embryogenesis. Notably, there was a clear trend to more
of the treated worms had usual bacterial loads or normal
embryos, and all had very low numbers (table). Thus, none
of the treated patients were positive for bacteria (figure B, table),
<0·0001
versus nematode DNA. Two series of PCR reactions per
nodule sample were undertaken: one in which 16 S rDNA
was amplified with endobacterial primers and serial
dilutions of an endobacterial competitor plasmid against
a fixed amount of sample; and the other in which 5 S rDNA
was amplified with nematode primers and serial
dilutions of nematode competitor. An index was calculated between
the dilutions at equivalence of the competitor plasmids for
nematode versus nematode DNA. In most worms from controls, numerous wolbachia
endobacteria were detected by immunohistology (figure A, table) at the typical sites as described, with use of an
antisera against bacterial heat shock protein-60.

Immunohistological and PCR-based comparison of
onchocercomata

versus nematode DNA. Two series of PCR reactions per
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nematode versus nematode DNA. In most worms from controls, numerous wolbachia
endobacteria were detected by immunohistology (figure A, table) at the typical sites as described, with use of an
antisera against bacterial heat shock protein-60.

By contrast only five of 90 worms from doxycycline-
treated patients were positive for bacteria (figure B, table),
<0·0001
Discrete neurophysiological correlates in prefrontal cortex
during hysterical and feigned disorder of movement

Sean A Spence, Helen L Crimlisk, Helen Cope, Maria A Ron, Paul M Grasby

The clinical distinction between hysterical symptoms and those that are feigned awaits objective validation. We used
functional neuroimaging to examine the neural correlates of these two disorders.

Since the time of Freud, hysterical symptoms (eg, paralyses) have been attributed to an unconscious psychological mechanism (‘conversion’),
<0·0001
We studied two healthy individuals instructed to feign difficulty moving their left upper limbs (feigners); and six healthy individuals who did movement tasks normally (controls). All individuals were age-matched and strongly right-handed. Feigners were required to pretend they had difficulty, they slowed their responses to match those of patients (whom we studied first). Controls moved their limbs normally. The movement task involved a simplified form of the joystick task used previously to study controls and neuropsychiatric patients in the PET scanner.3

Individuals moved a joystick in freely-chosen sequences in two possible directions (right or left) at a low rate (one movement every 6 s), paced by an auditory tone. The two possible directions (right or left) at a low rate (one movement every 6 s), paced by an auditory tone.

Although patients with hysteria were not hypofrontal at rest, they deactivated left DLPFC when moving their affected limb. Right DLPFC hypofunction characterised feigned abnormality of the same limb. Combined data analyses showed that left prefrontal hypofunction was common to all patients with hysteria when they moved an affected limb, irrespective of symptom-lateralisation. Right prefrontal hypofunction characterised feigned disorder of either side (although the foci implicated were less well circumscribed than those of hysteria; figure). Although patients with hysteria were not hypofrontal at rest, they deactivated left DLPFC when moving their affected limbs.

Although the sample size in this study is small and our data preliminary, they nevertheless support the hypothesis that hysteria involves the left DLPFC, and differs neurophysiologically from conscious feigning. Functional neuroimaging might help in the diagnosis of hysteria.

Left DLPFC is specifically activated by the internal generation (‘choice’) of action; its selective dysfunction in hysterical motor symptoms involves the higher components of volition. This accords well with pre-Freudian notions of hysteria, which commonly invoked disordered will: ‘the patient [says] “I cannot”; it looks like “I will not”; but it is “I cannot will”’ (Paget, 1873). A fuller investigation of volitional disturbance in these patients is required.

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