

### Recurrent unilateral hallucinations in the absence of brain and ear pathology in a patient with schizoaffective psychosis and family history of schizophrenia

The perceived localisation of hallucinated words in space can provide interesting insights into the underlying pathophysiology of verbal auditory hallucinations (1,2) and may also be of clinical significance. In this context, 'unilateral' verbal auditory hallucinations heard only in one ear or from one direction have gained increased interest (1,2). Recently, unilateral voices were reported to occur in single subjects without schizophrenia (3). In almost all the cases, this phenomenon was of short temporal duration (4), associated with a contralateral brain lesion, ipsilateral hearing loss (3,5) or both (4).

An association with left temporoparietal electroencephalography (EEG) abnormalities has been reported (4). Nevertheless, most neurobiological models for voice hearing in schizophrenia, particularly the inner speech hypothesis, do not account for such lateralisation phenomena of hallucinated words (2). Empirical evidence on the temporal stability of unilateral voices in schizophrenia is very sparse (1,6). To the authors' knowledge, no longitudinal observations are available.

The authors report the case of a 49-year-old female who met DSM-IV criteria for schizoaffective disorder with recurrent episodes of unilateral auditory hallucinations and had a family history of schizophrenia. The brother of this patient suffers from paranoid schizophrenia with a number of severe episodes. The symptoms of this patient started at the age of 36 with a 1-week period of persecutory delusions, ideas of reference and auditory verbal hallucinations only in the right ear. Initially, the patient experienced a number of different male voices heard only in the

right ear that could not be attributed to a living person. All symptoms disappeared rapidly after admission to our hospital and treatment with haloperidol. Since then, the patient has experienced recurrent episodes of hearing a single male voice. Recurrence is associated with depressed mood. Without exceptions over a period of 14 years, the voice is heard only in the patient's right ear. No further episodes of delusions occurred. The voice is mainly insulting and is more prominent in the evening hours. Imperative, bilateral or left-lateralised voices did not occur at any point. Voice hearing usually remitted soon after treatment with haloperidol or atypical neuroleptics. Magnetic resonance imaging showed no structural brain abnormalities. Otolaryngological examination and audiometric measures were normal, but the EEG showed intermittent left temporoparietal signal decrease.

This case indicates that the lateralisation of auditory verbal hallucinations in psychosis with the absence of structural brain lesions and hearing loss can be a symptom with remarkable stability over time. The patient's family history of schizophrenia points to a potential genetic factor. Notably, recent research suggests that the lateralisation phenomena of voices might be attributable to dysfunction of the right medial temporal lobe, an area critically involved in the pathophysiology of schizophrenia. Lateralisation of auditory hallucinations may thus provide interesting insights into the pathophysiology of psychosis (7).

Future research should clarify the commonness of such constant lateralisation phenomena in schizophrenia and spectrum disorders. Such research may influence future models for voice hearing, because most current neurobiological concepts on pathophysiology of voice hearing in schizophrenia cannot sufficiently explain the phenomena of location of voices in space.

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