Organic Confusional States

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SUMMARY

A survey of 175 African patients who died at Ingutsheni Hospital, Bulawayo, during a 4-year period, was undertaken. The survey revealed 22 cases in which it was considered that the organic illness causing death had been a significant factor in the genesis of the mental symptoms which precipitated admission.

Brief case histories of these 22 patients are presented. From data recorded it is concluded that doctors sometimes too readily assume that mental symptoms are due to mental illness, or that a current mental illness is a relapse of one previously diagnosed.

The diagnosis of organic confusional states in general is discussed, with further discussion of specific types of pathology and hysteria.


Physicians and psychiatrists are well aware that confusional states may be caused by organic illness, and are constantly on the alert for such conditions. Nevertheless, the diagnosis sometimes proves elusive, with fatal consequences for the patient. In an attempt to assess the significance of this problem and the value of some clinical features for diagnosis, a survey of African patients who died at Ingutsheni Hospital was undertaken.

During the 4-year period 1 July 1967 - 30 June 1971 there were 175 deaths among the African patients; 46 were female and 129 male. The cause of death was not recorded in 20 cases who were transferred to other hospitals during the terminal illness.

Of the remaining 155 deaths, 3 were accidental. One died from asphyxia caused by inhalation of mucopus from infected tonsils following ECT; another patient with undiagnosed mitral stenosis also died following ECT. One woman died from hypothermia caused by the use of large doses of phenothiazine drugs. Three patients died from the complications of intractable depressive stupor.

Of the remaining 149 patients, no fewer than 127 died from intercurrent illness, the complications of epilepsy and/or severe dementia. Many were elderly or severely demented.

The number of patients in each diagnostic category was as follows: epilepsy, 45; congenital mental subnormality, 10; cerebral syphilis, 10; senile or presenile dementia, 23; schizophrenia, 13; cerebrovascular disease, 5; other or unspecified, 15.

There remained 22 patients in whom the cause of death was considered to be a factor in the genesis of the mental symptoms which precipitated the patient’s admission to hospital. This article reviews the histories of these 22 patients, of whom 21 were admitted by the author. The remaining patient was admitted on 13 August 1965, and responsibility for her was assumed by the author on 22 September 1965; she died on 27 April 1971.

Postmortem examinations were completed in 19 patients; in the remaining 3 patients the diagnoses were unequivocally established antemortem.

The patients may be conveniently divided into the following groups:

Group I

Patients in whom the diagnosis was made antemortem:

Case 1. An elderly female aged about 80 years was admitted on 5 May 1965 with a history of having been mute and inaccessible, but violent when questioned. On admission she was found to have slight clouding of consciousness and congestive heart failure. Treatment was directed at her cardiac failure, with some initial improvement, but some 2½ years later she deteriorated and died on 18 December 1967. No postmortem was performed.

Case 2. A male patient of about 40 years was admitted from Salisbury on 12 December 1967 with a history of having been violent and talking nonsense. On admission he was very restless, but consciousness was moderately clouded and marked dysarthria was present. A diagnosis of organic confusional state was made and lumbar puncture suggested subarachnoid haemorrhage. He deteriorated rapidly and died on 19 December 1967; postmortem examination confirmed the diagnosis.

Case 3. A male of about 35 years was admitted from Salisbury on 18 August 1967 with a history of having been mute and incoherent, with some initial improvement, but some 12 years later he deteriorated and died on 18 January 1968. No postmortem examination was performed.

Case 4. A male aged about 70 years was admitted on 13 January 1971 with a history of attacking other patients and tearing up bedding at a rural hospital. On admission he had numerous paranoid delusions but a clear consciousness; a diagnosis of senile dementia was made. Difficulty in swallowing supervened and he was admitted to Mpilo Hospital where a diagnosis of squamous cell carcinoma of the oesophagus was made. This was inoperable and the diagnosis was confirmed postmortem on 8 March 1971.

Case 5. A male of about 50 years was admitted from Mpilo Hospital on 2 April 1971 with gross dementia following severe hypoglycaemia. His blood sugar was 3 mg/100 ml at the time of his admission to Mpilo; this hypoglycaemia was thought to be alcoholic in origin. On admission his level of consciousness fluctuated, but he rapidly deteriorated and died 9 April 1971. No postmortem examination was performed.

Group II

None of the remaining 17 cases was correctly diagnosed antemortem. These may be conveniently divided into 2 subgroups. Firstly, the patients who died within a week of admission:
Case 6. A female patient aged about 29 years was admitted on 7 October 1968 with a history of headache and being unable to walk for about a week; the certifying physician recorded a diagnosis of hysteria. She died within a few hours of admission due to cardiac failure. No autopsy was performed.

