Far-Lateral Approach without Drilling the Occipital Condyle for VA-PICA Aneurysms

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Introduction

The far-lateral transcondylar surgical approach is often used to clip vertebral artery (VA) and posterior inferior cerebellar artery (PICA) aneurysms. The role of condyle resection during this approach has been controversial.

Methods

A retrospective review was conducted of 64 consecutive patients with incidental or ruptured VA-PICA aneurysms, who underwent surgery with a far-lateral approach. Clinical presentation, surgical reports, pre- and postsurgery radiological exams, and clinical follow-up reports were assessed. Anatomical location was analyzed through angiography or computed tomography (CT) angiography. Surgical time and foramen magnum resection with or without drilling of the occipital condyle were recorded in all cases using postsurgical CT images and surgical records. Postsurgical Glasgow Outcome Scale (GOS) and modified Rankin Scale scores and morbidity were analyzed.

Results

Between May 2005 and December 2012, 64 patients underwent surgery using a modified far-lateral approach. A total of 56 (87.5%) patients were treated without resecting their condyles, whereas partial resection (removal of up to 25% of the condyle) was necessary in 6 patients (9.4%) and removal of 25%-50% of the condyle was documented in 2 (3.1%) of the surgeries. The predominant patient presentation was subarachnoid hemorrhage (n=35, 54.7%). Most of the patients' aneurysms (n=31, 48.4%) were located in the lateral medullary segment of the PICA, followed by the anterior medullary segment (n=19, 29.7%). Total aneurysm occlusion was achieved in 100% of patients, and bypass techniques were necessary in 9.4% (6) of the patients. Fifty-nine patients (92.2%) had GOS scores of 4 or 5 postsurgery. The mean surgical time was almost 19% longer for the condyle resection group (352 minutes) compared with the intact condyle group (297 minutes).

Conclusions

The modified far-lateral approach without resecting the occipital condyle is adequate for treating most patients with VA-PICA aneurysms. Surgical time and morbidity decreased in the non-resection cases compared with the patients undergoing condyle resection. However, this maneuver should be tailored to each individual case, and may not be feasible in all patients.

Learning Objectives

The authors assessed the feasibility and surgical results of a modified far-lateral approach that does not include drilling the occipital condyle for clipping VA-PICA aneurysms at a high-volume cerebrovascular center.