第 129 回バイオサイコシンポジウム

Age-associated changes of brain morphometry in the early visual cortex

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Mita Campus, Keio University

講演者: Li-Hung Chang

(Boston University)

What is the effect of aging on brain structure? While a growing body of evidence from brain morphometric studies suggests the age-associated reduction of global and regional brain areas (eg. Lemaitre et al., 2010), it is not completely understood how aging affects structure of the early visual areas. The aim of brain morphometric measurement is to visualize and quantify information from the brain structure. Obtained from magnetic resonance imaging (MRI), morphometric measurement helps researchers quantify anatomical features of the brain including size, thickness, shape, and volume. In my presentation, I will review and discuss some recent experiments that explore age-associated changes using brain morphometric measurement in humans and animals. Then I will report our findings on the morphological changes specific to the early visual cortex in normal aging. By combining retinotopic mapping and brain morphometric methods, we obtained detailed anatomical information within early visual areas (V1, V2 and V3). Our results suggest that the cortical size of early visual areas in older adults is significantly smaller than younger adults. Importantly, only the surface size of V3 was significantly correlated with the amount of improvement in the perceptual learning task in the older participants. These results clearly demonstrate an age-associated reduction in the early visual cortical surface space, and further suggest that surface size in the early visual cortex may play an important role in visual plasticity in the later life span.

使用言語:英語 (通訳なし)

会費無料、事前登録は不要

主催・企画: 慶應義塾大学グローバルCOEプログラム 「論理と感性の先端的教育研究拠点」 脳と進化班 渡辺茂

http://www.carls.keio.ac.jp/ E-Mail : keiocarls@info.keio.ac.jp