aneurysm coiling is a dangerous and potentially fatal event. Despite the seemingly hopeless nature of this situation, in our experience, aggressive management to control intracranial pressure combined with a rapid reversal of anticoagulation and early surgical intervention can result in reasonable outcomes in some patients.

Key Words: Aneurysm, brain, coiling, microsurgery, rupture

Access this article online

Website:
www.surgicalneurologyint.com

DOI:
10.4103/2152-7806.82329

Quick Response Code:

