The Psychiatric Aspects of Epilepsy

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ACCORDING to Brain (1962) epilepsy is defined as a paroxysmal and transitory disturbance of functions of the brain which develops suddenly, ceases spontaneously, and exhibits a conspicuous tendency to recurrence. Although in its typical form, there is the characteristic loss of consciousness with tonic and clonic muscular spasms, many varieties of epileptic attack occur, their distinctive features depending upon differences in the site of origin, extent of spread, and the nature of the disturbance and function. In this paper, the psychiatric aspects of epilepsy will be discussed as it is one region between the neurologist and the psychiatrist which is fraught with confusion and vagueness.

The Epileptic Syndrome

Epilepsy is a symptom, not a disease, and there are almost as many determinants of this symptom as there are diseases and deviants which can disturb brain functionings. It is characterized chiefly by periods of disturbance of consciousness, involuntary movements or bizzare sensory hallucinations.

Neurologically, the epileptic process consists of spontaneous and massive discharges of brain cells. Whatever its stimulus, location or route of spread, the patient experiences in rather intense form the same behaviour, thoughts and feelings that are normally activated by the cerebral tissues involved. The stream of consciousness may vary from complete interuption of flow to a mere ruffling on the surface. There may be almost no disturbances of consciousness or loss of memory (Marchand, 1948). If there is complete loss of consciousness, there is usually amnesia, deep sleep, headache and some degree of post-epileptic confusion which may vary in degree of complexity from short bursts of purposeless running to apparently conscious and well-controlled behaviour. It is relevant that in any consideration of psychiatric manifestations of epilepsy, all shades of disturbances (most frequently with varying degrees of consciousness) occur, whereupon the behavioural aspects over-shadow the fit itself.

The Psychopathology of Epilepsy

On the understanding of the psychopathology of the epileptic, Williams (1968) considered five psychological aspects:—

1. Effects of associated physical brain damage upon bodily structure, function, intellectual capacity and personality and behaviour. The commonest cause of psychiatric epileptic manifestations is temporal lobe epilepsy. (Arid et al., 1967) found that 76% of the onset of temporal lobe epilepsy was within the first two decades of life and birth trauma accounted for 59% of his cases surveyed.

2. Effects of the fits on the person's behaviour or thoughts as well as upon his life pattern. The epileptic is apt to feel different from his peers as a result of this persistent, intangible and frightening disorder. He may suffer miserable restriction, loneliness or over-protectiveness at home, school, vocation and even marriage. He develops an emotional reaction to these restrictions and may develop what is termed a *chronic disease personality* (Livingston, 1963).

3. Results of medical or surgical treatment reflected in the alteration of intellect and behaviour.

   Rarely, surgical extirpation of cerebral tissues, if successful, leads to the improvement of patients' behaviour and intellectual performance. On the other hand, medical treatment in sufficiently large doses of barbiturates to suppress the fit, often makes the patient drowsy and retarded, while sometimes young children become restless and aggressive. Previously the use of bromides produced the *hypokinetic, stupid, lethargic* epileptic, which was once termed bromide psychosis.

4. Development of secondary neurosis as a result of the patient's disturbed life-pattern, whether he is brain damaged or not. In a survey of general practice, one quarter of adult epileptic patients had conspicuous psychiatric disorder in the absence of brain damage. In children, psychiatric disorders manifest as temper tantrums, indiscipline, bed wetting and indolence in school. It is important to recognize these disorders as a secondary reaction to epilepsy. Also, as long as they exist, epilepsy is likely to continue as a stress symptom. In adults, there is the development of the so called *epileptic temperament or personality* (Tizard, 1962).

5. Influence of intercurrent neurosis and apparently unrelated neurosis upon epilepsy.

   There could be a period of acute emotional stress which may be followed by a convulsion (induced fits) and the fits tend to continue in the same pattern after they have been induced by a disturbance in the life pattern. Furthermore, the occurence of a neurosis may be marked by the repetition of fits as a stress symptom. Long-lasting neurosis may prevent the response of illness to the use of anti-convulsant therapy. The frequent fits increase further the life disturbances which in turn enhance the neurosis to increase the epilepsy.

