RESEARCH

Organic mental disorders: a study among admitted patients of psychiatry department at teaching hospital

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Abstract

Background: Organic mental disorders (OMD) were referred to as the 'quiet epidemic' but ironically, OMD had been ignored by clinicians and researchers alike. Delirium is often unrecognised by medical professionals and understudied in paediatric patients. In the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV), the term OMD is no longer used. The International Statistical Classification of Diseases and Related Health Problems in its tenth edition (ICD-10) retains the term OMD.

Material and methods: Data of all patients admitted from June 2004 to May 2010 at Department of Psychiatry of Silchar Medical College Hospital, Silchar were collected by retrograde evaluation from the records and analysed using descriptive statistical methods.

Results: A total of 160 patients had OMD. Mean age was 34.2 years, majority were males and Hindu. Maximum number of patients was in the age group of 21-30 years. Maximum number of cases was of seizure disorder. Mean duration of stay was 6.3 days. Majority of the patients were discharged on advice. There was significant number of patients who were discharged on request.

Conclusion: Awareness of the prevalence of delirium should promote diligence of clinicians in recognising this disorder. Before diagnosing a mental or cognitive disorder, delirium should be ruled out.

Nath S, Roy D, Hazarika S, Das S, Nath K. Organic mental disorders: a study among admitted patients of psychiatry department at teaching hospital. Dysphrenia. 2012;3(1):40-47.

Keywords: Seizure disorder. Dementia. Delirium. Hospitalisation.

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Received on 17 September 2011. Accepted on 20 December 2011.

Introduction

Organic mental disorders (OMD) refer to psychological disturbances arising out of brain dysfunction.[1] In a medical editorial, organic mental disorders were referred to as the 'quiet epidemic.'[2] But ironically, OMD had been ignored by clinicians and researchers alike till very recently.[1] In the recent past, impetus for expansion and interest in this field is witnessed.[1]

In the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV),[3] the term OMD is no longer used, for it implies that 'non-organic' mental disorders do not have a biological component in their aetiopathogenesis. In DSM-IV, disorders formerly included under OMD (the revised third edition of DSM [DSM-III-R]),[4] have been grouped into 3 sections:

1. Delirium, Dementia and Amnestic and other cognitive disorders.

2. Mental disorders due to general medical conditions and

3. Substance-related disorders.

The other classificatory system in use, namely International Classification of Diseases in its tenth edition (ICD-10),[5] which is currently in use in our country, retains the term OMD.

However delirium is often unrecognised by medical professionals.[6] Estimates of this misdiagnosis have been between 40 to 60 percent depending on the setting studied.[6] Some of these studies have reported underrecognition of delirium in up to 60 percent of these subjects.[6] In one recent study, 228 participants (49.9 percent) among 457 terminally ill inpatients were screened.[6] The prevalence of delirium was 46.9 percent (n=107).[6] The overall detection rate by any member of the palliative team was 44.9 percent.[6] The detection rate of the hypoactive subtype was only 20.5 percent which was significantly lower than that of the hyperactive/mixed subtypes.[6] Delirium is underrecognised and underdiagnosed.[7] The fluctuating nature of delirium and the common presentation of hypoactive delirium contribute to this lack of recognition.[7]

Though delirium occurs at any age, there is a dearth of research in younger age groups such that it is unclear whether research findings from geriatric studies can be generalised to other age groups (e.g. regarding risk factors and outcomes).[8] Symptom profile appears similar across age groups[9] but delirium is understudied in paediatric patients.[8] Epidemiological studies have focused on elderly hospitalised populations with far less research in younger age groups or the general population.[8] Studies in younger age groups are needed to disentangle confounds from ageing.[8]

Aims and objectives: To study the sociodemographic variables (age, gender and religion) as well as the clinical variables (number of patients with various OMD, duration of stay at hospital and modes of discharge) of the patients diagnosed with OMD.

Methods and materials

Place of study: Department of Psychiatry at a teaching hospital namely Silchar Medical College Hospital, Silchar.

Sample of study: All patients admitted from June 2004 to May 2010.

Data were collected by retrograde evaluation from the records and analysed using descriptive statistical methods. Study was approved by the institutional ethical review board.

Results

Total patients having OMD was 160.

