Supernumerary phantom limbs

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lias Weir Mitchell (1829-1914), justly regarded as one of the founding fathers of neurology, published accounts of phantom limbs in the 1860s and 1870s,1 around the time that neurology was emerging as an independent clinical discipline (although earlier accounts of phantom limbs are recognised2). Phantom limbs are most often observed in the context of amputation, but reports of extra limbs occurring without amputation have also appeared. Two brief cases are presented here to illustrate the clinical heterogeneity of the supernumerary limb, the possible pathophysiology of which is briefly considered.

Case 1

A 59 year-old right-handed lady was referred to the neurology clinic with a history of three stereotyped episodes occurring over a five-month period in which she had the sensation of having two arms and two hands on the left hand side, these symptoms lasting between 30 minutes and two hours. She was not aware of any spontaneous movement of this extra limb, which was not visible to her, nor could she move it voluntarily. She had a longstanding history of anxiety and her psychiatrist thought that the symptoms might be a reflection of this. Neurological examination was normal. MR brain imaging showed some high signal white matter changes. As it was not possible to say with certainty whether these changes were ischaemic or inflammatory she underwent lumbar puncture which showed normal CSF contents with no unmatched oligoclonal bands. She was then symptom free for around 18 months, when a further cluster of similar episodes occurred. Repeat MR brain imaging showed no change from previously. In the absence of a structural or inflammatory lesion, the working neurological diagnosis was inability to correct motor command and sensory feedback might be occurring in Case 1.

Whilst structural reorganisation, with reinervation of deafferented sensory cortex from other cortical regions, may occur in persistent cases of SPL associated with brain injury (e.g. after stroke), as has been suggested for phantom limbs in amputees,13 this may not be a necessary feature for the development of SPL, as suggested by transient forms. Functional neuroimaging (fMRI) in a patient with a poststroke (subcortical capsulolenticular haemorrhage) SPL with somaesthetic, visual and intentional motor components showed modality-specific activations in motor, visual and somaesthetic areas, interpreted as cortical deafferentation.14 fMRI was also undertaken in Case 2 during a motor paradigm task, which showed activation within the primary motor and supplementary motor areas only,2 as might be anticipated with an exclusively somaesthetic SPL.

REFERENCES