

Computed tomography angiography in detection and characterization of ruptured anterior cerebral artery aneurysms at uncommon location for emergent surgical clipping

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摘要

Abstract

INTRODUCTION: Cerebral subarachnoid hemorrhage may result from rupture of saccular aneurysms at uncommon location [excluding the anterior communicating artery (ACOM)] of the anterior cerebral artery (ACA). The purpose of this study was to evaluate the usefulness of helical computed tomography angiography (CTA) in detection and characterization of intracranial aneurysms at such uncommon locations before emergent surgical clipping. **MATERIALS AND METHODS:** Between 1998 and 2003, records for 50 consecutive patients who underwent emergent surgical clipping for intracranial aneurysms were reviewed. Eighteen of these patients had aneurysms in the ACA. After those patients with unequivocal ACOM aneurysms were excluded, eight patients with eight aneurysms in an uncommon location of the ACA were recruited to this study. Plain computed tomography (CT) and CTA were performed in eight patients, and digital subtraction angiographies were done in three patients. Each aneurysm was evaluated for the detection, quantification, and characterization of the aneurysms with 2D multiplanar reformatted and 3D volume-rendering techniques. **RESULTS:** There were two small aneurysms arising from the A1 segment, one from the A2 segment, two at the junction of triplicated ACAs, two at the junction of A2 and A3 segments, and one at the junction of A2 and A3 segments of the azygos ACA. The average diameter of the aneurysmal sac was 4.44 mm (range, 2.7-7.0 mm), and the aneurysmal neck averaged 2.59 mm (range, 1.2-3.5 mm) in size. The smallest aneurysm measured 2.2x1.8x2.7 mm (neck, 1.2 mm) in the A1 segment of the left ACA. Three patients had intracerebral hematoma, seven had

intraventricular hemorrhage, and three had acute hydrocephalus. CONCLUSION:
Aneurysms in uncommon locations of ACAs exhibited characteristic features. Rupture of these aneurysms can cause intracerebral hematoma, intraventricular hemorrhage, and/or acute hydrocephalus. Noninvasive CTA can reliably detect and characterize intracranial aneurysms at such uncommon location for planning of emergent surgical intervention.