In an extensive clinical series, Sluzewski and colleagues evaluated the risks associated with balloon-assisted coil embolization (BACE) of intracranial aneurysms. Specifically, these experienced authors analyzed the results in 71 cases in which BACE was performed and compared the data with those from a group of 756 aneurysms in which coil embolization (CE) alone was used. Hence, during the interval between 1995 and 2005, the authors treated 827 intracranial aneurysms by using endovascular techniques. They observed that BACE was more frequently utilized in larger aneurysms with broad necks, unruptured lesions, and lesions in the posterior circulation. Predictably, balloon-assisted techniques had a higher procedural complication rate of 14.1% compared with the 3% rate in the conventional CE interventions.

Follow-up evaluations of these 71 aneurysms were somewhat limited: only 52 lesions had 6-month angiography follow-up data. At that time, 71% of the lesions were completely occluded and 29% still had residual filling. Of the 15 incompletely obliterated aneurysms, 10 were subjected to additional intervention, including two surgical clip applications. Long-term follow up of these incompletely treated aneurysms was limited, but the authors report that at a meeting 28 months posttreatment none in this group demonstrated repeated hemorrhage.

Overall, these authors are to be congratulated for an excellent result in the majority of the endovascularly treated aneurysms. The broad-necked and larger lesions, which were treated with balloon remodeling techniques, likely would have been more difficult to treat with surgical clip application. Nonetheless, it is important to emphasize that technology in itself should not dictate or drive the treatment method. Just because an aneurysm could be treated with the balloon remodeling technique does not necessarily mean that it should be treated in that way. It is important to remember that with direct visualization, an experienced neurovascular surgeon can apply a clip across a broad aneurysm neck, obliterate the lesion with near 100% confidence, and preserve the parent vessel and perforating arteries. Adjunctive intraoperative tools, including intraoperative angiography and Doppler assessment of blood flow, enhance the confidence and security of clip placement in complicated aneurysms, and long-term durability after direct clip application has been documented to be excellent. At our institution, each aneurysm is evaluated by a team that includes interventionalists as well as the more traditional neurovascular surgeons. A joint decision is made about the best treatment for a particular patient, and the aneurysm anatomy and configuration and a patient’s medical and neurological comorbidities are considered. If a broad-necked aneurysm is encountered and it appears that the direct application of a surgical clip would involve a similar risk but a superior rate of occlusion, then a decision is made to perform such a procedure. Teamwork without a solo perspective between experienced interventionalists and open craniotomy surgeons will most often lead to the best treatment plan for a particular patient.

Reference