Sociodemographic variables: Mean age was 34.2 years, majority were males and Hindu (table). Maximum number of patients was in the age group of 21-30 years (figure 1).

Table. Sociodemographic variables
Age (in years)
Mean: 34.2 ± 17.6, 95% CI 31.4-36.9
Maximum: 82
Minimum: 1.5
Gender, number (%)
Male: 109 (68.1)
Female: 51 (31.9)
Religion, number (%)
Hindu: 102 (63.8)
Islam: 57 (35.6)
Christian: 1 (0.6)

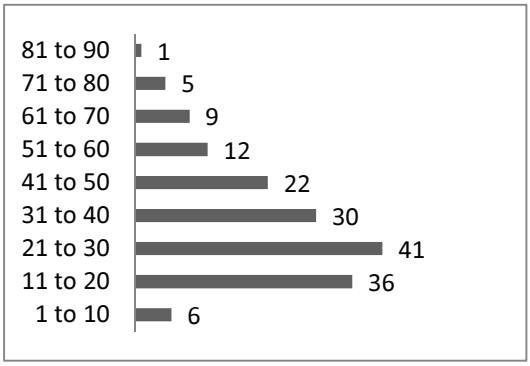

Figure 1 Age groups (in years).

Clinical variables: Seizure disorder represented maximum number of cases (figure 2). Mean duration of stay was 6.3 days (±6.4, 95% CI 5.3-7.2). Though majority of the patients were discharged on advice, there was significant number of patients who were discharged on request (figure 3).

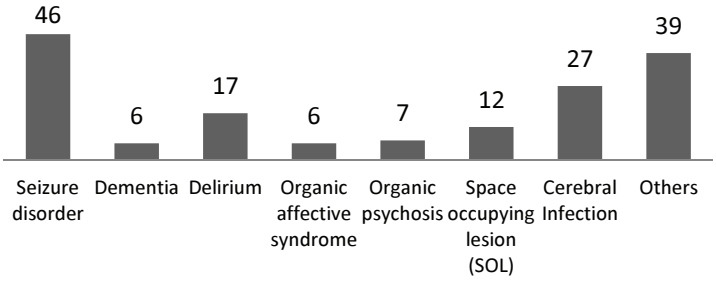

Figure 2 Number of patients with various organic mental disorders.

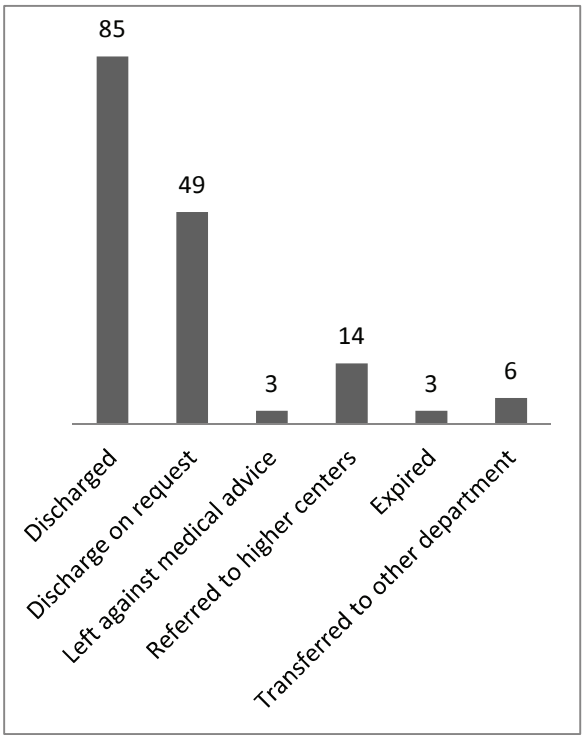

Figure 3 Modes of discharge.

Discussion

Sociodemographic variables

Age: In our study, maximum number of patients was in age group 21-30 years, followed by 11-20 and least in age group 81-90 years. This can be explained on the basis of active age group being affected in work performance and elderly attributing some symptoms to 'normal' ageing.

