Left uncinate fasciculus

A growing body of evidence suggests that individuals with pronounced schizotypal traits also display particular neurophysiological and morphological features - notably with regard to left frontotemporal connectivity. However, the studies published to date have focused on subclinical subjects and psychiatric patients, rather than brain-damaged patients. Here, we used the French version of the Schizotypal Personality Questionnaire to assess schizotypal traits in a sample of 97 patients having undergone surgical resection of a diffuse low-grade glioma. Patients having received other neurooncological treatments (including chemotherapy and radiotherapy) were not included. A combination of ROI-based based voxel-wise and tract-wise lesion-symptom mapping and a disconnectome analysis were performed, in order to identify the putative neural network associated with schizotypy. The ROI-based lesion-symptom mapping revealed a significant relationship between the cognitive-perceptual (positive) dimension of schizotypy and the left inferior gyrus (including the pars opercularis and the pars orbitalis). Importantly, we found that disconnection of the left uncinate fasciculus (UF) was a powerful predictor of the positive dimension of schizotypy. Lastly, the disconnection analysis indicated that the positive dimension of schizotypy was significantly associated with the white matter fibres deep in the left orbital and inferior frontal gyri and the left superior temporal pole, which mainly correspond to the spatial topography of the left UF. Taken as a whole, our results suggest that dysconnectivity of the neural network supplied by the left UF is associated with heightened positive schizotypal traits. Our new findings may be of value in interpreting current research in the field of biological psychiatry [1)]

1)

Lemaitre AL, Lafargue G, Duffau H, Herbet G. Damage to the left uncinate fasciculus is associated with heightened schizotypal traits: A multimodal lesion-mapping study. Schizophr Res. 2018 Feb 27. pii: S0920-9964(18)30103-8. doi: 10.1016/j.schres.2018.02.027. [Epub ahead of print] PubMed PMID: 29499963.