

## Multimodal imaging findings in Unverricht-Lundborg disease

Objective: To investigate the pathophysiology of Unverricht-Lundborg disease (ULD) ~~using~~

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magnetoencephalography (MEG) ~~and~~ positron emission tomography using

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18-fluoro-2-deoxyglucose (FDG-PET) in a ULD patient. Methods: MEG was recorded ~~using a~~

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204-channel whole-head MEG system, and ~~the~~ cortical ~~activity~~ preceding ~~any~~ myoclonus ~~episodes~~

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~~in our ULD patient~~, were averaged. Equivalent current dipoles (ECDs) were calculated for ~~each~~

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averaged spike. FDG-PET was performed in the interictal state. Results: The result of

~~Jerk-locked back-averaging (JLA)~~ demonstrated an electromagnetic cortical activity in the left

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centroparietal area, and the peak of ~~this~~ activity preceded the onset of myoclonic discharge on the

electromyogram by 16.0 ms. ECD calculated at the peak was located in the left postcentral area.

FDG-PET images showed regional hypometabolism in the left part of ~~the~~ pons. Conclusions:

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Functional abnormalities in the sensorimotor cortex and the brainstem coexist in ~~this~~ patient with

ULD. Both dysfunctions were considered to be related to the pathogenesis of ULD.