The elderly is the demographic group most at risk for cognitive disorders.[10] The demographic imperative with regard to cognitive disorders is clear.[10] The population is rapidly ageing and age is the single largest risk factor for developing dementia.[10] With the ageing of the population, the prevalence of dementia is rapidly increasing.[11] Age is the leading risk factor for dementia and prevalence doubles about every five years from about five to eight percent at age 65 to 70 to 15 to 20 percent at age 75 to 80 and up to 40 to 50 percent over age 85.[11] The leading risk factor for dementia is older age.[11] In our country, six percent of the population is more than 60 years old and it is predicted that this figure would reach 12% by the year 2025.[12]

Delirium is a common disorder in elderly patients with most incidence and prevalence rates reported in the elderly.[6] In community studies one percent of the elderly population aged 55 or more have delirium (13 percent in the 85 and older group in the community).[6] Older age was the only significant demographic risk variable of delirium in psychiatric inpatients.[6] Delirium is more common in older patients especially those with underlying cognitive impairment.[7] Delirium occurs in all age groups but those at age extremes, with pre-existing cognitive impairment, cancer and the critically ill have especially high rates.[8] Amongst the elderly, those above 65 years of age, the prevalence rate of delirium ranges from 30 to 50%.[13]

Gender: Number of male patients in our study was more than twice that of female patients.

Demographic characteristics like age 65 and older and male sex are predisposing factors for delirium.[14] Women form the majority of demented persons over the age of 80 years in institutions but this may be due to the influence of sociodemographic factors like longer survival period for women and more women than men living in an institution.[1] However Jorm *et al*.[15] in a meta analysis of studies on the prevalence of Alzheimer's disease, found age adjusted rates for women to be significantly higher than that for men. The incidence data from Hagnell *et al*.[16] and Rorsman *et al*.[17] suggests a higher rate in women in the case of Alzheimer's disease. An epidemiological study noted that the increased risk of Alzheimer's disease among the female subjects was more pronounced in the young age group (<65 years).[18] Female gender is a risk factor for Alzheimer's disease even independent of age.[11]

The syndrome originally described by Fisher & Adams[19] coined the term transient global amnesia (TGA). It is a disease of the late middle or old age.[1] Males appear to outnumber females.[1] TGA most commonly occurs in the middle-aged or elderly, more frequently in men and it results in a period of amnesia lasting several hours.[20] Quinette *et al*.[21] reviewed the findings in 1353 patients reported in the clinical literature since 1956 and their own data from 142 patients, seen between 1994 and 2004. In general, the findings were consistent across the two sources. There was no sex bias and the vast majority of attacks occured between the ages of 50 and 80 (mean=60.3±9.6).

Mood disorders due to general medical condition with depressive features appear to affect men and women equally in contrast to major depressive disorder which predominates in women.[7]

Religion: Our study sample consisted of 102 (63.75%) Hindu, 57 (35.625%) Islam and one (0.625%) Christian.

Clinical variables

Number of patients with various OMD: Maximum number of cases of our study was in the seizure disorder category because of their dramatic presentation and because of their frequent association with behavioural disorder ranging from anxiety, depression to frank psychosis.

It is estimated that up to 40 percent of patients with temporal lobe epilepsy experience psychosis.[7] The term transient epileptic amnesia was coined by Kapur[22] and it refers to the minority of patients with TGA in whom epilepsy appears to be the underlying cause of the syndrome.[23] Surgical treatment to the temporal lobes for epilepsy can result in profound amnesia if there is bilateral involvement.[20]

The number of dementia cases in our study was only six. This could be due to its insidious onset, slow deterioration which may not be acutely disturbing to the family.

Dementia, already a major health concern in the West, may soon become so in our country too.[1] In our country, two small selective age related surveys from South India have reported prevalence rates of dementia comparable to that seen in the West.[24,25] In a related study, 31 subjects out of 150 patients, who sought psychiatric help, were diagnosed to have dementia.[26]

Confabulation is widely believed to be particularly associated with the Korsakoff syndrome but this is

incorrect.[20] Spontaneous confabulation arises in confusional states and in frontal lobe disease.[27] On the other hand, fleeting intrusion errors or distortions ('momentary confabulation') are also seen in Alzheimer dementia and other clinical amnestic syndromes.[20] The notion of 'confabulation' or 'false memory' has now been extended to a variety of other disorders including delusional memory, confabulation in schizophrenia, false confessions, apparently false memories for child sexual abuse, pseudologia fantastica and dissociative identity disorder.[20] Whilst each of these can potentially be accounted for in terms of a general model of memory and executive function, provided that the social context and some notion of 'self' is incorporated, there are likely to be differing mechanisms which give rise to these different types of false memory.[28]

