Case Report: Intraventricular Meningioma

Vicente Belloch, M.D.

Clínica ERESA, Sección RM, ERESA-Hospital La Fe, Valencia, Spain

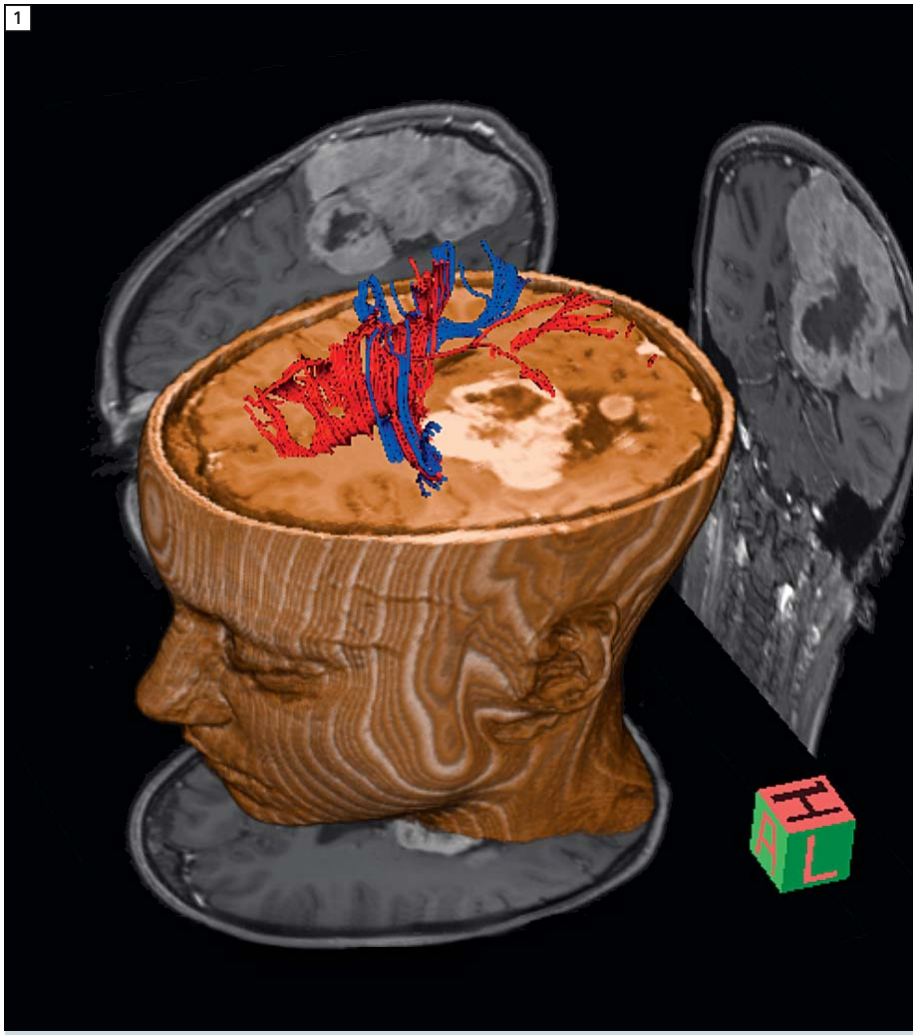
Patient history

A 19-year-old female patient without previous history of epilepsy presented with a tonic-clonic seizure.
At another institution with CT and MRI, an intense enhancing mass displacing the left hemisphere anteriorly has been diagnosed. The dimensions of the lesion make it difficult to assess if the lesion is intra or extra-axial. Differential diagnosis between oligodendroglioma and intraventricular meningioma has been suggested and the patient has been sent to our institution for surgical treatment of the lesion.

