

Visualization of an Aneurysm of the Right MCA Trifurcation with *syngo* InSpace 3D

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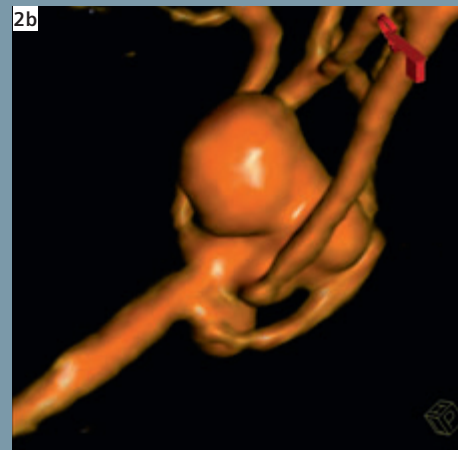
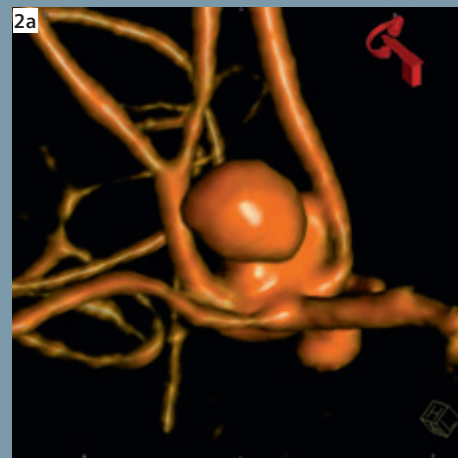
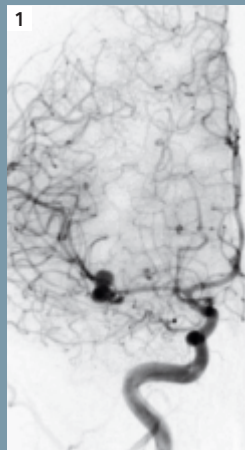
Patient history

27-year-old woman with subarachnoid haemorrhage and a 2 cm intraparenchymal haematoma located in the right insular region. At admission the patient was alert, with a left hemiparesis (Hunt Hess grade 3).

Diagnosis

Diagnostic IADSA, performed the day after admission to the hospital, showed a complex shape "large" aneurysm of the right MCA trifurcation, which was associated with another small aneurysm located at the origin of the anterior temporal artery [Fig. 1]. A mild vasospasm was also evident on right M1. 3D rotational angiography with a *syngo* InSpace 3D reconstruction was necessary in order to better display the complex anatomy of the right MCA, the relationship of the M2 branches with the aneurysmal sac, the aneurysm size (10 mm x 6.3 mm x 4.6 mm) and to evaluate the possibilities of a combined treatment of the two aneurysms [Fig. 2a - d].

- 1 IADSA shows two associated aneurysms located on the right middle cerebral and on the anterior temporal arteries.
- 2 The aneurysmal architecture and size were clarified by *syngo* InSpace 3D [a - d].



Treatment

After discussing with the neurosurgeons the surgical risks compared to the endovascular risks, the final decision was in favour of the endovascular coiling. The patient was set under general anaesthesia and the microcatheter was gently advanced into the large aneurysm of the right MCA trifurcation. On the basis of the 3D measurements it was decided to progressively fill the aneurysm starting with the upper lobe, whose size was approximately 6.3 mm. Three coils (6x15, 6x15, 5x15) were initially delivered, then the microcatheter was slightly withdrawn into the caudal portion of the aneurysm, which was filled with 3 more coils (5x15, 5x15, 4x6) [Fig. 3].

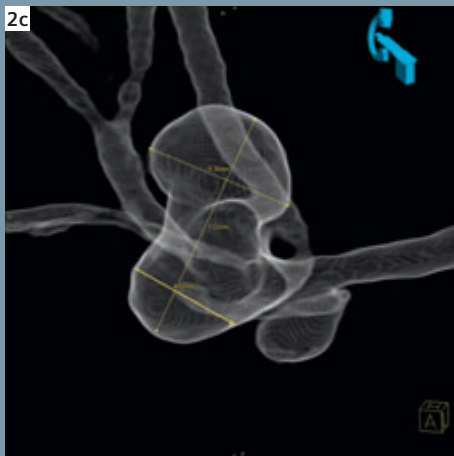
In the second aneurysm, the length, the largest width, and the neck size were 3.2 mm, 2.4 mm and 2.1 mm, respectively. Another microcatheter was placed into the aneurysm dome which was filled with two coils (3x6, 2x2), trying to avoid the occlusion of the anterior temporal artery. The final control showed a complete occlusion of both aneurysms with a slow retrograde filling of the superior division of the right MCA, which was probably due to the mass effect of the aneurysm filled with coils [Fig. 4]. The patient completely recovered the neurological deficits after one month of rehabilitation therapy.

Comments

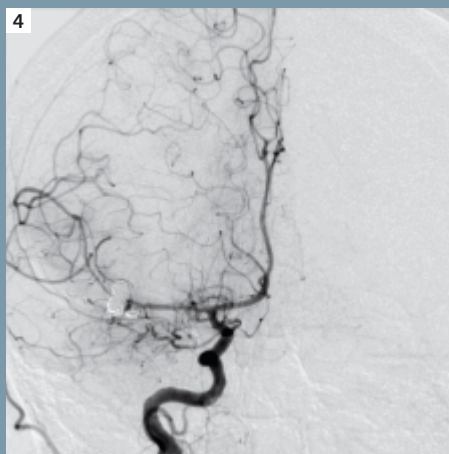
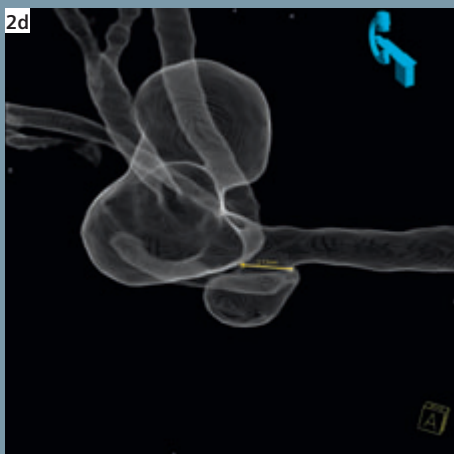
In this case we found the results of the syngo InSpace 3D measurement very accurate, since we were able to progressively fill the aneurysm with the right choice of the size and length of GDC coils, according to our understanding of the aneurysm shape and size.

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3 LAO 31°/CRAN 31°, six coils were inserted in the large MCA bifurcation aneurysm under angiographic control.



4 The control angiogram at the end of the procedure showed complete occlusion of both aneurysms. The superior division of the right MCA is retrogradely filled by leptomeningeal collaterals.