metastasis is difficult to obtain. Multimodality MR imaging has become the preferred approach to characterize brain tumors. MR spectroscopy was so far applied to one case of intrameningioma metastasis, but the differential diagnosis with malignant transformation of meningioma could not be established [6].

In conclusion, atypical MRI features of meningiomas may suggest the possible occurrence of an intratumoral metastasis in patients affected by a systemic cancer, especially when significant changes are detectable on follow-up imaging.

Conflict of interest statement

None.

References


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Ictal hyperperfusion demonstrated by arterial spin-labeling MRI in status epilepticus

Hyperperfusion en IRM de perfusion par marquage des spins dans un cas d’épilepsie

Case report

39-year-old female patient who presented at first two days before with generalized seizures followed by partial seizures and cloni of the right leg on the day of admission. At first a CT scan was performed (Philips) that failed to reveal any underlying pathological finding. EEG showed a focus in the left frontal cortex. MR imaging was performed on a 3.0 T Magnetom Trio (Siemens; Erlangen, Germany). Arterial spin labeling (ASL) was performed with a PASL sequence, using a QUIPSII perfusion mode and the following parameters: 16 slices, voxel size: 3.4 × 3.4 × 6 mm, TA = 5:55 min, lambda = 0.9 mL/g, alpha = 95%, TE/TR/TI1/TI2/T(1(blood3T)) (ms) = 15/5000/700/1800/1496,19, Relative Cerebral Blood Flow (RelCBF) maps for ASL were calculated in-line by the MRI scanner, and off-line for CEPWI using the Syngo Perfusion (MR) software. Single-voxel MR spectroscopy was performed in both hemispheres, placing the voxel on the left in the frontal area affected on DWI. DWI with a 30 directions scan was acquired as well.

Diffusion imaging showed hyperintensity in the left frontal cortex (Fig. 1a) with decreased ADC values (Fig. 1b) and a decrease in fractional anisotropy (Fig. 1d). On MR spectroscopy there was slightly elevated lactate. This was compatible with status epilepticus; on ASL perfusion we had an important increase in perfusion on the CBF maps (Fig. 1g–h).

Magnetic resonance imaging plays a central role in the investigation of patients with epilepsy: not only in chronic but in acute symptomatic cases [1]. Perfusion techniques allow to investigate the epileptic brain and MR arterial spin-labeling perfusion uses no contrast [2,3]. ASL has been previously used to document patients with epileptic diseases [4–11] This case illustrates the capacity of MR perfusion with arterial spin-labeling to very sensibly demonstrate areas of hyperperfusion in epilepsy. This is nicely correlated in our case with clinical symptoms referable to the left parasagittal frontal cortex as well as to both electrophysiological findings and neuro-imaging with diffusion and spectroscopic findings. This again confirms ASL to be a more and more important part of the investigation of patient with epileptic syndromes.
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Figure 1  a: diffusion weighted image showing hyperintensity in the left frontal parasagittal cortex; b: ADC map showing slight decrease in the ADC in the corresponding cortical area; c: axial FLAIR image showing slight cortical edema in the same place; d: axial color-encoded fractional anisotropy maps showing decreased anisotropy as well; e–f: on MR spectroscopy there was an increase in lactate in the corresponding area (f) compared to the other side (e); g–h: arterial spin labeling maps show hyperperfusion in the left parasagittal frontal cortex.

Conflicts of interest

None.

References


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