



<https://www.revistaneurocirugia.com>

C0446 - SEGMENTS OF THE INTERNAL CAROTID ARTERY: COMPARISON AND SIMULATION OF ITS DIFFERENT CLASSIFICATIONS IN A 3D-PDF MODEL

M. Valera Mele¹, A. Prats-Galino², M. Mavar Haramija², A. Puigdellívol-Sánchez², J. Juanes Méndez³, M. de Notaris⁴ and L. San Román²

¹Hospital General Universitario Gregorio Marañón, Madrid, Spain. ²Hospital Clínic de Barcelona, Barcelona, Spain. ³Universidad de Salamanca, Salamanca, Spain. ⁴Hospital Rummo, Benevento, Italia.

Resumen

Objectives: The purpose of the present study is the three-dimensional (3D) analysis of the internal carotid artery (ICA). This study is focused on the segments (mainly intracranially) of the internal carotid artery (ICA) and its classifications: Fischer's, Gibo's, Bouthillier's and Kassam's.

Methods: It is based on neuroimaging exams (CT-angiography and 3D high-resolution angiography – isometric voxel's size 0,5 mm-) of a patient with an aneurysm of the anterior communicating artery, without pathology of the ICA. These images are processed, analysed and visualised in a 3D software platform, which allows the visualisation in a three-dimensional portable document format (3D-PDF) of the main segments from the ICA (cervical segment, petrous segment, cavernous segment and supraclinoid segment), as well as the skull base and other neuroanatomical references, such as Gasser's ganglion, the petrolingual ligament and the proximal and distal dural rings.

Results: By using this interactive visualisation from the 3D-PDF, a comparison of the most relevant classifications (Fischer's, Gibo's, Bouthillier's and Kassam's) of the artery according to different authors has been developed.

Conclusions: This interactive 3D-PDF prototype could ease the comprehension of the neuroanatomical relations of the artery as well as the comprehension of vascular pathology in the fields of neurosurgery, neurology and neuroradiology.