Diagnostic Consideration of Psychomotor Epilepsy

Lennox (1960) called epilepsy *paroxysmal cerebral dysrhythmia*. When the focal discharge pattern is in the parietal, occipital or frontal lobes, symptomatology is largely neurological. If the disorder is in one or both temporal lobes, its symptomatology is largely psychiatric or psychomotor epilepsy. While 5-10% of normal persons have abnormal EEG's similar to epileptics, about 85% of persons (Kolb, 1968) with a history of epilepsy show abnormal EEG between convulsions. Furthermore, some confirmed epileptics never show any abnormal EEG tracings due to the foci of discharge being deep in the brain, and discharges occuring too infrequently.

By and large, the main stay of diagnosis of psychomotor epilepsy is through the EEG. Sometimes psychical (emotional) seizures occur in the absence of abnormal EEG tracings and the diagnosis may have to be made from the clinical history.

Since epilepsy is a symptom of many diseases, it can take many unusual manifestations (Gibberd, 1969). Nocturnal epilepsy occurs when the patient is asleep, or often immediately followed by sleep, so that apart from tongue biting and nocturnal enuresis, the patient may be unaware of the convulsions. Epilepsy during drowsiness differs from nocturnal epilepsy in that it occurs when the patient is falling asleep or awakening, occurring most frequently when the patient is about to get out of bed or dozing in the chair. Photogenic epilepsy occurs when patients are looking at a flashing light or watching television.

It is almost impossible to classify the psychiatric manifestations of epilepsy satisfactorily in all respects. The phenomena can be classified as acute, sub-acute or chronic. Acute phenomena can be pre-ictal, ictal or post-ictal. The importance in recognising the time relationship to the seizure is that post-ictal phenomena have little localizing value.

Generalized or Centrencephalic Epilepsy

This major seizure manifests no aura and the EEG shows no focal abnormality. Total loss of consciousness need not occur although in every case, there is an alteration in the state of consciousness. Some post-ictal cases manifest localized paralysis or Todd's paralysis which may be mistaken for a hysterical reaction or a cerebro-vascular accident. Some degree of confusion is invariable. The patient is likely to be restless, fidgeting about in a manner reminescent of *occupational delerium* (Slater & Roth, 1969). Post-epileptic automatisms of varying degrees of complexity occur, and explosions of irritability and anger are not infrequent.

The Petit Mal Status

Here the patient may have an altered state of consciousness with EEG showing characteristic spike and wave complexes. The patient is apathetic, retarded and preoccupied, bordering on stupor.

This disturbance of consciousness may last from a few seconds to weeks, and throughout the apparent lifelessness, he may be experiencing continuous visual and auditory hallucinations of a cinematographic nature. The condition is frequently called *epileptic stupor*.

Another form of petit mal attack named by Lennox (1945) as the *petit mal triad* consists of:—

(a) Catalepsy or akinetic seizure due to a sudden loss of muscle tone.

(b) Myoclonic seizure.

(c) Petit mal *absences*.

Temporal Lobe Epilepsy

The commonest focal epilepsy is temporal lobe epilepsy where localizing features are found consisting of transient psychological, sensory or motor symptoms, constituting the *aura* which normally lasts for a short time. The aura preceeding the epileptic seizure may be for long the only symptom of the illness. Furthermore, while the major fit may be suppressed by medication, the aura may remain the only symptom of the epilepsy. The localizing value of the aura for indicating the focus which the epileptic discharge arises is important (Penfield & Kristiensen, 1951). Penfield has suggested that an aura of hallucinations or *dream-like state* may point to a focus in the temporal lobe. Clinically, temporal lobe attacks are associated with *psychomotor* attacks. Characteristically, there is tremendous variability in the clinical picture from case to case.

Psychical Seizures

Jackson (1888), described 50 cases of uncinate fits, which were characterized by:—

(a) Only rarely loss of consciousness.

(b) Convulsions were seldom present.

(c) A marked disturbance of thought, perception, feeling and behaviour. They are also called *psychical seizures*. (Whitten, 1969) or *dream-like states*.

