

<div><div>Introduction</div><div>Increasing evidence has suggested minor head injury (MHI) can have long term negative neuropsychological impact. We present our magnetic resonance imaging (MRI) protocol that yielded abnormal findings among patients with MHI.</div></div>	<div><div>Methods</div><div>MRI studies were performed with by two 1.5T GE scanners. The sequences included three dimensional T1, FLAIR, susceptibility sequence, spectroscopy, diffusion tensor imaging (DTI), and resting state functional MRI. We measured cortical thickness and fractional anisotropy (FA) values in different regions of brain using personalized anatomical atalas of these values.</div></div>	<div><div>Results</div><div>Thirty subjects were included in this study. Sixteen were male. The mean age was 38 with a range between 10 and 67. All studied were performed within one year of injury. Susceptibility sequence was positive in 11 (37%) patients. Cortical thinning was present in all patients in a following cortical distribution: orbitofrontal in 27(90%), dorsal medial frontal in 28(83%), occipital in 21(70%), hippocampus in 8 (27%), temporal in 7(23%), parietal in 6(20%). FA was decreased in cingulum in 17(57%), genu of the corpus callosum in 15(50%), uncinated fasciculus in 13(43%), splenium and inferior longitudinal fasciculus in 7(23%) each, superior longitudinal fasciculus in 4(13%). Increased fractional anisotropy was present in cingulum in 6(20%), superior longitudinal fasciculus in 5(17%), splenium in 4(13%), uncinated fasciculus and inferior longitudinal fasciculus in 2(7%) each. Magnetic resonance spectroscopy showed decreased NAA in frontal lobes in 22(73%) and in posterior cingulum in 8(28%). Abnormal connectivity assessed with resting state fMRI was found in anterior cingulum in 23(75%), posterior cingulum in 20(67%), hippocampus in 13(43%) , insula in 11(37%), caudate in 8(25%), thalamus and prefrontal cortex in 4(13%) each.</div></div>	<div><div>Conclusions</div><div>Significant portion of patients with MHI had abnormal MRI findings even within one year of the injury. These findings may help elucidate the impact of MHI to the brain.</div><div><div>Learning Objectives</div><div>By the conclusion of this session, participants should be able to: 1) describe an MRI protocol that can to used to elucidate the impact of MHI on the structures in the brain, 2) identify the areas of the brain mostly likely to exhibit abnormal findings after MHI.</div></div><div>[Default Poster]</div></div>
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