

Endovascular Treatment of Intracranial Aneurysms

Joachim Berkefeld^{1,*}

¹Leading Physician, Head of Interventional Neuroradiology, Institut für Neuroradiologie, Klinikum der Goethe-Universität, Schleusenweg, Frankfurt, Germany

* Corresponding author: Joachim Berkefeld, Leading Physician, Head of Interventional Neuroradiology, Institut für Neuroradiologie, Klinikum der Goethe-Universität, Schleusenweg, Frankfurt, Germany. E-mail: joachimberkefeld@me.com

Received 2016 December 21; Accepted 2017 February 08.

Abstract

Interventional treatment of ruptured intracranial aneurysms in patients with subarachnoid hemorrhage is a standard therapy based on evidence from randomized trials. Simple coiling is still used for most of the cases. Modern coil technology provides a wide variety of complex shaped coils for faster procedures and reliable dense packing. The assistance of stents and balloons widens the indication towards wide-neck-aneurysms. A major drawback of coiling and reason for recent debates about clipping vs. coiling is the lack of long term stability due to recanalization. Especially size above 10 mm and aneurysm location with direct inflow-jet at a bifurcation may favour reperfusion and the necessity for repeated controls for a long time. However, most of the adequately coiled aneurysms remain stable and rebleeding is confined to very few single cases. Flow-divertes placed in the parent vessel across the aneurysms neck or as nitinol basket within the aneurysm sac provide new treatment options for large, wide neck and fusiform aneurysms. Successful treatment demands careful patient selection and adequate sizing of the devices to induce reliable thrombosis within the aneurysms and “healing” of the vessel wall defect by coverage of the neck by endothelium and connective tissue. Prophylactic treatment of unruptured aneurysms should be associated with low complication rates, good angiographic results and long term stability. Interdisciplinary decision making and counseling, treatment and follow-up of patients in a neurovascular center are new challenges for interventional neuroradiologists.

This is an abstract presented in the 33rd Iranian congress of radiology (ICR) and the 15th congress of Iranian radiographic science association (IRSA).