

## Reminder of important clinical lesson

## Stroke mimic: an interesting case of repetitive conversion disorder

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Stroke mimics can account for up to 5% of all acute stroke presentations. They are more frequent in those under 50 years of age, with some estimates of prevalence as high as 21% of acute stroke presentations in this age group. We describe a case of repetitive stroke mimic episodes, the recognised associated precipitants, diagnostic clues and management.

**BACKGROUND**

The current preference is to refer patients, suspected of suffering an acute stroke, to hyperacute stroke units for consideration of immediate thrombolysis. Appreciation and recognition of stroke mimic conversion disorders have assumed more importance to those making the initial assessments and onward referral.

**CASE PRESENTATION**

A woman of Pakistani origin, and in her mid-forties, presented with sudden-onset left hemiparesis and left hemisensory loss. This followed an episode of collapse with a reported loss of consciousness for 30 min. Swallowing, speech and vision remained intact. Her medical history included hypothyroidism and asthma. She had no cardiovascular risk factors. CT brain imaging carried out at the hyper acute stroke unit (HASU) was normal. Arriving within the time window for treatment, intravenous thrombolysis was administered, without any immediate complication. Aspirin was also started, at 300 mg daily for 2 weeks. Subsequent MRI brain and MR angiography (MRA) carotid scans were normal. A 24 h Holter ECG recording and an echocardiogram were not immediately performed in the context of both MRI and MRA scans being normal.

She was transferred back to her local Stroke unit for further rehabilitation. Neurological examination was unusual, revealing normal tone throughout, no initiation of movement of the left arm and leg, an inability to maintain sitting balance independently and leaning to the right. Hoover's sign was positive. Reflexes were normal throughout and plantars were down going bilaterally. There was a subjective decrease in sensation throughout the left side of her body. Cranial nerve examination was normal.

Subsequent review of the past medical records revealed two previous admissions with hemiparesis and hemisensory loss. The first was in 2002 affecting the left side and the second admission was in 2008 affecting her right side. On both occasions, the neurology was atypical.

No formal diagnosis was made after these admissions and her symptoms fully resolved.

Socially, this patient lived with her teenage daughter. She was divorced 10 years previously and now works in the health care sector.

**DIFFERENTIAL DIAGNOSIS**

While an atypical presentation, the differential might initially have included haemorrhagic stroke, embolic stroke or an endovascular ischaemic stroke. Other possibilities might have included a 'space occupying lesion' of some type (ie, abscess and tumour).

**TREATMENT**

Our patient continued to receive inpatient therapy with short-term goal setting. She made quick progress and was soon able to move around with a walking stick. She also received input from clinical psychology.

**OUTCOME AND FOLLOW-UP**

As with the previous two episodes, our patient made a full functional recovery.

The mental health occupational therapist referred her for community-based mental health follow-up and she was discharged home 12 days later.

**DISCUSSION**

Conversion disorder can account for up to 40% of stroke mimics.<sup>1</sup> Conversion disorder is listed in the DSM-IV (Diagnostic and Statistical Manual of Mental Disorders, 4th Edition) under a somatoform disorder group (300.11).<sup>2</sup> It is described as a psychological disorder, characterised by somatic symptoms with no physiological abnormalities but with an underlying psychological basis.<sup>2</sup> Conversion disorders present in many varied ways, although neurological disturbance is common. Signs and symptoms are often inconsistent.<sup>3</sup> Conversion disorders usually present in adolescence or young adulthood and are rare before the age of 10 or after 35.<sup>2</sup> Reports vary, but the tendency is for a higher prevalence in women.<sup>4</sup>

Risk factors include previous physical disability, exposure to other disabled subjects and extreme psychological anxiety.<sup>2</sup>

Our patient had many of the risk factors for conversion disorder, including exposure to others with neurological deficits (healthcare worker), female gender and aged 34 when she first presented with non-organic neurological symptoms. A psychological stressor could have been prior traumatic divorce.

The diagnosis of conversion disorder as a stroke mimic can be challenging. This is especially true at the HASU when more detailed information is not immediately available within the time constraints of administering intravenous thrombolysis.

The Hoover sign can help to distinguish organic from non-organic paresis of the leg. Extension of the paretic leg can be felt when the contralateral leg is flexed against resistance.

The potential benefits of intravenous thrombolysis outweigh the potential harm of delayed thrombolysis. However, there are obvious complications in thrombolysing stroke mimics, namely haemorrhage. Studies suggest that intravenous thrombolysis is not harmful in stroke mimics and may indeed have a better functional outcome.<sup>5 6</sup>

There seem to be little data on the optimal treatment of stroke mimic secondary to conversion disorder. Most approaches include a multidisciplinary approach. Many other types of conversion disorders are treated using psychological therapies but little evidence exists for stroke-like conversion disorders.

Prognosis is also variable. One study suggested that, over a 10-year follow-up, over half of all patients developed neurological or psychological impairment.<sup>7</sup> However, other studies have failed to show this relationship.

## Learning points

- ▶ Stroke mimics can account for up to 5% of all acute stroke presentations.
- ▶ Stroke mimic, secondary to conversion disorder should be considered in those patients under 50 years of age.
- ▶ The Hoover sign can help to distinguish organic from non-organic paresis of the leg.
- ▶ Risk factors include previous physical disability, exposure to other disabled subjects and extreme psychological anxiety.
- ▶ Patients are more likely to be female.

**Competing interests** None.

**Patient consent** Obtained.

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