Two types of specific vascular lesions can particularly affect memory, as opposed to general cognitive functioning, namely thalamic infarction and subarachnoid haemorrhage.[20] Severe head injury can produce a persistent amnesia which may or may not be associated with generalised cognitive impairment.[20] There is increasing evidence that focal lesions in the frontal lobes can also produce severe memory impairment on aspects of anterograde and retrograde memory.[28] Since delirium is more common in patients with dementia, the cognitive and bahavioural changes associated with delirium can mistakenly be attributed to the dementia.[7]

The number of delirium cases in this study was 17, the causes being infections, metabolic, traumatic, drug induced etc.

Delirium, referred to as the 'everyman's psychosis'[29] (potentially anybody can develop delirium), is one of the most commonly encountered OMD in clinical practice.[1] The prevalence of delirium at hospital admission ranges from 14 to 24 percent and the incidence of delirium arising during hospitalisation ranges from six to 56 percent.[6] Furthermore prevalence increases with multiple factors such as age, medication use and comorbidities.[6] Delirium is a common diagnosis in the acute care setting with hospital admission prevalence of 14 to 24 percent.[7] Over 50 percent of postsurgical patients experience delirium.[7] Severe hypoxia can give rise to an amnestic syndrome following carbon monoxide poisoning, cardiac and respiratory arrests or suicide attempts by hanging or poisoning with the exhaust gases from a car.[20] Drug overdoses may precipitate prolonged unconsciousness and cerebral hypoxia and this quite commonly occurs in heroin abusers.[20]

In one study of prevalence of delirium in psychiatric inpatients, the overall incidence of delirium was 14.6 percent.[6] Delirium was most common among patients with schizophrenia and bipolar disorder; patients with bipolar disorder had the highest incidence (35.5 percent).[6] Only 48 percent of delirious patients were actually recognised as having delirium at the time it occured.[6] Antiparkinsonian medications were the only medications significantly associated with delirium; lithium was not an independent risk factor.[6]

We found six patients with organic affective syndrome.

In general, mood disorders due to general medical condition more commonly present with depressive features and less frequently with manic features.[7] Manic illness after head injury is much less common than depression.[30] A study identified 30 cases of organic mania over an 11 month period, giving a prevalence rate of 4.67% of all patients with mania.[31] In India, neurosyphilis still remains an important cause of organic affective disorder, as attested to by a case report.[32] Organic manic syndromes seem to be rare but Krauthammer & Klerman[33] have listed many causes which can lead to secondary mania.

Perhaps 25 per cent of patients meet the DSM-IIIR criteria for major depression one month after injury.[34] A similar rate of depression at one year is described in several studies though perhaps the more conservative figure of 14 per cent[35] is more realistic.[30] Over the first year many who are initially depressed recover, to be replaced by those previously not depressed who become depressed.[30]

The risk of suicide is increased following head injury occuring in about one per cent of cases over the first 15 years or so after injury.[36] This represents about a three-fold increase in suicide rate compared with the age matched population rates.[30] At least some of the increased risk is probably because those at increased risk of head injury also have a greater risk of suicide.[30] Rates of attempted suicide are increased after head injury.[30]

Organic anxiety syndrome is usually caused by endocrine disorders such as thyrotoxicosis, pheochromocytoma, hypoglycemic attacks and hypercortisolism.[1] It can also occur as the only or prominent feature of withdrawal from substances such as alcohol or barbiturates, caffeinism and abuse of cocaine and amphetamines.[1]

Symptoms of anxiety are common after head injury[37] particularly in those who have suffered mild injury.[30] Generalised anxiety disorder occurs in perhaps ten to 15 per cent of cases.[38] Anxiety symptoms, particularly in those with a mild head injury, may develop over the weeks and months following a head injury.[30] It is then more likely to be associated with depression,

postconcussion syndrome and with posttraumatic stress disorder.[30] Phobic avoidance is seen for example when there is travel anxiety following a road traffic accident.[30] Obsessive-compulsive disorder is recognised sequelae of head injury.[30]

There were seven patients with organic psychosis in our study.

