Case report

Transient amnesia: epileptic or global? A differential diagnosis with significant implications for management

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Case report

A 58-year-old lady presented to her local district general hospital with confusion. She was unable to give a history of what had happened to her, but her husband reported that she had appeared distressed and was repeatedly asking the same question. She could not remember where she had been on holiday the week before, or whether her mother was alive or dead. The episode settled spontaneously after ~6 h. The patient had no subsequent recollection of this period. She was otherwise in good health, with a history of only infrequent migraine. She admitted being under recent stress preparing for her son’s wedding. Her general and neurological examinations at presentation were normal. Computed tomography brain scan was normal. A provisional diagnosis of transient ischaemic attack was made by the local stroke coordinator, but the managing clinician was uncertain as to whether the episode may have been an epileptic seizure, so arrangements were made for an outpatient electroencephalography (EEG) a few weeks later. The patient was advised not to drive in the meantime.

During the EEG recording, a further similar episode occurred: the patient was distressed, did not know where she was or how she had got there, and repeatedly asked the same question. The EEG coincident with this episode was normal throughout. Confusion lasted in all ~6 h, without subsequent recall. The patient later admitted having been very anxious about attending the EEG.

The patient was subsequently referred to the neurology clinic where, in addition to the above clinical history, collateral history from the husband elicited the fact that the first episode occurred shortly after sexual intercourse. The history was entirely consistent with proposed diagnostic criteria for transient global amnesia (TGA) (Table 1).

The patient was informed that the episodes were benign, unlikely to recur, required no further investigation or treatment and that there was no restriction to driving imposed by the Driver and Vehicle Licensing Agency (DVLA) guidelines.

Discussion

TGA is a syndrome of abrupt and temporary (<24 h) disruption of anterograde memory, first described as such by Fisher and Adams in 1964. Patients typically present with repetition of the same questions or statements. There is neither clouding of consciousness nor focal neurological signs. Full recovery is the norm, but without memory of the amnesic period. Recurrence is rare (~3% per annum). Recognized triggers include physical or emotional stressors, such as strenuous physical exertion (including sexual activity), swimming in cold water, medical procedures, emotional stress and pain. Pathophysiology is uncertain, but probably involves transient hypoperfusion in memory-eloquent brain structures, the medial temporal lobe and hippocampus. There is also an increased incidence of jugular vein valve insufficiency in TGA patients. Management of TGA generally requires reassurance only.

Transient epileptic amnesia (TEA) is a form of epilepsy, probably first described by John Hughlings Jackson in the 19th century. Compared to TGA, episodes of TEA are typically briefer (<1 h).
commonly occur on waking, have a high recurrence rate and may be accompanied by other features suggestive of epilepsy such as automatisms or olfactory hallucinations (Table 2). Many TEA patients report interictal memory problems, with evidence of accelerated long-term forgetting and remote memory impairment. EEG shows seizure activity during amnesic episodes. Abnormalities may be found in interictal EEG recordings in about one third of TEA patients, although sometimes sleep-deprived EEG may be required. Management may require not only antiepileptic drug therapy but also advice on appropriate lifestyle modifications, including reference to DVLA restrictions on driving.8

The acute and transient nature of TGA and TEA means that most cases that come to medical attention are seen initially by general practitioners or district general hospital physicians who may be unfamiliar with these conditions. Consequently, misdiagnosis of TGA as transient ischaemic attack or epilepsy may occur, resulting in inappropriate investigation, medication, referral and advice, including recommendations not to drive.9 There is no restriction for Group I drivers (cars, motorcycles) after an episode of TGA according to current DVLA guidelines.2

Although ‘absence of epileptic features’ is one of the proposed diagnostic criteria for TGA,1 the short-lived nature of TGA means that performing an EEG during an amnesic episode is usually impossible, except on fortuitous occasions as in the reported patient. Only one prior report has been identified in which three patients had EEG recording during episodes of TGA: two were said to have paroxysmal abnormalities.10 However, this report predated the current widespread neurological recognition of TEA by many years, and it is uncertain whether the group examined may have been aetologically heterogeneous.

In conclusion, the differential diagnosis of transient amnesia may be challenging. Differentiation of TGA and TEA requires careful history taking, especially from a reliable collateral source. TGA is benign condition with a good prognosis, and generally only reassurance is required. In contrast, TEA is liable to recurrent episodes, may require drug treatment, and, unlike TGA, patients are subject to driving restrictions in compliance with DVLA guidelines.

<table>
<thead>
<tr>
<th>Clinical Feature</th>
<th>Transient global amnesia</th>
<th>Transient epileptic amnesia</th>
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</thead>
<tbody>
<tr>
<td>Anterograde amnesia during attack</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Impaired consciousness or cognition (excluding amnesia)</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Focal neurological deficits</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Aura, automatism</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Symptom duration</td>
<td>&lt;24 h</td>
<td>Usually &lt;1 h</td>
</tr>
<tr>
<td>Recurrence rate</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Triggers</td>
<td>Emotional stress or physical exertion</td>
<td>Often occurs on waking</td>
</tr>
<tr>
<td>Responds to antiepileptic drugs</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>EEG abnormalities during attack</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Interictal memory problems</td>
<td>No</td>
<td>Yes; Accelerated long-term forgetting, remote memory impairment</td>
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Conflict of interest: None declared.

References


