CASE REPORT

Confused after spirometry: a unifying diagnosis

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SUMMARY

A 67-year-old woman was diagnosed with transient global amnesia having presented with an abrupt and temporary disruption in her memory function. Her symptom onset came shortly after a visit to her general practitioner where she had performed bedside spirometry. Following symptom resolution, she was discharged home with reassurance.

based on fulfilment of widely accepted clinical diagnostic criteria for this condition.¹

INVESTIGATIONS

Routine blood tests including full blood count, urea and electrolytes, liver function tests and C reactive protein were all within normal limits. MRI of the brain was normal. EEG was not undertaken, as there were no clinical indicators of seizure.

BACKGROUND

Having been described following a number of different medical procedures transient global amnesia has not, to the best of our knowledge, been reported following bedside spirometry testing. The association of this condition with recognised triggers, including medical procedures, adds to our understanding of the aetiopathogenesis of this unusual presentation.

CASE PRESENTATION

A previously healthy 67-year-old right-handed woman was brought to hospital by her family having been found 'confused' at home.

Earlier in the afternoon, she had attended her general practice to undergo spirometry testing. This test had been organised to investigate shortness of breath occurring over the preceding month. Having performed the test, with measurement of FEV1 and FVC prebronchodilator and postbronchodilator therapy, she returned home.

One hour later, she reported of the gradual onset of a headache associated with nausea. Following this, she became 'confused'. Her daughter, a witness to this episode, gave a clear account of the patient's behaviour. Despite being alert and oriented to person, she could not remember events from earlier in the day and had no recollection of her journey home from the general practitioner (GP). Despite repeated clarification of these recent events, she appeared to forget this new information shortly after registering it. She would then repetitively question her daughter 'what is going on?', 'what am I doing?'. There was no loss of autobiographical memory, impairment of conscious level or any suggestion of motor automatism. She was taken to hospital, but her symptoms had settled by the time she was seen by a neurologist. However, an amnesic gap of around 3 hours remained. She denied any prior such episodes and was otherwise in good health with no history of migraine.

Bedside cognitive examination was entirely normal: on the Montreal Cognitive Assessment, she scored 30/30. The remainder of the neurological examination was unremarkable. A clinical diagnosis of transient global amnesia was made,

DIFFERENTIAL DIAGNOSIS

A number of other conditions can present with acute memory impairment which may resemble transient global amnesia but have distinguishing clinical features. These include transient epileptic amnesia, psychogenic amnesia and confusional states associated with toxic-metabolic encephalopathy.

In transient epileptic amnesia, symptoms arise secondary to epileptiform activity arising in the medial temporal lobes, patients are more likely to present with shorter, more frequent events which typically occur soon after waking. Diagnosis may be supported by the presence of other clinical features of epilepsy such as automatisms.² Patients with psychogenic or dissociative amnesia will often report loss of autobiographical memory and personal identity, helping to distinguish this from transient global amnesia in which this is preserved.³

Other conditions which might present with acute impairments in memory include herpes simplex encephalitis, hypoglycaemia, head injury, drug and alcohol withdrawal alongside other causes of a toxic-metabolic encephalopathy. In contrast to the selective problems affecting memory seen in transient global amnesia, these conditions present with more global impairment in cognition, related to impairments in consciousness.

OUTCOME AND FOLLOW-UP

The patient was discharged home following 24 hours of observation. Follow-up in the neurology outpatient clinic at 1-month revealed no recurrence of her symptoms, and she was subsequently discharged to the care of her GP.

DISCUSSION

The syndrome of transient global amnesia is characterised by abrupt and temporary disruption of memory function, with anterograde amnesia characterised by repetitive questioning. Proposed diagnostic criteria exist, which were fulfilled in this case. These criteria include a reliable witness account, clear-cut anterograde amnesia during the attack and resolution of within 24 hours. The presence of epileptic features, accompanying focal

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neurological deficit or loss of personal identity are excluding features and suggest an alternative pathology.¹

Transient global amnesia has been reported following a number of medical procedures including coronary angiography,⁴ endoscopy^{5 6} and formal pulmonary function tests,⁷ but to the best of our knowledge no cases following bedside spirometry testing have been reported hitherto.

The aetiopathogenesis of transient global amnesia remains uncertain with several suggested theories. One theory implicates cerebral venous congestion secondary to a rise in venous pressure, as may occur following a Valsalva manoeuvre.⁸ Such a mechanism might explain the onset of symptoms following recognised precipitants such as physical exercise, sexual activity

and immersion in cold water and also a procedure such as bedside spirometry testing, the performance of which requires breath holding.

Patients with TGA frequently present to general physicians who may be unfamiliar with this uncommon disorder.⁹ Recognition of the diagnosis and appreciation of potential triggers, including medical procedures, is important to avoid inappropriate investigation and management. Transient global amnesia is a benign disorder which does not require further investigation or management, other than explanation and patient reassurance.

Contributors JCW was responsible for drafting manuscript and subsequent revisions. AJL was responsible for critical appraisal and review of the final draft.

Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

Learning points

- ▶ Transient global amnesia is an easily recognised syndrome which may be diagnosed clinically without recourse to multiple investigations and which has a benign prognosis.
- ▶ Having been reported following a number of different medical procedures to the best of our knowledge this is the first report following bedside spirometry testing.
- ▶ Bedside spirometry is commonly performed in a number of different clinical settings. The association of this procedure with transient global amnesia is an important learning point for doctors who may be unfamiliar with this unusual presentation.
- ▶ Familiarity with this diagnosis can help avoid inappropriate management and investigation.

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