The most common causes of organic delusional syndrome are various substances of abuse such as amphetamine, cannabis, alcohol and lysergic acid diethylamide.[1] Occasionally certain therapeutic drugs such as indomethacin, steroids and levodopa can cause psychiatric disturbance resembling paranoid psychosis.[1] Other common aetiologic factors include temporal lobe epilepsy, endocrinopathies and Huntington's chorea.[1]

Davison & Bagley, almost 40 years ago,[39] estimated that patients after a head injury had a two- to three-fold increased risk of developing a schizophrenia-like psychosis compared with the general population. Davison & Bagley,[39] in their extensive review, concluded that illnesses virtually indistinguishable phenomenologically from schizophrenia may be associated with brain lesions. DSM-IV is also in agreement that it is sometimes phenomenologically difficult to distinguish these conditions from schizophrenia, mood disorders etc.

Any apparent association between head injury and schizophrenia might be explained by the fact that the period from late teens to early 20s is both the period of greatest risk of head injuries and the time when schizophrenia tends to start.[30] In addition people at risk of schizophrenia may also be at risk of suffering a head injury ('reverse causality').[40] Two large studies from Denmark[41] and Sweden,[42] based on linkage of nationwide hospital case registres, have shown that there appears to be no elevated risk of being admitted to hospital with a diagnosis of schizophrenia in those who have previously suffered a head injury. However the second study did suggest that other nonaffective psychoses, not diagnosed as schizophrenia, might be more common after a head injury. This fits with clinical experience; the patients whose psychosis seems most convincingly related to their head injury are those with more severe injuries.[30] They would be diagnosed as suffering an organic psychosis, not schizophrenia.[30] Paranoid psychoses may emerge after brain injury.[30] Persecutory ideas or delusions of reference are a fairly common cause of aggression and may be hidden by communication difficulties.[30]

Of delusional misidentifications the one that is most pathognomonic of brain injury and which is also associated with other causes of organic mental disorder is reduplicative paramnesia.[30] The term reduplicative paramnesia covers a range of phenomena which involve duplication of events or places.[30] Pick,[43] who introduced the term, used it to describe a patient who believed she had visited a duplicate hospital. Delusional misidentifications of person may also be observed following brain injury, often alongside a reduplicative paramnesia.[30] Delusional misidentification syndromes can best be understood as the result of an interaction between organic brain disease and psychological disorder.[44] Lesions of the right hemisphere, often in combination with frontal injury or more diffuse evidence of brain disease, are particularly associated with delusional misidentification.[30]

Hallucinations can occur in any modality, though in substance-induced cases (except alcohol), visual hallucinations dominate while in alcoholic hallucinosis the modality is invariably auditory.[1] The most common aetiologic factors are prolonged use of alcohol and hallucinogens.[1] Visual hallucinations are common in later stage Parkinson's disease and may occur in up to 40 percent of patients.[7] Psychosis occuring in the earlier stages of Parkinson's disease is less common but when it does occur is likely due to the medications used to treat the Parkinson's disease including anticholinergic medications, L-Dopa and dopamine agonists.[7]

A case for a new category of organic catatonic syndrome has been made in the literature[45] and it has been included in the ICD-10 classification system. Organic catatonic disorder has been reported in a wide variety of general medical conditions such as enteric fever,[46] Wilson's disease,[47] human immunodeficiency virus (HIV) encephalopathy, encephalitis and renal failure.[48]

In our study, number of cases due to cerebral infection and its squelae was 27. Primary encephalitis, brain abscess, brain metastasis and personality change as a long term sequlae to encephalitis were included under this category.

