

expression of the beta-synuclein in the mesencephalon and telencephalon in PACAP knock-out and wild type mice. Our hypothesis is that the level of beta-synuclein is increased in PACAP knock-out mice similarly to the results of the MALDI Imaging. We analyzed the samples from wild type and PACAP knock-out mouse brains with semi quantitative immunofluorescence and densitometry.

Results: We did not find significant differences in the level of the beta-synuclein in the hippocampus or substantia nigra of PACAP knock-out and wild type mice.

Conclusions: Based on our findings we conclude that the results of the MALDI Imaging need to be confirmed with other techniques. In the future, we plan to use another antibody created against another beta-synuclein epitope, because along the specificity of the antibody, its sensitivity is important as well for making trustful quantitative conclusions.

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M/2 INTEGRATION OF MULTIMODAL DIAGNOSTICS (MRI, FMRI, DTI, EEG) AND THE VISUALIZATION OF THE DATA TO AID PLANNING EPILEPSY SURRGERY

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Keywords: Epilepsy, 3D Modelling, Open Software, MRI, EEG

Aims: As part of the epilepsy surgery evaluation, more and more complex imaging and electrophysiological investigations are used for precise mapping of the seizure onset zone and to describe the seizure propagation mechanisms. For quickly processing the increasing amount of data, a complex platform is needed which can combine spatial information of preoperative structural and functional imaging with the electrophysiological information coming from the implanted electrodes.

Methods: We plan to design a unique software for integration of the information from preoperative and post-implant imaging data of patients undergoing intracranial electrode implantation in frame of their epilepsy surgical evaluation. We want to create a software, which makes possible the fusion of electrophysiological maps coming from the implanted electrodes (maps of. interictal spikes, seizure onset zone, high-frequency activity, cortical electrical stimulation, etc.) with the imaging data.

Results: The coregistration of the different structural and functional (fMRI, DTI) 3D imaging data is already possible using open source softwares. The coregistered images are automatically transformed to the patients own MRI space and to standard space as well where using the postimplantation CT images we can determine the exact position of the electrodes.

Conclusions: The presented method allows the precise and automated coregistration of different imaging modalities. The integration of the complex electrophysiological data and maps is not yet solved, however we will present our own solution.

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M/3 THE EFFECT OF CONTRAST AGENT ON THE CALCULATED CARDIAC MR PARAMETERS IN NON-COMPACTION CARDIOMYOPATHY

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Keywords: cardiac MR, non-compaction cardiomyopathy, contrast agents

Aims: The functional parameters of the heart are calculated by the short axis (SA) MR images. After performing these scans a gadolinium based contrast agent (CA) is infused to perform delayed enhancement imaging. Making nativ MR images after the CA administration is common but we found more difficult to make myocardial contours on the postcontrast (postCA) slices, leading to a less precise result. Non-compaction cardiomyopathy (NC-CMP) is a genetic disorder where the apex of the left ventricle is filled with trabecules (LV trab). We studied the effect of 2 different CAs on the calculated parameters using NC-CMP patients' nativ SA images.

Methods: We included 20 NC-CMP patients (mean age: 41.7 ± 16.3 years, male $n=14$, mean ejection fraction (EF) $55.6 \pm 3.7\%$). Examinations were performed with Philips Achieva 1.5T MR instrument. After doing the nativ functional SA images we infused Gadovist (Ga, $n=12$) or Multihance (Mu, $n=8$) CA into our patients, waited 8 minutes and repeat these scans. MedisQMass program and its MassK module was used for analysis, MedCalc software for statistics.

Results: We compared the functional parameters of the Ga and Mu postCA SA images but we did not find significant differences. We compared our patients' precontrast (preCA) SA images to the postCA ones. The indexed (i) volumens (V) increased, the left ventricle myocardial mass (LVmass), LVtrab mass and EF decreased significantly on the postCA slices (MassK preCA vs postCA: end diastolicVi 74 ± 13.6 vs 81 ± 16.3 ml/m²; end systolicVi 25.3 ± 7.3 vs 30 ± 11.2 ml/m²; LVmassi 82.5 ± 17.5 vs 75.7 ± 16 g/m²; LVtrab massi 25 ± 6.6 vs 19 ± 4.7 g/m²; EF Mu: 65.2 ± 4.4 vs $62.4 \pm 6\%$ $p < 0.05$).

Conclusions: The postCA MR images' decreased myocardium-blood contrast hides some parts of the myocardium leading to increased volumens, decreased myocardial mass and EF values among NC-CMP patients. These small but significant differences should make us more careful during the evaluation.

M/4 HOW DO INDIRECT SIGNS OF TRAUMATIC DIFFUSE AXONAL INJURY CORRELATE WITH THE ACTUAL AXONAL INTEGRITY?

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Keywords: DAI, MRI, SWI, DTI, FLAIR

Aims: Susceptibility weighted (SWI) MRI is presently the most sensitive method to detect microhemorrhage related to DAI. However, the development of microhemorrhage is not certain and its clinical relevance is yet unclear. To accomplish our objective diffusion tensor imaging (DTI) was applied, which is a reliable technique to quantify axonal condition, but presently is not a feasible clinical tool.

Methods: 20 healthy and 38 traumatic brain injured patients (GCS 15-3) underwent T1, T2, FLAIR, DTI and SWI MR imaging. For a precise assessment, coregistration (FSL FMRIB) of the different modalities, and classification of the patients into groups as "microhemorrhagic", "non-microhemorrhagic" lesioned and "MRI negative" was performed. Then, DTI parameters as fractional anisotropy (FA) and mean diffusivity (MD) of predilection regions of DAI (corpus callosum, corona radiata and the brainstem) were measured in each group. Comparison of the FA and MD values among groups by ANOVA and examination of the correlation between the number of lesions and the DTI parameters via Spearman correlation was performed.

Results: FA values of the corona radiata in "microhemorrhagic" and "non-microhemorrhagic" groups differed significantly from the values measured in MRI negative TBI and healthy patient groups ($p=0,003$) and a strong correlation was found between the diffusion parameters and the summed amount of "hemorrhagic" and "non-hemorrhagic" lesions ($p=0,0016$; $\rho=-0,49$). There was no