Asymmetry of parietal interhemispheric connections in humans.

Giacomo Koch*[1]

[1]Fondazione S Lucia IRCCS – Italy

Abstract

Visuospatial abilities are preferentially mediated by the right hemisphere. Although this asymmetry of function is thought to be due to an unbalanced interaction between cerebral hemispheres, the underlying neurophysiological substrate is still largely unknown. Here, using a method of trifocal transcranial magnetic stimulation, we show that the right, but not left, human posterior parietal cortex exerts a strong inhibitory activity over the contralateral homologous area by a short-latency connection. We also clarify, using diffusion-tensor magnetic resonance imaging, that such an interaction is mediated by direct transcallosal projections located in the posterior corpus callosum. We argue that this anatomo-functional network may represent a possible neurophysiological basis for the ongoing functional asymmetry between parietal cortices, and that its damage could contribute to the clinical manifestations of neglect.

*Speaker