Characteristically they show perceptual illusions *(deja-vu phenomena)*, hallucinatory seizures, mood or emotional changes, forced thinking, dreamlike states. Here the paroxysmal psychiatric phenomena appear as *emotional states or disorders* substituting the convulsive fit, and has to be differentiated from the paroxysmal psychomotor equivalent. Their symptoms are not those that occur as an emotional reaction to organic disease or emotional problems. They are symptoms of a paroxysmal disturbance in cerebral function and are indicative of organic disease.

The *psychical seizures* are all associated with a disturbance of consciousness, and may be so brief as to go undetected. Generally, they are almost all associated with temporal lobe epilepsy.

1. **Perceptual Illusions**

There is a false interpretation of real sensory stimuli which takes many forms and can involve any sensory modality. Epileptic illusions consist of micropsia, enhanced vision and objects moving further or nearer than they really were. However in the same patient, the illusions are constant and repetitive (Gibbs, 1948). Common among their illusions is the

(a) *deja-vu* phenomena, where strange objects or persons seem familiar.

(b) *jamais-vu*, where objects appear far away and unreal.

(c) depersonalization, derealization and disturbances of body image. It was probably related to a disturbance in the limbic system of the temporal lobe (Kenna & Sedmon, 1965). More often the patient describe brief paroxysmal feelings of loneliness or strangeness or a *dreamy feeling* or being a spectator to an event and not part of it.

2. **Hallucinatory Seizures**

They are probably the most commonly-encountered phenomena in *psychical seizures* and are symptomatic of a discharge from the temporal lobe. The hallucinatory experience is usually made up of the individual's personal experience as well as an awareness of his surroundings. This leads to a *doubling of consciousness* in the mental state. The hallucinations represent any of the sensory modalities — visual, olfactory, gustatory, hearing, touch and often strips of past feelings and memories.

The diagnosis is made from the history and is characterized by brief, paroxysmal, stereotyped and irresistible symptoms followed by transient cerebral impairment. They seldom last for more than a few minutes, and are repetitive, occuring at nidefinite intervals and in clusters. There is no associated aura.

The patient may have a *hallucinatory march,* i.e., from one thought to another without variation in each. When the occipital lobe is involved, there may be visual hallucinations, usually of crude perceptions of colour. Occasionally the phenomenon is motionless. If the uncus of the temporal lobe is involved, uncinate fits occur.

Another interesting phenomenon is autoscopy, where the patient sees an identical image of himself, apart from himself. The organic view is that it is an irritation of the temporal or parieto-occipital areas.

3. **Mood or Emotional Changes**

This is probably the commonest change in epilepsy. A prodromal mood ranging from depression to irritability often precede a fit and is aborted by the fit (Vander, 195). The epileptic mood is of sudden onset, building up within a matter of hours to days. Suicidal or homicidal attempts are not uncommon in these states.

More commonly, there are moods of irritability, even of violent anger with senseless aggression which is frequently called *epileptic furor*. They can occur without any disturbance of consciousness, e.g., *mania-a-potu* in chronic alcoholism. Other epileptics who are liable to mood changes may start drinking in *dipsomaniac* bouts. Others in this state develop paranoid experiences and are liable to misinterprete everything as suspicious. An affective aura is common and the description of this aura was vividly described by Dostoievsky (Slater & Roth, 1969) as "..... a feeling of happiness which I have never experienced in my normal state of which I cannot give the idea ..... complete harmony with myself and with the whole world".

Sudden feelings of despair, guilt, anxiety and terror may occur. Premonitions of death, of the end of the world, basic and philosophical doubts, suicidal and aggressive urges have also been described. Dewhurst & Beard (1970) described six cases of proven temporal lobe epilepsy who had sudden religious conversions after their fits. Each experienced religious aura, visual and auditory hallucinations.

Some patients with anterior superior temporal lobe disease experience feelings of well being, i.e., *epileptic ecstasy*. Mulder and Daly (1954) illustrated a case "who suddenly felt as if he had no worries, as though everything was all right". Epileptic depressions and prolonged psychomotor automatism can last for weeks or months and can occasionally be interrupted by a single induced convulsion (Hill, 1954) or a seizure.

