CHAPTER VII

ORGANIC BRAIN DISORDERS

Dementia
Confusional State
Epilepsy
Puerperal Psychosis
ORGANIC BRAIN DISORDERS

This is an umbrella term used to include a wide range of impaired mental functions due to cerebral damage or insult often called brain damage syndrome most commonly seen in children. Any brain damage may occur with no obvious mental changes, most patients with neurological signs of cerebral damage would show minor psychological deficit and the mental changes may continue even after the physical signs have disappeared.

Organic brain disorders could be acute, subacute or chronic. Not all cases of brain damage are seen by the psychiatrist but there are clinical varieties which are of psychological importance showing certain common features, namely:

1. Learning disorder, i.e. speech, hearing.
2. Motor disorder - overactivity in coordination, involuntary movements
3. Emotional disorder - mood swings, impulsive behaviour, catastrophic reactions, antisocial behaviour.
4. Cognitive disorders - poor memory, poor concentration, specific defects due to local lesions.

DEMENTIA:

Dementia is a disorder of all mental processes with progressive deterioration of a previous normal intellectual function secondary to brain damage or disease. Dementia is essentially subacute a chronic or primary and secondary.
AETIOLOGY:

1. Primary dementia - In this condition the cause is largely unknown.
2. Secondary dementia is essentially symptomatic or a sequelae of an associated brain dysfunction due to the following causes:
   a. Degenerative
   b. Inflammatory
   c. Traumatic
   d. Neoplastic
   e. Cerebrovascular
   f. Toxic or metabolic.

So, the differential diagnosis would include the following disorders:

1. Deficiency diseases - such as wernick’s encephalopathy due to thiamine deficiency or following chronic alcoholism and hypermesis, gravidarum or dementia associated with B. 12 deficiency.
2. Metabolic disorders such as hypoglycaemia or hypothyroidism or chronic liver disease.
3. Cerebral tumor - a prefrontal cerebral tumor may present with mental changes.
4. General paralysis of the insane with positive W.R. and active C.S.F. confirm the diagnosis.
5. Head injury with a profound concussion or prolonged unconsciousness is often associated with mental changes. Elderly people or children suffering apparently minor head injuries should be watched carefully for a chronic subdural haematoma as this would gradually lead to organic mental deterioration. Repeated minor head injuries as in boxing have recently been implicated for causing incipient dementia.
6. Repeated convulsive fits with episodic hypoxia of uncontrolled epilepsy may end up with epileptic dementia.

PRESENIILE DEMENTIA.

This is a general term describing a primary dementia occurring before the age of 60. There are two specific forms namely, Alzheimer and Pick’s disease. These are pathological diagnosis which should be made only by exclusion as the differentiation between the two is difficult and there is no treatment.

Alzheimer disease is a generalised cortical atrophy associated with epilepsy while Pick’s disease is characterised by intellectual impairment rather than focal lesions.
CLINICAL FEATURES:

Dementia is characterised by three forms of mental disturbances:

1. INTELLECTUAL IMPAIRMENT.

This is seen more commonly in recent memory failure compensated for by confabulations which are attempts to fill the gaps due to the loss of sequence of events and time relationship. There is obvious loss of insight with disorientation for time and place. There is a characteristic emotional lability with sudden bursts of weeping alternating with an episode of inappropriate elation of mood. There is often neurological complications like nomimam aphasia, agnosia, etc. Korsakoff psychosis is a form of dementia with severe impairment of memory due to organic brain disease but a clinically similar condition may occur with other types of brain disease. This is also characterised by three main disturbances:

A. Memory disturbance for recent events while that for remote events remains relatively intact until finally both are affected.
B. Distortion of time sense
C. Confabulations.

It has been discussed before and is commonly due to chronic alcoholism or Vitamine B1 deficiency.

2. EMOTIONAL DISTURBANCE.

The degree of emotional lability is complicated by the catastrophic reaction described by Goldstein as severe agitation and aggression when the patients are confronted with a task beyond their failing capacity like answering a question or performing a test. There are secondary hysterical or depressive features. Delusions of persecution or hypochondriasis are common while the appearance of indignant personal habits and devious personality traits come clear to the surface like meanness, rigidity, inflexibility, uncontrolled sexual impulses, suspiciousness and false accusations to other people, etc.

