

Preoperative Prediction Of The Necessity For Anterior Clinoidectomy During Microsurgical Clipping Of Posterior Communicating Artery Aneurysms

Tomoya Kamide¹

¹Neurosurgery/ Saitama Medical University International Medical Center/ Japan

Purpose

Although most posterior communicating artery (PCoA) aneurysms can be clipped easily with excellent results, some require anterior clinoidectomy for safe and complete clipping. To review our microsurgical series of ruptured PCoA aneurysms and identify the preoperative predictors for anterior clinoidectomy during microsurgical clipping for PCoA aneurysms

Material and Methods

Results from microsurgical clipping of 104 patients with ruptured PCoA aneurysms were retrospectively reviewed. Distances and angles were obtained from computed tomographic angiography and compared between the anterior and non-anterior clinoidectomy groups.

Results

Anterior clinoidectomy was required in 19 of the 104 cases (18%). None developed surgical complications due to anterior clinoid process (ACP) resection, including postoperative visual deficit. Univariate and multivariate analyses revealed that the distances from the ACP tip to the aneurysmal proximal neck and from the ACP line to the aneurysmal proximal neck were statistically significant predictive factors for the need of anterior clinoidectomy. Based on a receiver operating characteristic (ROC) analysis, the distances from the ACP tip to the aneurysmal proximal neck < 4.0 mm and from the ACP line to the aneurysmal proximal neck < 2.0 mm were selected as optimal cut-off values for predicting the necessity of anterior clinoidectomy, and the area under the ROC curve values were 0.991 and 0.955, respectively.

Conclusion

In case of ruptured PCoA aneurysm surgery, the distances from the ACP tip to the aneurysmal proximal neck and from the ACP line to the aneurysmal proximal neck were both found to be useful predictors of whether anterior clinoidectomy was required.