Case 7. A female of about 60 years was admitted on 1 November 1968 with a history of attacks of confusion since the beginning of the year. On admission she appeared to be depressed with disconnected thinking, paranoid delusions and auditory hallucinations. Recent memory was impaired and there was some clouding of consciousness. A diagnosis of presenile dementia was made, but she suddenly collapsed and died on 7 November 1968. A postmortem examination showed a large frontal meningioma compressing the brain, with consequent coning of the brainstem.

Case 8. A female of about 34 years was admitted on 7 February 1969 with a history of aimless wandering, running away from an abusive husband, and being unable to take care of herself for several days. On admission she was mute, inaccessible and had to be fed; curious extension of touch with her environment; the level of consciousness was not recorded. Gross ascites and an enlarged liver were found; cirrhosis of the liver, ascites, diabetes and lung abscess had been diagnosed at the general hospital whence she was admitted. She collapsed and died on 28 January 1970, when postmortem examination showed extensive intraperitoneal haemorrhage from a necrotic carcinoma involving most of the right lobe of the liver.

Case 9. A middle-aged male was admitted as a criminal mental patient on 10 April 1968, having been found guilty but insane following a charge of murder. He had been previously admitted from 25 August 1965-18 August 1966 when a diagnosis of epilepsy was made. He re-admitted because he had suddenly become confused and continuously hallucinated in prison; on admission he was confused, with ataxia and dysarthria. Treatment was commenced with anticonvulsants but he died on 14 February 1969, following a very histrionic performance of throwing at the floor of the right anterior fossa. Postmortem examination showed a haemorrhage into a large tumour of the left parietal area of the brain; there was also blood in the ventricles.

Case 10. A male of 50 years was admitted on 25 June 1968 following a very histrionic performance of throwing himself about in outpatient. On admission he was virtually mute but there was doubtful minimal clouding of consciousness. A diagnosis of schizophrenia was made on the basis of an underlying schizophrenic aura. He died on 2 July 1968, when a postmortem examination showed lobar pneumonia and cerebral infarction on the basis of cerebrovascular disease.

Case 11. A male aged about 37 years was admitted on 13 January 1970, having been found wandering by the police. On admission he was confused, clouded and inaccessible. On 15 January 1970 he became comatose, but rousable. A large mass was felt in the left hypochondrium which was thought to be spleen; he appeared anaemic and a diagnosis of malaria was considered. He deteriorated rapidly and died on 18 January 1970 when postmortem examination showed a large carcinoma of the left lobe of the liver, from which there had been extensive intraperitoneal haemorrhage.

The second subgroup comprises those patients who died more than a week after admission:

Case 12. A female of about 40 years was admitted on 3 May 1969 with a history of having been found wandering; she was demented, dysarthric and ataxic in habits. On admission she was mute, inaccessible and had to be fed; curious extension movements of the head were noted, as were slight clouding of consciousness, emaciation, dehydration and tachycardia. A diagnosis of organic confusion state was made, and slight to moderate clouding of consciousness was present, together with some ataxia and dysarthria. A diagnosis of organic confusional state was made, and there was slight to moderate clouding of consciousness, together with some perseveration and dysarthria, which was attributed to the chlorpromazine she had received. A diagnosis of schizophrenia was made but she collapsed on 27 April 1968 and died the following day. Postmortem examination showed a large tuberculoma some 5 cm in diameter in the right frontal lobe with coning of the brainstem; there were also several tuberculomata of the liver and peritoneum.

Case 13. A female of about 67 years was admitted on 9 January 1970 with a history of irrational behaviour and dirty habits. On admission she was almost mute and completely out of touch with her environment; the level of consciousness was not recorded. Gross ascites and an enlarged liver were found; cirrhosis of the liver, ascites, diabetes and lung abscess had been diagnosed at the general hospital whence she was admitted. She collapsed and died on 28 January 1970, when postmortem examination showed massive intraperitoneal haemorrhage from a necrotic carcinoma involving most of the right lobe of the liver.
out of touch. Physical signs were detected in the left lung and an X-ray film showed this lung to be largely destroyed. She developed a febrile illness which continued with high swinging temperature, despite adequate chemotherapy, until her death on 6 November 1970. Postmortem examination indicated a septicaemia secondary to bronchopneumonia in the right lung; the left lung consisted of a small fibro-anthracotic remnant with fibrocaceous areas and small abscesses.

**Case 19.** A female patient of over 40 years was admitted on 13 August 1965 with a history of having been disorientated and talking nonsense. On admission she was withdrawn with little contact with reality. Thinking was disconnected and auditory and visual hallucinations were present. The level of consciousness was not recorded. A diagnosis of schizophrenia was made; she was also pregnant and delivered normally on 28 January 1966. On 7 February 1966 she suffered a minor seizure; an EEG the following day suggested a right-sided focus. Chest and skull radiography was normal. She remained demented until 26 April 1971 when she had 2 grand mal seizures; she died the following day. Postmortem examination showed a bronchopneumonia, caseous tuberculous glands of neck and mediastinum, and cirrhosis of the liver.