3. BEHAVIOURAL DISTURBANCE.

These are the end state of a previously dignified person into a state of total pity and misery with self-exposure, micturition in public, deterioration of personal habits in the way of eating, drinking, sleeping, etc.
DIAGNOSIS:

There are certain steps which should be make in the investigation of dementia especially that occurring in the middle age:

1. Detailed history from the patient and the relatives.
2. A complete general and neurological examination.
3. A full psychological assessment of intellectual functions by psychometric testing.
4. W.R.
5. Radio isotope scanning
6. Serum B. 12
7. Electro-encephlography and arteriography.
8. C.S.F. examination and air encephlography.
9. Cortical Biopsy.

Before embarking on such heroic investigation one has to assess each case individually and to weigh the risk of disadvantage of the investigation with the advantage of finding a treatable cause because some of the investigations are dangerous and should not be taken lightly.

TREATMENT:

This depends entirely on management of the underlying cause while in primary dementia treatment is entirely symptomatic. The general principles are as follows:
1. Adopting a very sympathetic attitude towards the patient putting into mind the limited personality assets.
2. Family therapy - counselling the relatives and explaining to them the nature of the illness and helping them to cooperate in managing the difficult situation of caring for such a person at home. This might involve an in-patient admission period to relieve pressure from relatives into a psychogeriatric unit or an old people home.
3. Vitamin supplement with high doses of B. Complex and B.1
4. Treatment of intercurrent infection or fractures.
5. Treatment of co-existing depression by antidepressant or even ECT.
6. Environmental manipulation by providing domiciliary service, home visit, etc.
CONFUSIONAL STATES.

Confusional states are not uncommon but potentially treatable conditions which occur as Psychiatric emergencies inside any hospital ward or from the outpatients and through the accident unit. Very often the casualty doctors are called late at night to deal with such cases in the outpatient department or the duty doctor is asked in the small hours of the morning to see such a patient in the general ward. It is the duty of every practising doctor to get very acquainted with the management of confusional state as if not promptly and properly treated they might lead to a considerable disaster. It usually happens that general practitioners when confronted with a patient behaving strangely in the ward to call a Psychiatrist for a second opinion. This is a good approach but should not be a substitute for good ability to deal effectively with such cases as they constitute a fairly high percentage of Psychiatric emergencies like status epileptics.

The differential diagnosis of acute Psychotic episode from toxic confusion states or delerium tremens should be made relatively easy on the following grounds:

1. The full history and account from the relatives to elucidate previous evidence of Psychiatric disorder.
2. The absence of clinical features of toxic confusion state.
3. The clinical picture of the illness. Basically the general management is the same but it is important to differentiate the various groups of acute Psychotic reactions to be able to deal with the underlying cause effectively. These episodes of excitement or disturbed behaviour comprise the following Psychiatric emergencies:
   a. Acute Schizophrenic reactions
   b. Acute Depressive reactions
c. Acute Mania
d. Acute Mystical reactions.

While these reactions normally—from the history taken—are found to be released by environmental stress or by medical or surgical crisis, they can occur in near normal psychological equilibrium and last longer than acute toxic reactions. On the other hand acute toxic reactions could be differentiated by the following features:

1. Cloudiness of consciousness
2. Disturbances of recent memory
3. Disturbances of attentions, concentration and judgement.
4. Disorientation of space, time and person
5. Emotional lability
6. Hallucinations and illusions, i.e. misinterpretation of external stimuli.

As a result of these disturbances of higher mental function the individual patient would show evidence of:

a. Delusion
b. Excitements

c. Panic attack
d. Disturbance of behaviour with loss of touch with his environment and behaving dangerously.

AETIOLOGY:

This could be divided into:
1. Direct causes
   2. Indirect causes

1. DIRECT CAUSES:

a. Lack of oxygen affecting the cortical neurons, i.e. following concussion or cerebral anoxia.
b. Some biochemical disturbance leading to inhibition of brain enzyme activity.
c. Toxic metabolic substance accumulating in the brain, i.e. high blood urea level as in the case of impending renal failure or toxic drugs injected unwittingly.
d. Hypoglycaemia leading to depletion of cellular glucose in the brain with characteristic features of hypoglycaemic behaviour disturbance.
e. Electrolyte disturbance in the body fluid as in the case of steroid therapy.
f. Toxic drug effect like amphetamine or hallucinogenic drug or beladonna preparation.

