

## **Anatomical Predictors Of Superior Cerebellar Artery Aneurysm Rupture: Radiological Study Of 81 Consecutive Patients**

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### **Purpose:**

To identify morphological characters that could predict the rupture risk of superior cerebellar artery aneurysms.

### **Material and Methods:**

A retrospective analysis of CT angiography images of 81 consecutive patients harbouring superior cerebellar artery aneurysm who were treated between 1980-2014 at XXX. Different anatomical characteristics including size, shape, neck width, aspect ratio, bottleneck factor, dominance side of vertebral artery, mid basilar artery angle and aneurysm to basilar artery angle were quantified. Rupture status was retrospectively documented from prospectively collected data base.

### **Results:**

Of the 81 analyzed superior cerebellar artery aneurysms 30 (37 %) were unruptured and the remaining 51 (63 %) presented with SAH. The mean size of unruptured SCA aneurysms was  $6.2 \pm 6.3$  where as the mean size of ruptured SCA aneurysms were  $5.9 \pm 5.4$ . The mean aspect ratio was  $0.9 \pm 0.3$  in unruptured and  $1.14 \pm 0.44$  in ruptured cases. The bottleneck factor in unruptured SCA aneurysms was  $1.21 \pm 0.60$  and  $1.48 \pm 0.81$  in ruptured. The mean angle between basilar artery and aneurysm was  $74.7 \pm 24.4$  in unruptured and  $65.9 \pm 23$  ruptured cases. Interestingly, the patients with ruptured SCA aneurysm showed a significantly higher aspect ratio (Man-Whitney U,  $p=0.01$ ) and smaller angle between aneurysm and basilar artery (Man-Whitney U,  $p=0.039$ ).

### **Conclusion:**

The higher aspect ratio and lower angle between SCA aneurysm and basilar artery might be the predictive factors the SCA aneurismal rupture.