**Case 20.** A male of 28 years was admitted on 15 March 1968 from a general hospital, with a history of talking nonsense and refusing to eat. On admission he was withdrawn and emotionally unresponsive; his thinking was disconnected at phrase level with paranoid delusions, bizarre ideas and auditory hallucinations. A diagnosis of schizophrenia was made. Some 3 months later he developed a swelling of the neck and a caseating mass of tuberculous glands was removed surgically. He seemed to improve physically with antituberculous medication, but collapsed and died on 9 December 1968, when postmortem examination showed an acute haemoglobulinuria nephrosis, oedema of both lungs and fibrocaseous lymph nodes.

**Case 21.** A male aged about 50 years was admitted on 23 January 1969 with a history of having been talking nonsense and unable to look after himself. On admission he smiled inappropriately and the context of his thinking was drifted, with some bizarre ideas. Memory was impaired, and there was slight to moderate clouding of consciousness. Physical examination showed some ataxia, some dysarthria and a positive Romberg sign. His blood WR was positive, so a provisional diagnosis of cerebral syphilis was made; the CSF subsequently proved to be normal. He deteriorated steadily and died on 27 March 1969. Postmortem examination indicated an extensive antemortem embolus in the pulmonary trunk with thrombosis in the left popliteal vein.

**Case 22.** A male of about 56 years was admitted on 1 December 1967, as his mother complained that he talked nonsense and tried to run away from home. On admission his thinking was very disconnected and auditory hallucinations were present. Speech was accompanied by much gesticulating; consciousness was slightly clouded. On physical examination he was found to have a deformed chest with numerous scars suggesting operation and drainage; there was an irregular tachycardia with pulse deficit. His gait was broad-based, his blood WR positive and his CSF contained 124 mg/100 ml protein with a paretic Lange curve, suggesting a diagnosis of cerebral syphilis. On 22 December 1967 he had an acute attack of breathlessness, which was thought to be due to cardiac decompensation, for which he was digitalized. Nevertheless, several other attacks ensued and he died on 8 January 1968, when postmortem examination showed gross cortical softening of the brain, bilateral dilatation of the heart, mitral incompetence and chronic pyelonephritis.

**DISCUSSION**

**Diagnosis of Organic Confusional State**

Sixteen of the 22 patients were admitted in terms of the Mental Disorders Act and the comments of the certifying practitioner about the physical health of the patients were recorded on the medical certificate; 5 patients were admitted voluntarily but outpatient record cards were available for all of them. Only the criminal mental patient had no record of previous medical opinion. In 13 cases the patient had been considered physically healthy by the referring practitioner; in 4 other cases ‘poor health’ or ‘malnutrition’ was noted. In only 4 cases was a definite diagnosis offered; in 2 cases (case 1, congestive heart failure, and case 5, hypoglycaemia) this was correct. In case 13 the possible diagnosis of carcinoma of the liver was noted on the outpatient card, but cirrhosis was thought to be more likely after investigation in a general hospital. In case 6 the referring practitioner made a diagnosis of hysteria. Altogether, 8 of the patients had been previously admitted to a general hospital for investigation.

It would, therefore, appear reasonable to conclude that referring practitioners sometimes assume rather too readily that a patient exhibiting mental symptoms is suffering from a mental illness. In a series of 100 consecutive new referrals to the Maudsley Hospital Emergency Clinic, 16 patients were found to have a previously unrecognized physical disorder. In their review of the literature, these authors report one series in which more than 7% of patients admitted to a psychiatric observation ward were suffering from mental disorder due to underlying physical illness.

Possibly difficulties in managing disturbances of behaviour in a general ward also influence the decision to certify a patient.

In the present group of 22 patients, 7 had previously been admitted to Ingusheni Hospital, 1 of them twice and another on 3 occasions. Clearly it was assumed much too readily by the psychiatrist that the patient was suffering from a relapse of the previous illness. For example, in case 13, the patient had been admitted 3 times previously when a diagnosis of late paraphrenia had been made; on this occasion she died from carcinoma of the liver.

Retrospective analysis of the records showed that an estimate of the level of consciousness was recorded in 18 cases. Consciousness was thought to be clear in only 4 of these cases, but minimally clouded in 2, slightly clouded in 7, moderately clouded in 3, severely clouded in 1, and fluctuating in 1 case. Thus, clouding of consciousness appears to be the most reliable single sign in the diagnosis of organic confusional state, and one which should never be ignored.