It is very important to take a good history and make a careful physical and ancillary assessment to find out whether the patient was taking drugs like amphetamine or alcohol or had sustained head injury following an epileptic fit. There is a great association of alcohol epilepsy head injury and confusion state. It is necessary to establish which is the cause and effect in this relationship. Epilepsy in alcoholics is very common and thus involves a great deal of medico-legal procedures after discharge.

2. INDIRECT CAUSES:

a. Infections producing toxic substances leading to confusion state like typhoid fever delerium which is a classic example in the general wards.
b. Cardio-vascular disturbance following heart attack and cerebral anoxia.
c. Pulmonary embolism or respiratory distress with resulting hypoxia.
d. Established vitamine deficiency following chronic debilitating illness or malnourishment as in pellagra (thiamine deficiency) or chronic alcoholism (dilerium tremens). Delerium tremens is a state of disturbance of consciousness characterised by loss of touch with reality with hallucinations delusions and marked tremor due to infection causing high fever or due to toxic effect of a drug.
e. Following anaesthesia and shock after surgical operations with consequent cerebral hypoxia.
f. Metabolic diseases like diabetes mellitus, hepatic failure or uraemia.
g. Endocrine disorders notably puerperal psychosis in obstetric wards or myxoedematous crisis in medical wards.

TREATMENT:

The general principle of management of confusion state is the same except that early diagnosis and establishment of the underlying cause is the key to proper management. In all cases sympathetic, gentle handling is the best approach to a frightened, potentially violent and aggressive patient. The primary nursing aim lies in the confinement in a separate well-lit-room with minimum distraction and external sti-
muli. The attending nursing person should be a familiar good companion or a regular constant nurse because changing faces and surroundings increases the tendency to misinterpretation and illusions. The secondary nursing aim is to attend to the cerebral hypoxia if any by oxygen administration and adequate respiratory ventilation by drugs like aminophyline, ephedrine etc. The third nursing aim is the question of hydration by fluid intake by mouth or glucose intravenously with vitamine supplement like Vitamine B complex and ascorbic acid, preferably high potency parentrovite intravenously twice daily in glucose drip of 5% dextrose in normal saline depending on the diagnosis. Haldol (Haloperidol) drops in the same drip can be a safe and effective combinations. The fourth aim should be that of sedation-barbiturates should be avoided as they are cerebral depressants and can potentiate the effect of alcohol and increase the cerebral hypoxia. A safe sedative is oral chloral hydrate, paraldehyde or chlorpromazine. In serve excitement chlorpromazine intramuscular may help the patient to settle down with the minimum physical restraint.

Confusion state is one of the commonest psychiatric emergencies and medical problems in the general wards. Although Psychiatric opinion is necessary it is not mandatory to starting management of such cases by any doctor practising in the general hospital. An experienced physician can anticipate the occurrence of such emergency in a vulnerable patient who appears restless in the evening and potentially violent at night.
EPILEPSY

Epilepsy is the classic example of a neuro-psychiatric disorder where the border between psychiatry and neurology are blurred, often shared, always complementary and not mutually exclusive. The psychiatric complications of epilepsy are so varied and complex that the psychiatrist should not relegate his role to deal with epilepsy before such complications arise.

Epilepsy comprise a group of conditions which are characterised by recurrent paroxysmal disorders of brain functions. Epilepsy occurs in about 1 in 200 in the general population.

There are predisposing factors and precipitating factors:

1. Predisposing factors include - constitutional predisposition, prenatal disorders and birth injuries or neo-natal disorders, like trauma, infections, cerebrovascular lesions or tumours.
2. Precipitating factors include psychological stress, exhaustion, cerebral anoxia, hypoglycaemia, hypocalcaemia, overhydration, drug withdrawal or alkalosis due to pH changes resulting from hyperventilation.