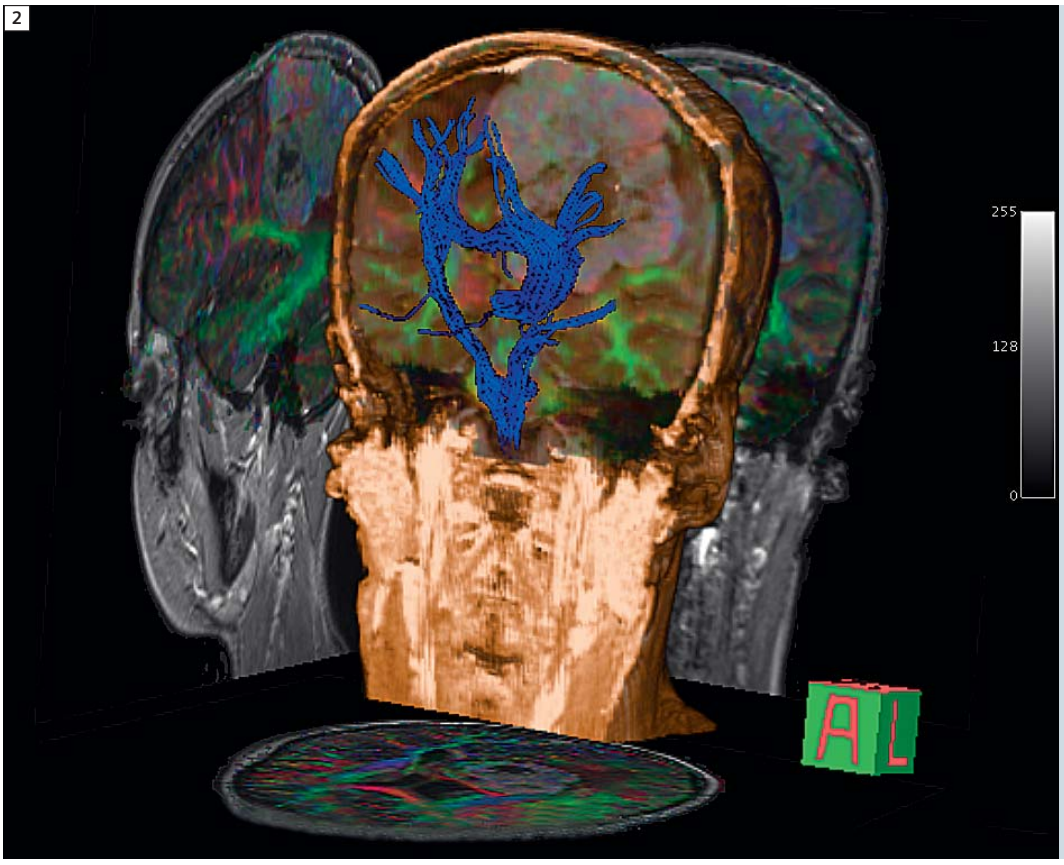
Sequence details

Images were acquired at 3Tesla (MAGNETOM Trio, A Tim System) using the standard Head Matrix coil and software version *syngo* MR B15.