Recognition of minor degrees of clouding or lowering of consciousness is not easy, but the patient is generally apathetic, slowed down, unable to express himself, and may perseverate; this state is possibly best called 'torpor'. Lowering of consciousness may be accompanied by dream-like changes, characterized by visual hallucinations often associated with fear. Thinking shows excessive displacement, condensation and misuse of symbols. Auditory hallucinations are usually elementary and rarely take the form of speech; orientation is inconsistent. Restriction of awareness to a few ideas and attitudes which dominate the patient's mind may also occur.
DIAGNOSIS OF SPECIFIC CONDITIONS

Cerebral Tumour

Tumour occurred in 4 cases; 3 were frontal in site, 2 meningiomas and a tuberculoma, while 1 was parietal. It should be borne in mind that the frontal lobes are silent areas and tumours in these areas may well present with psychiatric symptoms. A recent review of 7 cases of frontal meningioma presenting in this manner suggests that these tumours, which frequently present only psychiatric symptoms, are 4 times as common in psychiatric hospital patients as in general hospital patients, and may constitute nearly half of all tumours discovered at postmortem examination.

One patient (case 7) in the present series was diagnosed as 'presenile dementia'; the diagnosis of frontal tumour should be considered in the differential diagnosis of any rapidly progressive dementia. Neurotic symptoms, as in case 8, are comparatively rare as a mode of presentation, but the diagnosis of tumour should be considered whenever the psychopathology appears inadequate to account for the symptoms.

The third patient, case 16, was admitted with a floridly psychotic picture but slight clouding of consciousness was noted. Clouding may occur in the so-called 'oneiroid states' but is very rare and, in general, incompatible with a diagnosis of schizophrenia.

The woman who died from haemorrhage into a parietal tumour, case 14, was diagnosed as epileptic, but the investigations were not pressed with sufficient vigour; the slow progress of the disease over a period of 3½ years gave little clue as to the aetiology.

Liver Disease

In African patients stress has previously been laid on the frequency of a 'neuropsychiatric syndrome' associated with liver disease such as cirrhosis. The noisy, over-active psychotic episodes described were attributed to intoxication with protein derivatives, but hypoglycaemia may be a factor. In case 5 in the present series death was due to severe hypoglycaemia. The hypoglycaemia in this case was attributed to excessive alcohol intake, but hypoglycaemia may also occur in primary carcinoma of the liver, which may have contributed to the psychological symptoms found in cases 11 and 13, who died from this cause. Similarly, hypoglycaemia may have been a factor in the symptomatology of case 12 in whom histological examination of the liver suggested an acute viral hepatitis.

The mechanisms are not yet clear, but it seems possible that in patients with viral hepatitis, gluconeogenesis as well as glycogen synthesis may be seriously impaired. Large quantities of alcohol in a malnourished person may cause coma and death, possibly by increased utilization of glycogen stores and decreased gluconeogenesis.

In primary carcinoma of the liver the mechanism suggested is diversion of glucose to the tumour, because the tumour itself produces either an insulin-like substance or one that blocks the release of glucose from the liver. As this is a comparatively common tumour in African patients it is well worthy of consideration in obscure organic confusional states.

Hysteria

The young female patient who died of tuberculous meningitis, case 16, and the man who died from cerebral infarction, case 10, were both considered to be suffering from hysteria before admission.

A review of 112 patients diagnosed as suffering from hysteria at Queen Square resulted in an adequate follow-up in 85 cases. Of these 85, no fewer than 28 were subsequently found to have organic disease. The author concludes that hysteria is not a disease entity, but the adjective 'hysterical' may be used in reference to symptoms due to some underlying cause which may be organic.

Certainly, hysterical symptoms appearing for the first time in adult life should be regarded with suspicion.

Tuberculosis

Excluding the cases of tuberculous meningitis and tuberculoma, tuberculosis was an important factor in 4 deaths (cases 18, 19, 20 and 15). The association between tuberculosis and schizophrenia is well documented, and pulmonary tuberculosis has been found to be 2 or 3 times as common in schizophrenic patients as compared with nonschizophrenic patients in the same hospital. However, of the 4 patients in the present series had nonpulmonary tuberculosis, and this should be borne in mind in patients with clear chest X-rays.

Cerebral Syphilis

This was possibly a factor in the death of 2 patients (cases 3 and 22). Widespread use of penicillin has considerably modified the incidence and presentation of syphilitic psychosis in recent years. Nevertheless, in an analysis of 91 patients admitted to English hospitals over a 15-year period, it was shown that in 45 cases a specific incident precipitated hospital admission. Among these were 7 cases of outbursts of violence, 3 cases of indecent exposure and 5 cases of attempted suicide.

It is, therefore, important to bear in mind that while the onset of a syphilitic psychosis is more commonly insidious, a florid breakdown does not preclude it, as is illustrated by case 3.

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REFERENCES