Residual aneurysm neck

see Modified Raymond-Roy Classification

see also Aneurysm recurrence.

Radiologically, a residual aneurysm neck is defined as a small segment at the base of the aneurysm proximal to a clip which still fills with contrast material on postoperative angiography.

Residual aneurysm from incomplete aneurysm clipping or slowly recurrent aneurysm is associated with high risk of subarachnoid hemorrhage.

Case series

Ihm et al. described complete treatment of the lesions by surgical clipping or endovascular treatment.

They analyzed 11 patients of residual or recurrent aneurysms who had undergone surgical clipping from 1998 to 2009. Among them, 5 cases were initially clipped at the author hospital. The others were referred from other hospitals after clipping. The radiologic and medical records were retrospectively analyzed.

All patients presented with subarachnoid hemorrhage at first time, and the most frequent location of the ruptured residual or recurrent aneurysm was in the anterior communicating artery to posterior-superior direction. Distal anterior cerebral artery, posterior communicating artery, and middle cerebral artery was followed. Repositioning of clipping in eleven cases, and one endovascular treatment were performed. No residual aneurysm was found in postoperative angiography, and no complication was noted in related to the operations.

These results indicate the importance of postoperative or follow up angiography and that reoperation of residual or slowly recurrent aneurysm should be tried if such lesions being found. Precise evaluation and appropriate planning including endovascular treatment should be performed for complete obliteration of the residual or recurrent aneurysm [1)].

Patients treated in whom a large portion of the aneurysm neck or aneurysm sac remained after application of a clip or ligature have been subjected to reoperation. However, 1- to 2-mm residual necks seen in postoperative angiography have been thought to pose little risk. Some cases of aneurysms recurring from a narrow residual neck after clipping have been reported, and a few instances of recurrent aneurysm have been described after apparently complete occlusion of the neck (as observed angiographically or in the surgeon's judgment). In recent years, a surprising number of cases have been presented in which this seemingly unimportant remnant of the neck dilated over a long period to become a dangerous aneurysm. This finding stresses the importance of complete aneurysm occlusion and of postoperative angiography for the recognition of a residual aneurysm

neck. This should be important not only in aneurysm clipping but also in the endovascular treatment of intracranial aneurysms with detachable balloons [2].

1)
Ihm EH, Hong CK, Shim YS, Jung JY, Joo JY, Park SW. Characteristics and management of residual or slowly recurred intracranial aneurysms. J Korean Neurosurg Soc. 2010 Oct;48(4):330-4. doi: 10.3340/jkns.2010.48.4.330. Epub 2010 Oct 30. PMID: 21113360; PMCID: PMC2982911.
2)
Lin T, Fox AJ, Drake CG. Regrowth of aneurysm sacs from residual neck following aneurysm clipping. J Neurosurg. 1989 Apr;70(4):556-60. doi: 10.3171/jns.1989.70.4.0556. PMID: 2926496.