4. **Forced Thinking**

Forced ideas were experienced like the passivity phenomena in schizophrenia, e.g. the idea of eternity or infinity may suddenly present itself to the patient, or a storm of indescribable thoughts may race through the epileptic's mind (Slater & Roth, 1969). These thoughts are compelling and recurring and all other thoughts are excluded. The forced thinking may comprise the entire attack or may be an aural phenomena. He usually cannot remember the exact nature of the thoughts, or tone of the process, which is usually unpleasant. He may describe a recurrent loss of control of his thoughts or a fixation on thoughts and manifest similarly to an obsessive-compulsive disorder (Penfield & Kristiensen, 1951). Such symptoms are usually associated with frontal lobe lesions as well as temporal lobe lesions.

5. **Dream-like States or Twilight States**

Wilson (1940) subdivided the *dream-like states* as release phenomena, while hallucinations were discharge phenomena. The post-ictal twilight state may follow all kinds of epileptic attacks, with a clouding of consciousness, and associated with mood changes of irritability and sensitivity to minor stimuli and outbursts of primitive rage reactions. These states often accompany acute psychotic symptoms, delusional ideas, hallucinations, illusions, compulsive acts and disturbances of affect. The disturbance of consciousness may range from a dullness of comprehension to gross psychomotor retardation. Within the twilight or *dream-like states,* the patient may undergo a fugue where he wanders wanders absent-mindedly away.

6. **Prolonged Disturbances**

Gold and Goldensohn (1960) described a number of patients who had well-documented seizures. While there were no motor seizures, they described prolonged, behavioural, emotional and intellectual changes in the patients, with simultanous

EEG abnormalities. These changes were rapid in onset and termination and were characterized by confusion, hostility, negativism, withdrawal, fogginess and dreaminess. The patients never lost consciousness and had good post-ictal recall. These behavioural changes lasted 12 to 72 hours and were indistinguishable from temporal lobe seizures except for their long duration.

Psychomotor Attacks

Penfield (1952) has produced an impressive body of evidence to suggest that when automatic behaviour is prominent or prolonged at whatever stage of the epileptic attack, the origin of the initial discharge is narrowed down to certain sites in the cerebral cortex. The recollection of a well-defined aura after automatism favours the site of origin. The main manifestations of prolonged psychomotor attacks are automatisms and epileptic fugues.

1. **Automatisms**

Mclachlan (1966) defined automatism as "an act which appeared purposive, executive and at times extra-ordinarily elaborate, but occuring without the person knowing what he was doing, and the memory of which, in most instances, do not persist". According to Penry et al. (1969) automatisms could be ictal, post-ictal and perseverative automatisms in epilepsy. They could be associated with petit mal epilepsy but the spread of the epileptic discharge necessary for the appearance of automatism occurs in temporal lobe epilepsy. The interest in automatism lies in the apparent ability to do highly complicated actions, while not yet fully in command of the senses and often followed by complete or partial amnesia.

The medico-legal implications of automatism are important especially for criminals accused of severe aggressive crimes and try to plead epilepsy. Points in favour of epilepsy are:—

(a) absence of a motive or premeditation.

(b) incongruity in the setting of the patient's life which has often been previously blameless.

(c) absence of dissimulation.

(d) presence of amnesia.

(e) presense of subsequent irresistible sleep or coma.

Jackson (1888) looked on automatism as a release phenomenon. The exhaustion of the most highly-developed centres led to the temporary release of less highly-developed centres, which acted on their own accord. Consequently he defined all automatism as post-ictal phenomena. Smith (1956) in his series of 469 cases of temporal lobe epilepsy found that 90% with automatism had a unilateral cerebral focus.

