Non-convulsive status epilepticus in elderly individuals: report of four representative cases

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Abstract

Objective: the purpose of this article is to describe the clinical and electroencephalographic features of four elderly patients diagnosed as having non-convulsive status epilepticus.

Methods: four females ranging in age from 74 to 81 years were admitted to our hospital because of confusion and altered mental state. We recognised four distinctive entities: i) Absence status in a patient with pre-existing idiopathic generalised epilepsy; ii) De novo absence status of late onset precipitated by benzodiazepine withdrawal; iii) Complex partial status epilepticus in a patient with a focal brain lesion; iv) Subtle generalised status epilepticus in a comatose subject representing the final phase of convulsive status epilepticus.

Conclusions: the identification of non-convulsive status epilepticus may be particularly arduous in elderly subjects and, therefore, a high level of suspicion is essential to obtain an early diagnosis. An urgent electroencephalogram is considered as the method of choice in the diagnostic evaluation of non-convulsive status epilepticus. Finally, non-convulsive status epilepticus should be included among the causes of coma in older individuals.

Keywords: non-convulsive status epilepticus, elderly patients, absence status epilepticus, complex partial status epilepticus, subtle generalised status epilepticus, electroencephalogram

Introduction

Non-convulsive status epilepticus (NCSE) is an epileptic condition lasting >30 minutes in which continuous or recurrent seizure activity on the electroencephalogram (EEG) is responsible for diverse clinical symptoms including impairment of consciousness, abnormal behaviour or perception disturbances [1].

We report four elderly patients presenting with varying degrees of altered consciousness whose clinical and electrophysiological features represent some of the more common situations of NCSE in older individuals.

Clinical cases

Patient 1

A 74-year old woman was admitted to our hospital because of slowness in mental activity. She had a known history of generalised tonic-clonic (GTCS) and absence seizures since the age of 30 years. On examination, she was confused and disoriented to person, time and place. Automatisms or myoclonic jerks were not observed. An EEG showed nearly continuous generalised spike-and-wave and polyspike-and-wave discharges (Figure 1). The status was rapidly terminated by intravenous infusion of 10 mg of diazepam. Over the next 24 hours, despite treatment with valproic acid, the episodes of confusion recurred. Subsequently, satisfactory control was achieved with the combination of valproic acid and phenobarbital.

Patient 2

A detailed description of the clinical and electrophysiological data of this 79-year-old woman can be found elsewhere [2]. She was brought to our hospital because of abnormal behaviour. There was no history of epilepsy. On examination, she was confused and disoriented. Laboratory tests and a CT scan of the brain were normal. An EEG showed irregular rhythmic generalised 2.0–2.5 Hz sharp-and-slow waves complexes that ceased immediately after the intravenous injection of 10 mg of diazepam. Afterwards, her daughter

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indicated that her mother had been taking long-term lorazepam that was discontinued acutely without medical control. [See Appendix 1, Figure 3 at http://www.ageing.oupjournals.org]

Patient 3
An 81-year-old woman presented with recurrent episodes of aphasia and obtundation one of which culminated in a GTCS. At admission, the patient was confused and her level of consciousness was fluctuating. An EEG showed focal seizure activity arising from the right parieto-temporal region and spreading rapidly to both hemispheres. The epileptiform activity was promptly suppressed by intravenous diazepam with normalisation of her mental status. Magnetic resonance imaging of the brain disclosed a meningioma localised in the right parietal lobe. She was discharged with a normal neurological examination on maintenance doses of phenytoin. [See Appendix 1, Figure 4 at http://www.ageing.oupjournals.org]

Patient 4
An 80-year-old woman was brought to our institution because of severe impairment of consciousness. During the hours before admission she had suffered from recurrent GTCS. There were no signs of cardiac arrest, and on examination she was comatose with bilateral Babinsky responses and subtle clonic twitching in the facial and cervical muscles. Laboratory tests and a CT scan of the brain were normal. Forty-eight hours later, an EEG showed continuous and synchronous high voltage spike-and-wave complexes intermixed with short periods of flattening (Figure 2). At that time, convulsive movements were absent. Although generalised epileptiform activity disappeared after the injection of 10 mg of diazepam, focal discharges remained over the left centro-parietal area. The clinical state of the patient was unmodified despite aggressive antiepileptic therapy and, finally, she died.