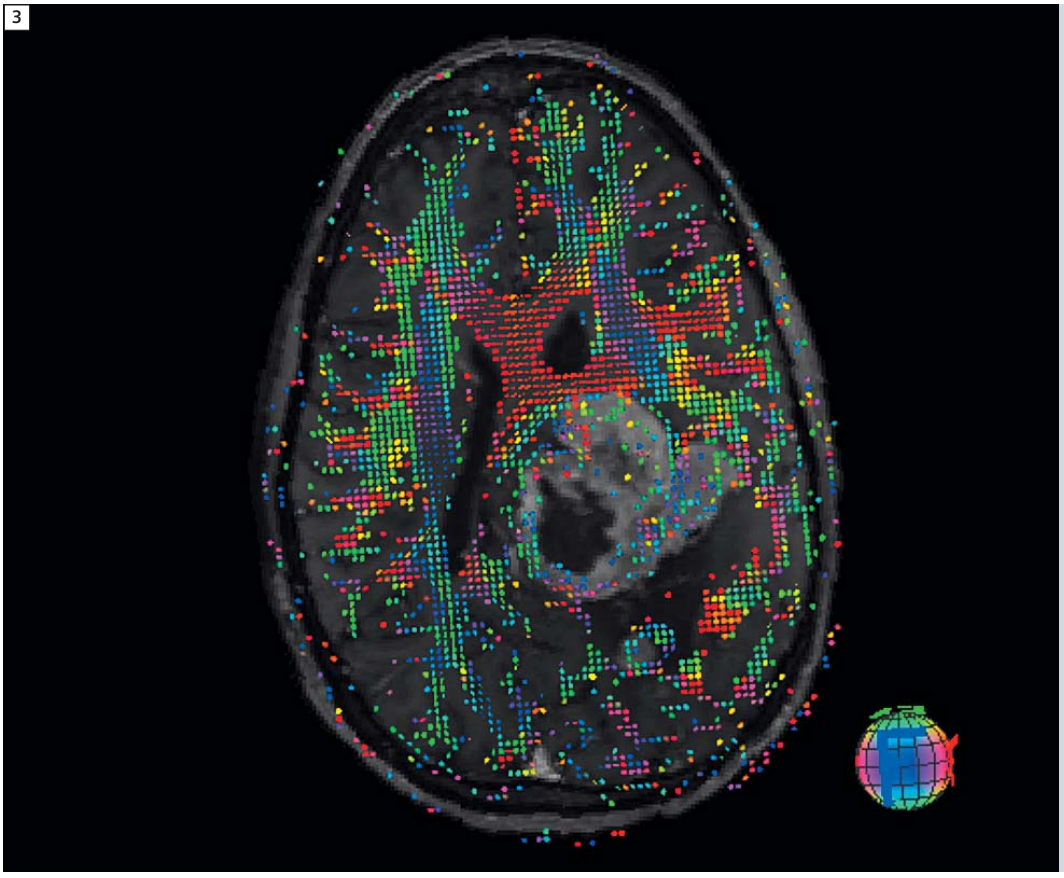
- Single shot Echo Planar Imaging (EPI) Diffusion Tensor Imaging (*syngo* DTI). TR 10.100 ms, TE 102 ms, FOV 250 mm, 2 averages, matrix 128 x 128, 70 contiguous axial slices, voxel = 2.0 x 2.0 x 2.0 mm, 30 non-colinear directions with b = 1000 s/mm^2 and one acquisition without diffusion encoding. Acquisition time: 11:05 min.
- T1-weighted 3D MPRAGE. TR 19 ms, TE 4,9 ms, FOV 250 x 250, matrix 256 x 256, 160 contiguos sagital slices, voxel = 1.0 x 1.0 x 1.0 mm. Post gadolinium injection Gd-DTPA. Acquisition time: 5:49 min.



1 Tractography of corpus callosum and internal capsule of both hemispheres (red corpus callosum, blue internal capsule): superior oblique view at the level of corona radiata, showing how the enhancing mass displaces anteriorly the left projections of corpus callosum and left internal capsule.