Herpes encephalitis can give rise to a particularly severe form of amnestic syndrome.[49] Other infections, such as tuberculous meningitis or HIV, may on occasion give rise to an amnestic syndrome.[20]

Delirium is a common syndrome in terminal cancer patients.[6] Terminal cancer patients commonly suffer from severe pain, are on pain medications and may have infections leading to delirium.[6] In one recent study, 228 participants (49.9 percent) among 457 terminally ill inpatients were screened.[6] The prevalence of delirium was 46.9 percent (n=107).[6] Of these, the most common subtype was hypoactive (68.2 percent).[6] Deep midline cerebral tumours can give rise to an amnestic syndrome and this may be exacerbated by surgical or irradiation treatment for pituitary tumours.[20]

Majority of the features of organic personality syndrome are usually found in association with frontal lobe damage (frontal lobe syndrome).[1] This syndrome is usually due to structural damage to the brain.[1] The common causes are head injury, cerebrovascular accidents and neoplasms.[1] Multiple sclerosis, temporal lobe epilepsy and Huntington's chorea are sometimes associated with this syndrome.[1]

A few rare cases like tuberous sclerosis, Machiafava Bignamii, multiple sclerosis were also reported in our study.

Mood syndromes are particularly likely to emerge in brain disorders such as Parkinson's disease, multiple sclerosis and stroke.[10] Neurological disorders such as multiple sclerosis and stroke are associated with sexual dysfunction.[7] Affective symptoms/syndromes are often present in Wilson's disease,[50] Huntington's chorea,[51] Parkinson's disease, multiple sclerosis[52] and following closed head injury.[53] Elderly individuals with health issues (e.g. pain syndromes and cardiopulmonary disorders) and younger individuals with substance use disorders are likely at heightened risk for development of sleep disorder due to a general medical condition and substance-induced sleep disorder.[7]

Duration of stay at hospital: Studies among elderly emergency room subjects have reported delirium prevalence rates of five to ten percent.[6] At the time of admission to medical wards, between 15 and 20 percent of older patients meet criteria for delirium-prevalent cases.[6] Most of these studies report a subsequent incidence during hospitalisation (among patients free of delirium at admission) of five to ten percent although higher rates (20 to 30 percent) have been reported.[6] Delirium has been reported in ten to 15 percent of general surgical patients, 30 percent of open heart surgery patients and over 50 percent of patients treated for hip fractures.[6] Delirium occurs in 70 to 87 percent of those in intensive care units and in up to 83 percent of all patients at the end of life cares.[6] Sixty percent of patients in nursing homes or postacute care settings have delirium.[6]

The hospital stays of patients with delirium were 62.1 percent longer than those of patients without delirium.[6] In a primary care population, the prevalence rates of dementia are higher than the general population and higher still in the general hospital setting.[11] In the skilled nursing facility population, rates are closer to 50 to 60 percent.[11] Delirium is one of the most common complications of hospital admissions in older patients and occurs in over 50 percent of postsurgical patients.[7]

It is estimated that around ten to 15 per cent of general hospital patients have delirium upon admission with a further ten to 40 per cent developing delirium during hospitalisation.[8] Overall frequency is estimated at 11-42 per cent[54] with the clinical rule of thumb that one in five general hospital inpatients experience delirium at some time during hospitalisation.[8]

Delirium episodes are associated with elevated morbidity, longer hospital stays, greater costs of care and higher frequency of complications.[55] The prevalence among medical and surgical inpatients is estimated to be between five and 15%.[56] The incidence in the surgical intensive care units varies from 18 to 30% and in coronary care units from two to 20%.[57] About 15-20% of medical/surgical inpatients referred for psychiatric consultation receive a diagnosis of organic brain syndrome.[58]

Modes of discharge: The mortality rate of inpatients with delirium (77.6 percent) was higher than those without delirium (50.9 percent).[6] In general, studies suggest that the increased mortality risk associated with delirium was maintained at 12, 24, 36 months with a risk ratio of at least two at all time points.[6] Critical review of methodology suggests that delirium mostly carries an associated increased mortality risk during the year following an episode.[8] The mortality outcome at six months postdischarge for delirious patients not identified by the emergency room treating team was three times higher than the delirious patients who were identified and treated in the emergency room.[6] The mortality rate was similar for the treated delirious patients as the nondelirious patients.[6]

Conclusions

Although much information can now be obtained from internet searches, textbooks are still needed to provide the comprehensive account of established knowledge into which new information can be fitted and against which recent findings can be evaluated.[59]

Awareness of the prevalence of delirium associated with acute medical illness or drug intoxication or withdrawal should promote diligence on the part of clinicians in recognising this disorder.[7] Ruling out delirium should occur before the diagnosis of a mental or cognitive disorder apart from delirium due to a general medical condition or substance is made.[7]

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