Discussion
The present study describes the spectrum of the clinical and electroencephalographic features of NCSE in the elderly. We recognised four distinctive types: i) Absence status (AS) in pre-existing idiopathic generalised epilepsy (patient 1); ii) De novo AS of late onset precipitated by benzodiazepine withdrawal (patient 2); iii) Complex partial status epilepticus (CPSE) secondary to focal brain lesion (patient 3) and; iv) Subtle generalised status epilepticus representing the final phase of convulsive status epilepticus (patient 4).

Typical AS occurs in adults with syndromes of idiopathic generalised epilepsy [3]. Although AS should be easy to diagnose on clinical grounds, it is frequently unrecognised
and misdiagnosed as CPSE. The differentiation has important therapeutic consequences since in AS the antiepileptic therapy can be undertaken gently, but in CPSE a rapid cessation is required because prolonged episodes may be accompanied by neurological deficits.

Episodes of generalised NCSE in older subjects on chronic treatment with psychotropic medication have been well documented [2, 4–7]. The administration of intravenous diazepam or clonazepam usually stopped the episode of status rapidly, and the majority of authors considered it unnecessary to maintain chronic antiepileptic treatment. The prognosis of de novo AS is generally favourable and recurrences are rare.

Elderly people have an increased incidence of acute symptomatic partial status epilepticus [8]. It is important to highlight the possibility that some patients with degenerative disease or metabolic disorders may initially be misdiagnosed as having CPSE [9, 10]. This fact stresses the importance of including strict criteria for its diagnosis. Therefore, response to treatment (clinical and electrical) should be equally considered.

Our patient 4 had subtle clinical signs of seizure activity following convulsive status epilepticus [11–14]. This situation has been termed subtle generalised status epilepticus, and it may occur when status epilepticus develops in a patient with an underlying epileptic or non-epileptic encephalopathy [13].

The unexpected character of diagnosis and fatal outcome are in accordance with the findings described previously [13, 14].

To summarise, NCSE should be included among the causes of acute confusional state in elderly individuals. A high level of suspicion is essential to obtain an early diagnosis and, therefore, an urgent EEG should be promptly considered. The presence of psychotropic drug abuse, pre-existing epilepsy or focal brain lesions should be investigated. Finally, NCSE should also be considered as a possible cause of coma in elderly subjects. [For further information, see Appendix 2 at http://www.ageing.oupjournals.org.]

**Key points**

- The diagnosis of non-convulsive status epilepticus (NCSE) may be particularly difficult in older people.
- A high level of suspicion is essential to obtain an early diagnosis.
- An urgent EEG with administration of intravenous benzodiazepines is the method of choice in the diagnostic evaluation of NCSE.
- The presence of psychotropic drug abuse, pre-existing epilepsy or focal brain lesions should be investigated.
- NCSE may be a cause of coma in elderly subjects.

![Figure 2. (Left) EEG of patient 4 (comatose) revealing continuous ongoing seizure activity constituted by synchronous high voltage epileptiform discharges with brief periods of flattening. (Right) Focal sharp waves localised in the left centro-parietal area and vertex after the injection of 10 mg of diazepam.](image-url)
Small bowel obstruction from a dislodged feeding tube

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Abstract

Elderly nursing home patients may suffer from inadequate oral nutritional intake for a variety of reasons. In some of them, nutritional status cannot be maintained without the use of enteral feeding. Nasogastric tube feeding is associated with significant patient discomfort, and may lead to significant complications. Thus, in those who require long-term enteral tube feeding, a gastrostomy tube may be necessary. Although surgical insertion may occasionally be required, percutaneous insertion with upper endoscopy assistance is usually safe and feasible. This case represents an unusual complication of such a gastrostomy tube, which draws attention to the need for appropriate care of these tubes.

Keywords: enteral feeding, nasogastric tube feeding, gastrostomy tube

References


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