Pseudoperipheral palsy due to cortical infarction

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Abstract

We present two cases of isolated hand weakness that were initially thought to be due to lower motor neurone lesions until subsequent MRI confirmed strokes in both. Small strokes are important to identify in order to optimise secondary prevention.

Keywords: stroke, cortical infarction, pseudoperipheral palsy, elderly

Case report

A 71-year-old female smoker presented acutely with weakness and numbness of the thumb and forefinger of her left hand. She had severe rheumatoid arthritis and depended on her pincer grip for activities of daily living. Examination revealed profound weakness and decreased sensation in the left thumb and index finger with brisk reflexes in the left upper limb. No other neurological impairment was found. Differential diagnoses included acute tendon rupture, nerve root compression and stroke. CT of head showed two small areas of hypo-density in the right lentiform nucleus and anterior limb of right internal capsule. It was not clear whether these were ischaemic in origin. Diffusion-weighted MRI (DWI) confirmed a small acute infarct in the right corona radiata (Figure 1A). The patient successfully recovered function of her left thumb and forefinger with physiotherapy and specialised aids and equipment, allowing her to return home and maintain her independence.

A 67-year-old woman also presented acutely with sudden weakness and numbness on the medial aspect of her right hand. The weakness and sensory impairment was more prominent in the ulnar nerve distribution at presentation. Initial examination found that there was a significant weakness in the abductor pollicis and interosseus muscles. The patient had a reduction in fine finger movements, especially abduction of her fingers with poor grip. No other neurological impairment was found. She had hypertension and a strong family history of ischaemic heart disease. Initial differential diagnosis included ulnar neuropathy and stroke. Due to the abrupt nature of onset, a MRI scan of her head was done. DWI confirmed a lesion in the precentral gyrus (Figure 1B). She made a good recovery.

Both patients were thought initially to have lower motor neurone lesions. However, neuroimaging confirmed the presence of DWI lesion in both cases and both patients were commenced on secondary prevention medications. Lhermitte first described ‘pseudoperipheral palsy’ around the turn of the 20th century as a weakness of fingers due to a CNS lesion [1]. As MRI became a more sensitive modality of imaging, the particular region of cortex involved has been characterised more accurately, isolating areas of infarction most commonly to the post-central gyrus, (Brodmann area 4) [2]. It is thought that presentations such as these may comprise up to 1% of all ischaemic strokes [3]. By mistakenly assigning signs such as these to a lower motor neurone aetiology, we miss the opportunity to look for potential thromboembolic sources and treat risk factors that would prevent further stroke.

Key point

• With the advent of treatments for the prevention of stroke, the efficacy of which are not limited to the younger person, it is vital to make an accurate diagnosis when patients develop new neurological symptoms. For cases of diagnostic uncertainty, DWI can be helpful.

Conflicts of interest

There are no conflicts of interest to declare.
Figure 1. Diffusion-weighted images showing the characteristic hyperintensity (white) area associated with acute ischaemia.

References


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