2. **Epileptic Fugues**

The essential factor in the epileptic fugue is the *twilight state or dream-like state*. Marchand (1948) found that 6.4% of epileptics had fugues. A fugue may replace terminal sleep after a seizure, but may precede the first major fit. The patient may wander off, board trains and buses, behave in a *drunken* but apparently purposeful state and appear drowsy and absent-minded. He may be found miles away from where he started, and may suffer from total amnesia in his travels. Evidence of his wanderings may be indicated only by tickets, food and hotel bills. Many authors suspect that *orderly prolonged fugues* may be a hysterical symptom adequately called *hysterical vigilambulism*.

Epilepsy and Sexual Disorders

Kluver and Bucy (1939) reported abnormal sexual behaviour in monkeys in association with temporal lobe lesions. Similar behaviour was noted in human beings following bilateral temporal lobectomy (Terzian & Dalle, 1955). In 1945, Erickson had a female patient who had a tumour removed from the medial surface of the right cerebral hemisphere and developed nymphomania and seizure of aura of *passionate feeling* over the left side of her body.

The best known case is that of Mitchell et al. (1954) in which *safety pin fetishim* was associated with epilepsy and relieved by temporal lobectomy. There is a great deal of evidence to suggest a close and directly-causal relationship between brain lesions and aberrant sexual behaviour, either through *irritation* or *release* of pre-existing tendencies. Rosen (1964) cited a case where a female homosexual had suffered temporal lobe epilepsy with vaginal aura and sexual excitement followed by the unpleasant experience of a seizure may have resulted in strong conditioning with subsequent disturbance of sexual orientation. In 1969, Hooshmand and Brawley reported two cases of exhibitionism suffering from temporal lobe epilepsy. Their automatisms simulated exhibitionism. The first case was a male who

usually exposed himself to all and sundry (making true exhibitionism unlikely); while the second patient was an unlikely female exhibitionist.

Taylor (1969) examined 100 patients diagnosed as temporal lobe epilepsy before and after temporal lobectomy and found that there was a reduction in sexual drive post-operatively. It has been found that two-thirds of cases of temporal lobe epilepsy had hyposexuality and it was difficult to say if symptoms were due to drug medication or to epilepsy.

Relationship of Hysteria and Epilepsy

There are some features in common between a hysterical disturbance and an epileptic fit. Moreover, epileptics are at times liable to disturbances which closely resemble hysterical mechanisms. Charcot first postulated the concept of *hystero-epilepsy* when he encountered patients in whom it was difficult to distinguish between epileptic and hysterical seizures.

The correct diagnosis depends on the following points:—

(a) The patient may be suffering from epilepsy, or the seizure may be hysterical in nature (pseudo-seizure).

(b) Epilepsy and the hysterical reaction may coexist as separate entities together in one individual. This mixed form is rare.

(c) Epilepsy may result in a hysterical reaction and this is particularly true in temporal lobe epilepsy.

(d) A hysterical reaction may activate an epileptic seizure — an affective reflex epilepsy, e.g., a woman may develop an epileptic fit which is perpetuated after receiving news of the sudden death of her husband.

Despite of the above attempts at differentiating the two conditions, it can be difficult to distinguish epileptic from hysterical seizure despite of modern techniques. It is difficult to know when hysterical fits end and when epilepsy begins.

The Epileptic Personality Disorder

Previously, the personality of the epileptic was said to be a consequence of repeated fits, causing a state of moral and intellectual deterioration. The *epileptic personality* is said to be composed of apathy, flattened affect, egocentricity, rigidity, eccentricity and hyper-sensitivity. They are also liable to explosive episodes of anger, irritability and aggression. Bleuler in 1936 stated that 'epileptics were as a rule psychopathic'. His findings were based of course on the institutionalized mental hospital population. However, Lennox (1942) felt that the epileptic character was the result of difficulties in life associated with the recurring fits.

Current thinking (Duffy et al., 1966; Slater & Roth, 1969) emphasizes that in most cases of epilepsy, there is no deterioration of intellect. However psychomotor epilepsy is associated with a significant degree of emotional illness. The source of emotional factors and emotional upsets frequently trigger seizures. The patient's concern about seizures and the dulling effect of drugs intrude and influence all aspects of his daily life. The paroxysmal disturbances may stimulate submissive and masochistic strivings, together with guilt, dependency and expitiation. The experience of helplessness may stimulate infantile type of regressive longings as well as oral, excretory and genital strivings. He reacts against having any special concessions and pity being made because of his illness. A prevading sense of insecurity carries him to work long hours, thereby resulting in depression and anxiety. The psychopathology of the epileptic personality arises out of the epileptic process proper and may lie interwoven with strivings and conflicts arising out of the relationship with the environment.

