Deviations in cortex sulcation associated with visual hallucinations in schizophrenia.

Cachia A[1,2,3,4], Amad A[5,6], Brunelin J[7], Krebs MO [1,2], Plaze M [1,2,] Thomas P [5,6,] Jardri R [5,6].

Author information

1 /INSERM UMR 894, Centre de Psychiatrie & Neurosciences, Paris, France.
2 / Université Paris Descartes, Sorbonne Paris Cité, Paris, France.
3 / CNRS UMR 8240, Laboratoire de Psychologie du développement et de l'Éducation de l'Enfant, Paris, France.
4 / Institut Universitaire de France, Paris, France.
5 / Université de Lille, SCA-lab, PSYchiC team, Lille, France.
6 / Centre Hospitalier Régional Universitaire de Lille (CHULille), Psychiatry and Pediatric Psychiatry Department, Lille, France.
7 / Université Claude Bernard Lyon 1 (UCBL), EA 4615, Centre Hospitalier Le Vinatier, Bron, France.

Abstract

Hallucinations, and auditory hallucinations (AH) in particular, constitute the most typical and disabling schizophrenia symptoms. Although visual hallucinations (VH) have been largely neglected in psychiatric disorders, a recent review reported a 27% mean prevalence of VH in schizophrenia patients. The pathophysiology underlying VH in schizophrenia remains elusive. Several schizophrenia studies reported a significant effect of age on VH; therefore, we tested the hypothesis that the neurodevelopmental model of schizophrenia may explain VH occurrence. We analyzed cortex sulcation, a marker of brain development, in healthy controls (HCs) and two subgroups of carefully selected schizophrenia patients suffering from hallucinations: patients with only AH (that is, patients who never reported VH) and patients with audio-visual hallucinations (A+VH). Different cortical sulcation and left-right sulcal asymmetry were found between A+VH and AH patients, with decreased sulcation in both A+VH and AH patients in comparison with the HCs. Although a specific association between VH and neurodegenerative mechanisms, for example, in Body-Lewy Dementia or Parkinson's Disease, has previously been reported in the literature, the current study provides the first neuroimaging evidence of an association between VH and neurodevelopmental mechanisms.

Mol Psychiatry. 2015 Sep;20(9):1101-7. doi: 10.1038/mp.2014.140. Epub 2014 Oct 28.

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