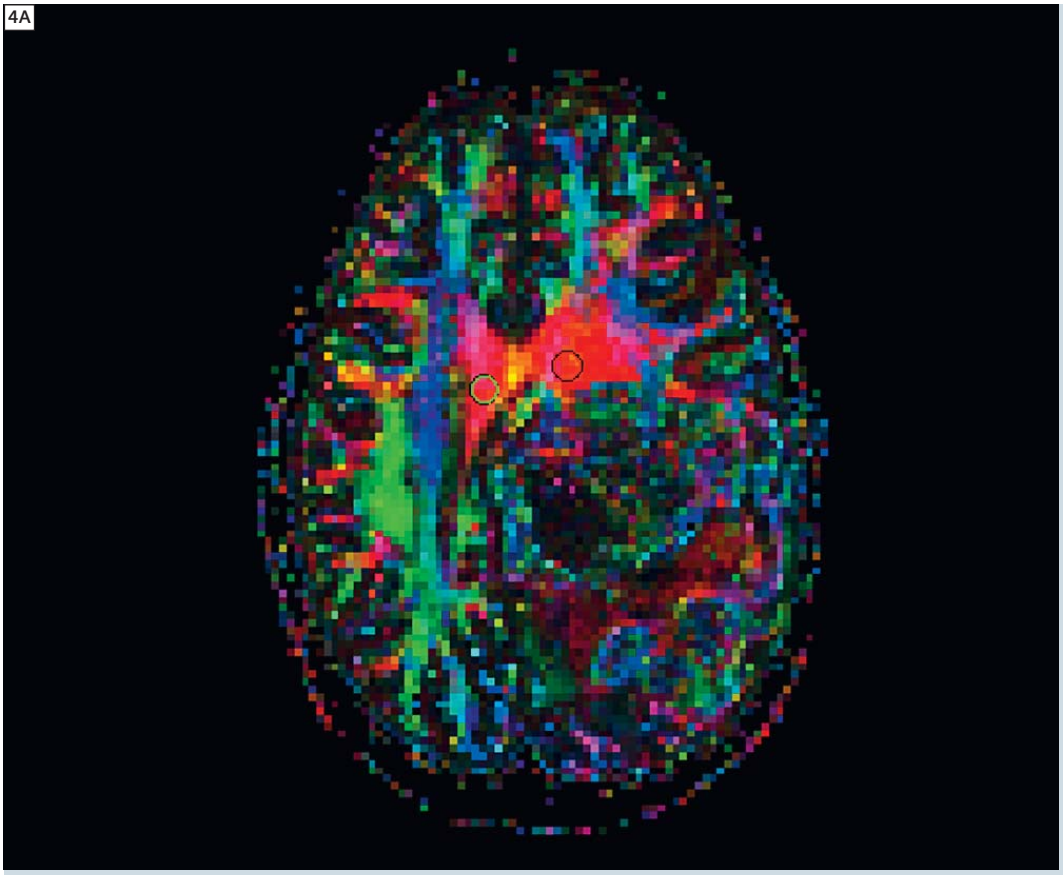


2 Tractography of internal capsule (blue): Front oblique view showing the anterior displacement and angulation of the tracts of the left internal capsule. A fused image, consisting of a contrast-enhanced T1-weighted and colored FA image is shown with the tractography.



3 Glyph texture ("smarties") of a colored FA DTI-T1-weighted anatomic slice at the corona radiate: Anterior displacement of body and splenium of corpus callosum, and left corona radiata is shown, but no asymmetry of orientation and number of Eigenvectors is seen between both hemis-pheres, indicating that the tumor displaces but not infiltrates the white matter, suggesting a benign histology.

4A



4B

ID	FA Media aritmética	FA DesEst	FA Tamaño / Mín / Máx	TraceW Media aritmética	TraceW DesEst	TraceW Tamaño / Mín / Máx	ADC Media aritmética	ADC DesEst	ADC Tamaño / Mín / Máx
1	859.9	83.8	12 / 761 / 990	119.4	8.6	12 / 96 / 126	729.2	175.7	12 / 446 / 1055
2	925.1	37.9	8 / 872 / 978	110.6	5.0	8 / 104 / 120	817.3	87.3	8 / 651 / 944

4 **(A, B)** Region-of-Interest (ROI) analysis of corpus callosum: no significant differences are seen between the values of FA and ADC between left and right hemicorpus, indicating that the tumor displaces but not infiltrates the white matter, suggesting a benign histology.

Conclusion

Surgery determined that the lesion was extra-axial, and pathology indicated that it was a meningothelial (typical) left atrium intraventricular meningioma. DTI study guided the neurosurgeon to preserve the internal capsule, corona radiata of left hemisphere and posterior part of the body and splenium of corpus callosum. The patient was discharged with no motor or other deficits.

Contact
Vicente Belloch, M.D.
Chief Radiologist and
Scientific Director, ERESA.
Professor at the
Universidad Jaime I de Castellón
ERESA-Hospital La-Fe
Valencia
Spain
vbelloch@eresa.com