It is very important to establish the diagnosis of epilepsy with the utmost care as the social stigma, the treatment complication and the effect on the social and psychological aspects on life and work record is tremendous. Once the patient is labelled as Epileptic it is difficult to alter the diagnosis once the treatment is started. Very often in the follow-up the attending physician even in the absence of organic base would find it difficult to stop medication lest he should precipitate a withdrawal fit and the patient continues to carry on with treatment for ages.
It is the duty of the attending physician from the beginning to establish the proper diagnosis on positive evidence and not by exclusions as it is wrongly practiced in hysterical fit.

**DIAGNOSIS:**

1. Good History-taking
2. An Eye Witness account

It is always worthwhile asking the question - is it a faint or a fit. The differential diagnosis include:

1. Drop attacks - A form of epilepsy or basilar insufficiency.
2. Narcolepsy - Irresistible desire to go to sleep.
3. Hysterical fits - typical features but can co-exist with epilepsy
4. Hypoglycaemia - cerebral depletion of glucose of various causes.
5. Syncope - transient loss of consciousness due to cerebral ischaemia.

Epilepsy is a symptom and not a disease - it may be a symptom of:

a. Congenital neuronal dysfunction
b. Systemic metabolic disorder
c. Structural brain disease

**CLASSIFICATION:**

Epilepsy can be classified according to aetiology or clinical picture or EEG recording:

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<tr>
<th>AETIOLOGY</th>
<th>CLINICAL</th>
<th>EEG</th>
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<tr>
<td>Idiopathic</td>
<td>Primarily due to</td>
<td>Centre-Encaphalic</td>
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<tr>
<td>Epilepsy</td>
<td>congenital neuronal</td>
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<td></td>
<td>instability</td>
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<tr>
<td>Symptomatic</td>
<td>Primarily due to</td>
<td>Generalised fit (major or minor)</td>
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<td>Epilepsy</td>
<td>Metabolic or toxic Disorder</td>
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<td></td>
<td>Primarily due to</td>
<td>Focal Focal</td>
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<td></td>
<td>Structural brain disorder</td>
<td>attack Epilepsy</td>
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The general clinical features of each type of epilepsy would be found in more detailed text books.
The Grand mal type or the classical epileptic fit which can be recognised by the lay person consists of an aura followed by tonic phase of muscular contraction and the clonic phase of violent convulsive movements of the body. The urinary and less often the faecal incontinence is due to the excessive relaxation of the sphincters and contradiction of abdominal muscles. This period would be followed by complete relaxation where the patient would go to sleep or rouse gradually.

The EEG changes would show synchronous high voltage fast waves over all parts of the brain. This could pass into serial epilepsy with intermittent gain of consciousness or develop into statuts epilepticus where there is no gain of consciousness between the attack and this constitute a medical emergency which needs active intervention.

The Petit mal type - This is seen commonly in children with characteristic EEG change of 3C.P.S and with characteristic EEG spike and wave discharge synchronous in both hemispheres. They are called «absences» referring to the specific nature of very short period of loss of consciousness in children which adversely affect their attention and school performance. The petit mal type may be accompanied by major seizures. It is said that if the petit mal continues after adolescence or the EEG change remains non-specific of spike and wave or it does not respond to ethosuximide drug, one should reconsider the diagnosis.

Focal Epilepsy: These are symptomatic of focal brain lesion. During the focal attack which involves a certain part of the body the patient remains generally conscious and is called minor epilepsy or it may pass into generalised type.

Temporal Lobe Epilepsy: This is the commonest type seen in Psychiatric practice as they are often preceded or accompanied or followed by behaviour disorder.

They are complex disorders of the sensations of sight, sound, taste, smell, touch and memory. So hallucinations and delusions secondary to these sensory disturbances are common manifestations of this disorder. Hallucinatory voices and visions are not uncommon. During the attack the patient does not fall unconscious but continues to behave strangely in a dreamy state often called fugue state. This is accompanied by complete amnesia for these events after the attack.

