

THE PSYCHIATRIC COMPLICATIONS OF EPILEPSY

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ABSTRACT

The psychiatric complications of epilepsy are varied but may be considered under two main groups - those directly related to ictal activity and those that occur during the inter-ictal period. Epilepsy and psychiatry are also similar in that they cause a great deal of social difficulties and restriction in terms of activities and employment opportunities because of the associated stigma and prejudice. The various complications are discussed and illustrated with case studies where appropriate.

Keywords : epilepsy, psychiatry

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Introduction

The relationship between epilepsy and psychiatry has a long history⁽¹⁾. It was described as far back as the fourth century BC by Hippocrates who believed that "melancholics ordinarily become epileptics and epileptics, melancholics - what determines the preference, is the direction the malady takes - if it bears upon the body, epilepsy; if upon the intelligence, melancholy."

The most serious aspect of epilepsy is unfortunately sometimes not the seizure per se but the associated psychiatric and psychological consequences⁽²⁾. These complications are today well-recognised and can be divided into two main categories :

- I. Peri-ictal disturbances ie behavioural disturbances associated with a seizure and these may be pre-ictal, ictal or post-ictal
- II. Interictal disturbances which include :
 - a) Schizophrenia-like psychosis
 - b) Mood disorders
 - c) Personality changes
 - d) Sexual dysfunction
 - e) Cognitive impairment
 - f) Aggressive behaviour

PERI-ICTAL DISTURBANCES

Pre-ictal Changes

Increasing tension, anxiety, irritability and depression are sometimes present for several days before a seizure, but they disappear following the attack⁽³⁾. They are primarily associated with complex partial seizures.

Ictal Phenomena

Automatisms, twilight states and fugues are ictal phenomena commonly associated with complex partial seizures⁽⁴⁾. Automatisms are characterised by sudden onset of clouding of

consciousness, simple or complex movements and actions such as opening a door or putting on a garment without being aware of it. Recovery too is rapid and there is total amnesia for the event.

Case 1

WNC is a 40-year-old hair-dresser with complex partial seizures. These seizures are preceded by an aura of chest discomfort and consist of loss of consciousness with abnormal behaviour. For instance during one such seizure, she abruptly left a client whose hair she was cutting and walked to the next building. On recovery from the seizure, she was surprised to find herself in the next building and had no memory of walking towards it. She hurried back to the client and apologised profusely.

In a fugue, there is restriction of consciousness with disorientation and wandering behaviour. Patients are known to wander long distances during an epileptic fugue before recovering and will have only patchy recall of their experience.

Twilight states are characterised by restriction of consciousness, disorientation and abnormal affective states, commonly panic and anger. Here too onset and recovery are sudden, with patchy recall of the experience.

Less commonly, prolonged non-convulsive seizures like petit mal status or complex partial status may mimic psychiatric conditions. For instance, prolonged depressive moods have been described during status epilepticus , "petit mal" status and partial seizure status.

Post-ictal Phenomena

There are two main types of post-ictal phenomena - post-ictal confusional states and post-ictal psychosis. The latter is a relatively new concept and is essentially a variant of post-ictal confusion. Post-ictal psychosis occurs after a flurry of seizures, usually grand mal, followed by confusion which clears. However, after a lucid interval of 12-24 hours, the patient becomes psychotic - usually either paranoid or extremely depressed. The electroencephalogram during this time shows generalised slowing (like in post-ictal confusion) and the condition is self-limiting, clearing in 3 - 14 days. Anti-psychotic medication is often needed, on a short-term basis, to reduce the agitation. It is now believed that patients who develop repeated episodes of post-ictal psychosis may go on to develop an inter-ictal psychosis, namely, a schizophrenia-like psychosis.

Case 2

MK is a 27-year-old Malay man with complex partial seizures which generalise secondarily since the age of 6 years. On the day before his admission to Woodbridge Hospital, he had three

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seizures after which he recovered. The next evening, he suddenly began shouting at the top of his voice and used abusive language at his parents. Mental state examination on admission revealed that he was disorientated in time, place and person. An electroencephalogram was done and it showed generalised slowing.

Three days later he recovered but had only partial memory of events that had occurred prior to his admission. A repeat electroencephalogram showed spike and wave activity arising from the left temporal region.

INTER-ICTAL DISTURBANCES

The Schizophrenia-like Psychosis

The relationship between epilepsy and schizophrenia has been extensively investigated and there are two main views.

The antagonist theory proposes that epilepsy exerts some protective effect against psychosis. It was on the basis of this belief that electroconvulsive therapy was introduced by von Meduna - to treat psychosis by producing a seizure. Landolt⁽⁵⁾ noted changes in the electroencephalogram (EEG) during pre-seizure dysphoric episodes and limited periods of overt psychosis lasting days or weeks. During these, he noted improvement in previously abnormal EEGs and referred to this phenomena as "forced normalisation". At the end of the psychotic episodes, the EEG again appeared abnormal.

The affinity or agonist theory is based on the studies by Slater and Beard⁽⁶⁾ and Gudmundsson⁽⁷⁾, in which the incidence of epileptics developing a schizophrenia-like illness was found to be higher than in the general population. In contrast to ordinary schizophrenia however, the affect tends to remain warm and appropriate and typical deterioration is not seen. The schizophrenia that occurs in epileptics is therefore often referred to as "schizophrenia-like psychosis" and usually occurs an average of 14 years after the onset of epilepsy.