Nevertheless it is certain that personality changes take place after the onset of epilepsy, i.e., at a very young age before the crystallization of the personality. About 50% (Guller, 1960) of patients show this change, and they are in greater part in severe and long-standing cases. Patients with the greatest number of fits show the severest alteration in personality. Both intellectual and effective components are affected. On the intellectual side, there is retardation, perservation, circumstantiality and a narrowing down of the personality to the *organic orderliness* of the obsessional. He ties himself to a fixed routine and protects himself from insecure situations. On the affective side, there is a tendency to irritability and explosions of affect. The epileptoid character is said to be bipolar, oscillating between viscosity and explosivity. Chronic epileptics are capable of actions of malicious and petty spite. There is also a curious tendency towards religiosity and to use religious phrases devoid of inner meaning.

In the more advanced stages of *epileptic dementia*, there is an incapacity to deal with what is new, and a gradual loss of old and well-established patterns of behaviour. Memory deteriorates and the epileptic may eventually resemble the chronic schizophrenic and state.

The Epileptic Psychosis

The psychotic state in epilepsy follows only after years of epileptic fits, clinically closely resembling schizophrenic psychosis. The onset of psychosis has been generally insidious and coincided more often with a fall rather than a rise in the frequency of epileptic fits. There is, however, no close association between the epileptic psychosis and the endogenous psychosis.

Pond (1958) described their psychotic states as closely resembling schizophrenic psychosis, with paranoid ideas which might become systematized, ideas of reference, auditory hallucinations often of a menancing quality and occasional frank thought disorder with neologisms, condensed words and inconsequential sentences. However, their affect remained warm and there was no typical deterioration to the hebephrenic state.

Thus the clinical picture represents a problem in the differential diagnosis of schizophrenic and complex *psychical seizures*. Slater and Beard (1963) stressed the difficulties and importance of distinguishing the two syndromes. On the other hand, Heath (1962) stressed that although the inter-seizure behaviour of psychomotor epilepsy may be similar to schizophrenia, the EEG of the schizophrenic is characteristically normal (although the EEG is slightly more abnormal in schizophrenics than normal persons). In only a small minority of cases are there difficulties in differentiating between the syndromes of schizophrenia and psychomotor epilepsy. The confusion usually occurs when the inter-ictal behavioural abnormalities of the epileptic are prolonged and less circumscribed. Depth EEG recordings of the seizural group are quite different from the schizophrenic group, even when the epileptic displays features indistinguishable from schizophrenia. Due to the difficulty in differentiating the two disorders, Monroe (1959) set general guidelines to diagnosis. If one emphasized the sudden onset and sudden disappearance of the episodes, the disorientation, the amnesia, the automatic and repetitive movements and the borderline EEG, one would arrive at the conclusion that it was an epileptic disorder. On the other hand, if one emphasized the rather pronounced inter-ictal behavioural disturbances, the length of the attacks, one would be more inclined to make a diagnosis of schizophrenia.

Controlled comparative investigations by Flor-Henry (1969) showed that temporal lobe epilepsy of the dominant hemisphere disposed to schizophrenic-like psychotic manifestations; whereas epilepsy in the non-dominant temporal lobe was associated with manic-depressive psychotic reactions.

Conclusion

The psychiatric aspects of epilepsy were discussed and evaluated. Practically all psychiatric manifestations could occur in epilepsy ranging from psychical seizures to psychomotor automatisms and fugues. The personality of the epileptic was said to have been the result of an emotional reaction to the illness and was similar to that of any person suffering from a chronic illness. It was difficult in some cases to differentiate epileptic psychosis from schizophrenia although there was no pathological relationship between the two syndromes. By and large, the EEG remained the main diagnostic instrument in the diagnosis of psychomotor epilepsy.

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