The EEG changes include abnormal record of slow waves and polyspike discharge seen bilaterally especially using sphenoidal lead technique to detect subtle changes. It is important to localise the ana-
tomical lesion to decide on drug or surgical treatment. Lesions affecting
the temporal lobes due to high fever in childhood with continuous
attacks not responding to drugs would need surgical removal of the
defined focus in early adolescence by operation called temporal lobec-
tomy.

Psychiatric Sequelae of Epilepsy:
   a. Schizophrenia-like-Psychosis
   b. Epileptic Psychotic excitement
   c. Epileptic Personality disorder
   d. Epileptic Dementia

TREATMENT:

The primary objective is to correct the underlying metabolic or
structural disorder. The symptomatic treatment depends on the type of
seizure and the relevant drug. The secondary objective is to help the
patient in leading a normal active life maintained on specific therapy
with regular follow up in epileptic clinic like moderate clinic for Schi-
zophrenic or diabetic clinic. The third objective is counselling and
guidance regarding jobs, driving licence, and marital counselling.
Children should continue their ordinary schooling with the pertinent
advice regarding caution in swimming, riding bicycles, avoiding
playing in high places, receiving regular medical care, etc.

DRUG TREATMENT:

Drug treatment of epilepsy should not be a substitute to Psychothe-
rapeutic intervention when these frightened patients need constant
reassurance about the nature of the fit and the future of the illness
especially with prolonged treatment.

The drug regime depends on the type of the fits, the patient’s re-
ponse and the side effects produced. The drug should be introduced
with the smallest dose increasing gradually until the fit is controlled or
side effects are obvious. A combination of drugs should only be made
after careful assessment and if possible it should be avoided. Pheno-
barbitone is the drug of choice but very often a combination with
primidone and or phenytoin is necessary. This is a good combination
for grand mal while troxidone is the drug of choice for petit mal and
carbamazepine for temporal lobe epilepsy.
PUERPERAL PSYCHOCIS

It is generally accepted that post-partum psychosis do not constitute an entity distinct from other non-puerperal psychosis. The WHO’S classification I.C.D. (1967) allocates them to categories which are independent of any relationship to child-birth and most cases can be classified as schizophrenic, affective and organic disorders. These psychosis show a great variation in their severity and the rate ranges from 0.8 to 2.5 per 1000 deliveries. Most of them are mild and transitory and only a small proportion are severe enough to require hospital admisson. These psychosis can occur upto one year following child-birth.

AETIOLOGY:

1. Psychological stress of pregnancy, delivery and emotional changes in the pueperium.

2. Biochemical and endocrinological changes such as progesterone level following delivery.

The symptoms could be minor occuring in the first few days as a normal reaction to the emotional aspect of child-birth or severe occuring under tremendous stress and losing longer in high percentage of cases.

CLINICAL FEATURES:

The picture is essentially not different from that occuring in similar illness. However, in the early stage of the illness the clinical picture is often not typical. Symptoms like insomnia, restlessness, depression may last for few days. These may proceed to euphoria, food refusal or disturbing behaviour. The diagnosis of schizophrenic, affective or organic types of mental reaction may occur only later in the course of
the illness. An important feature is the clouding of consciousness which occurs particularly in the early stage of the illness, a more common than in non-puerperal functional psychosis. Only within one or two weeks of the illness can the diagnosis be made with certainty. While recent studies show declining percentage of schizophrenic and depressive reactions they still show a much lower prevalence of organic reaction. The occurrence of delerium, clouding of consciousness and confusion in puerperal psychosis may lead one to misdiagnosis. Cerebral thrombophlebitis with hemiparesis epileptic fits, dysphasia and severe headache can occur as serious complications. Puerperal psychosis is rarely diagnosed before the third day of puerperium. The overall prognosis of puerperal psychosis is probably like that of similar non-puerperal illness and it is better in affective disorders. The organic mental type of illness is best if they survive the first acture phase of the illness in the first few days. This is partly due to the modern methods of treatment particularly ECT and phenothiazine. Modern trends in treatment included the establishment of mother-baby units where joint admission of mother and baby has proved beneficial to both. Relapse rate of puerperal psychosis is approximately 1 to 5 cases while the risk is 100 times larger than that associated with pregnancies in the general population.

Treatment is similar to that management of acute psychotic reactions mentioned earlier.