Epileptic attack, delirium, and periodic complexes in the EEG during mianserin treatment

Tricyclic and newer antidepressants have certain undesirable effects, including an increased susceptibility to delirium, myoclonic jerks, and epileptic convulsions.1 Two patients had an epileptic attack during mianserin treatment followed by delirium and EEG changes presenting as slow activity with periodic complexes similar to those seen in the Creutzfeld-Jakob disease.

A 61 year old male had suffered from paranoid schizophrenia since 1975. The patient was admitted to hospital due to increased psychotic symptoms in August 1987. On admission, medication previously used (promazine 200 mg and meprobamate 60 mg in the evening) were changed and chlorpromazine 100 mg, three times a day, was introduced. He developed acute left-sided hemiplegia five days after admission. CT of the head showed central atrophy and a new right parietal infarction. Five days after the stroke the temporarily discontinued neuroleptic and antidepressant medications were reintroduced due to nocturnal delirium and a continuation of psychotic symptoms during the daytime. Two weeks later he had numerous grand mal attacks associated with periodic slow complexes similar to that seen in Creutzfeld-Jakob disease (CJD) on EEG. Both symptoms subsided after the introduction of carbamazepine and discontinuation of mianserin. The patient recovered from the hemiplegia and delirium, and during a follow up period of 18 months, no progressive cognitive deterioration or new epileptic attacks were observed.

A 68 year old female with mild depressive symptoms treated with a low doxepine dose (35 mg/day) developed a major depressive episode during the summer of 1989 and was admitted to a psychiatric hospital. At admission she was extremely depressed (Hamilton depression rating scale score 31), but showed no cognitive deterioration in the Mini-Mental State Examination (MMSE score 24), and her EEG was normal. Doxepine treatment was discontinued and mianserin was introduced starting, reaching 90 mg on the evening, resulting in a therapeutic mianserin concentration of 35 nanomoles/litre (therapeutic level 200–450 nanomoles/litre).

Two weeks after admission she had an epileptic attack, after which she showed cog- nitive impairment (MMSE score 8), had myoclonic jerks, and met the DSM-III-R criteria for delirium during the next six days. Mianserin treatment was discontinued. Since her second EEG showed generalised slowing with periodic complexes similar to those seen in CJD, she was transferred to the Department of Neurology, where laboratory results including CSF and CT of the head were normal. After the delirious episode EEG was normal, cognitive functioning restored (MMSE 25), and the myoclonic jerks disappeared. During a follow up period of six months, continuing depressive symptoms (Hamilton score 27) were observed as well as an absence of epileptic attacks, cognitive deterioration, and myoclonus.

Creutzfeld-Jakob disease often runs a rapid course and is usually accompanied by a number of neurological symptoms and signs besides dementia. Initial depressive symptoms, epileptic fits and delirium also occurred.1

The pathogenesis of the EEG abnormalities seen in CJD is unknown,2 but the normalisation of EEG after delirium and the stable clinical picture in our patients during follow up is not consistent with CJD. EEG changes in delirium in the form of increased slow wave activity and disruption of the normal alpha rhythm has also been demonstrated.3 A noxious response to mianserin in our patients is suggested despite the therapeutic plasma level in the second case.

HANNU KOPONEN, SIMO A. JUHANEN
Department of Psychiatry,
JUHANI PARTANEN,
Clinical Neurophysiology,
PAIVI RIEKKINEN
Department of Neurology,
Kuopio University Central Hospital,
Kuopio, Finland

Correspondence to: Dr Hannu Koponen, Kölkätie 29 C 35, SF-50170 Mikkeli, Finland.


Neurobiology of Higher Cognitive Functions. Edited by AB SIEBEL and AF WIECHLER. (Pp 370; Price £65.00/$99.00.) Hove, Lawrence Erlbaum Assoc Ltd. 1990. ISBN 0-88862-425-8

This book is the proceedings of one of the meetings to be held regularly in the UCLA Forum in Medical Sciences. The subject of the meeting and title of the book reflect increasing interest in the morphological and physiological substrates of higher cognitive functions. The availability of modern imaging techniques, including MRI, SPECT and PET together with more precise quantitative morphological measurements, neuropsychological assessment, and molecular biology have considerably contributed to the understanding of the relationship between cerebral structures and higher cognitive function. The application of these new methods to the brain has yielded rich dividends in an area of biomedical research which hitherto escaped scientific scrutiny.

This book gives a good, if not comprehensive, account of recent developments in the investigations of higher cognitive functions. The 14 chapters and the concluding overview are of consistently high standard. Several papers explore the morphological correlates of higher cognitive functions, like Siebel’s investigations of the dendritic arborisation or Diamond’s excellent analysis of cortical changes brought about by learning and experience. Other chapters review physiological and molecular biology have contributed to the understanding of the relationship between cerebral structures and higher cognitive function. The application of these new methods to the brain has yielded rich dividends in an area of biomedical research which hitherto escaped scientific scrutiny.

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This multi-author text, with 68 contributors, covers the entire spectrum of clinical MRI. Like many other radiological texts it is really too large and heavy. Our copy is already showing signs of wear and we must be careful to preserve it. We have decided to publish the first 12 chapters as a separate volume.

The initial sections cover the physical basis and technical aspects of magnetic resonance imaging. These are based on the excellent monthly course organised by John Hesselink and Robert Matray at the M.R. Institute in San Diego. They are readable, extremely well illustrated and are written in clear, understandable prose. Included is a chapter on clinical spectroscopy, which might better have been called "Spectroscopy for the Uninitiated" and which left us with a better understanding of its potential future clinical role.

Images in the brain and spine sections are excellent. Some illustrations in the body section are rather disappointing and are not 

"state of the art". This is a problem with all books and does not mean they will not be the standard of reference at the date of publication. The editors have recognised this and include future development sections in many chapters. The musculo-skeletal chapters are superbly illustrated and written.

In some areas the clinical emphasis will seem strange to a British readership. For example, two pages are devoted to spinal cord tumours, 27 to examination of the testes and a single chapter to temporomandibular joint dysfunction.

As a neuro-MR reference work this adds little to the much smaller "MRI of the CNS" by M. Brant-Zawadski and D. Norman. The chapter on normal neuro-anatomy cannot compare with "Cranial and Spinal MRI" by Daniels, Haughton and Naidech. The compact "Clinical MRI" by V. M. Runge and K. J. Irish is a comprehensively authoritative general reference work on clinical MRI is excellent value at £118.

JVB Bartlett
AA Nicholson