The affinity and antagonist theories are not necessarily contradictory. One often sees an epileptic who develops a schizophrenia-like psychosis (compatible with the affinity theory). This psychosis has often been observed to improve following a convulsion, whereas suppression of epileptic activity by the use of anti-convulsant drugs may sometimes worsen an associated psychosis (compatible with the antagonist theory).

The general consensus today is that although most epileptics do not develop a psychosis, patients with epilepsy are more at risk of developing psychosis when compared with the general population.

Mood disorders

Mood disorders, predominantly anxiety and depression, occur frequently in people with epilepsy. A number of factors have been linked to the pathogenesis of depression including patients' fears, social stigmatisation and adverse life-events.

Barracough⁽⁸⁾ found that the risk of suicide was five times greater than that of the general population and self-poisoning with barbiturates was the most common mode of suicide.

Personality changes

Waxman and Geschwind⁽⁹⁾ were among the first to describe a distinct syndrome of interictal behaviour changes that are seen in some patients and temporal lobe epilepsy. They particularly emphasised hyposexuality, religiosity and a tendency towards extensive and compulsive writing and drawing. This hypergraphia tends to be meticulous and repetitive. Bear and Fedio⁽¹⁰⁾ investigated this further.

Much controversy about this syndrome relates less to its occurrence than to its frequency⁽¹¹⁾. While it is established that

personality changes do occur in epileptics, such changes are today believed to occur only in a minority of patients with epilepsy.

Sexual dysfunction

A number of studies have investigated the relationship between sexual behaviour and epilepsy. The major conclusions from these studies suggest that patients with temporal lobe epilepsy have a significantly higher incidence of hyposexuality than patients with generalised epilepsies. Psychological, social and endocrine factors are believed to contribute to this. Psychosocial factors cause low self-esteem, anxiety, depression and unemployment. Toone et al⁽¹²⁾, in a group of male epileptics, have reported them to show low levels of free testosterone in the presence of increased total testosterone levels, associated with higher sex-hormones binding globulin. Patients rated as having "low sex drive" had the lowest free testosterone levels.

Cognitive impairment

Cognitive impairment is not inevitable in epilepsy, although some patients, particularly those with intractable seizures who receive polytherapy, may show a substantial decline in their abilities to perform tasks, and a diagnosis of dementia would seem appropriate⁽¹⁾. This, however, is often a multifactorial process involving brain damage, recurrent seizures with consequent head injuries, and the prescription of multiple old fashioned drugs such as phenytoin and phenobarbitone. Folic acid deficiency may also be involved in this process. In the 1960s the condition was referred to as "dilantin dementia". It should also be noted that some patients with dementia develop seizures as part of their illness, Alzheimer's disease and multi-infarct dementia are examples.

Aggressive behaviour

Aggressive behaviour is one common cause of referral of epileptic patients to psychiatrists. Aggressive behaviour in epileptics is usually interictal and is either situational or interpersonal. Rarely however, they may be ictal and occur during an automatism or post-ictal confusional state. Several authors have tried to correlate aggressive behaviour with abnormal limbic system, especially amygdala, activity. Aggressive outbursts in epileptics may also be caused by high doses of phenobarbitone which is known to cause hyperactivity in children and irritability in adults.

REFERENCES

1. Trimble MR. Psychiatric aspects of epilepsy. *Psychiatr Dev* 1987;4:285-300.
2. Appleton R, Baker G, Chadwick D, Smith D. The psychiatric and psychological aspects of epilepsy. In: *Epilepsy*. United Kingdom: Martin Dunitz Ltd, 1991: 83-6.
3. Gelder M, Gath D, Mayou R. *Oxford Textbook of Psychiatry*. 2nd ed. Great Britain: Oxford University Press, 1989: 334-42.
4. Lishman WA. *Organic Psychiatry*. 2nd ed. Oxford: Blackwell, 1987.
5. Landolt H. Serial electroencephalographic investigations during psychotic episodes in epileptic patients and during schizophrenic attacks. In: Lorentz de Haas A.M. ed. *Ch. 3 of Lectures on Epilepsy*. Amsterdam: Elsevier 1958; 320, 323, 350, 358.
6. Slater E, Beard AW. The schizophrenia-like psychoses of epilepsy. *Br J Psychiatry* 1963;109:95-150.
7. Gudmundsson G. Epilepsy in Iceland. *Acta Neurologica Scand* 1966 (Suppl); 43:25:1-124.
8. Barracough B. Suicide and epilepsy. In: Reynolds EH, Trimble MR. eds. *Epilepsy and Psychiatry*. Edinburgh: Churchill Livingstone, 1982:72-85.
9. Waxman SG, Geschwind N. The interictal behaviour syndrome of temporal lobe epilepsy. *Arch Gen Psychiatry* 1975; 32:1580-6.
10. Bear DM, Fedio P. Quantitative analysis of inter-ictal behaviour traits in temporal lobe and generalised epilepsy. *Arch Neurol* 1977;34:454-67.
11. Trimble MR. Some behavioural consequences of epileptic seizures. In: Trimble MR. ed. *Chronic Epilepsy. Its Prognosis and Management*. Great Britain: John Wiley & Sons Ltd, 1989:133-41.
12. Toone BK, Wheeler M, Narjee M, Fenwick P, Grant R. Sex hormones, sexual activity and plasma anticonvulsant levels in male epileptics. *J Neurol Neurosurg Psychiatry* 1983;46:824-6.