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LETTER TO THE EDITORS

Diffuse cerebellar MR imaging changes in anti-Yo positive paraneoplastic cerebellar degeneration

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Sirs:

A 48 year old lady presented with a month's history of vertigo, nausea, and vomiting. Examination revealed nystagmus, mild limb-clumsiness (predominantly left sided) and mild gait ataxia. MR imaging demonstrated diffuse signal change within the cerebellar hemispheres (most prominent on the left), predominantly affecting the white matter but also the cerebellar cortex (Fig. 1). CSF examination revealed 52 lymphocytes ("bland" on cytology), oligoclonal bands were not detected. The cerebellar findings progressed rapidly and she developed dysarthric speech and marked limb/truncal ataxia. Her symptoms plateaued within 3 months, by which time she was bedbound. An Anti-Yo antibody was detected in the serum. CT imaging demonstrated an area of abnormal tissue in the left breast; biopsy confirmed breast adenocarcinoma with axillary lymph node spread. She declined repeat cerebral imaging.

While our patient's clinical course is typical for an anti-Yo positive paraneoplastic cerebellar degeneration (PCD), the imaging findings are most unusual. Despite profound ataxia, brain imaging in PCD is usually "remarkably unremarkable", although cerebellar atrophy may be observed eventually [5, 6]. Very rarely PCD has been reported with imaging abnormalities, early in the course of the disease, in the context of anti-Tr [1] and anti-CRMP5 (anti-CV2) antibodies [2]. McHugh et al. [4] reported a case of anti-Yo positive PCD (secondary to ovarian adenocarcinoma) associated with signal abnormality in the right mesial temporal lobe on MRI. Interval imaging, following tumour resection, showed resolution of the temporal abnormality but a new focal cerebellar hyperintensity.

To our knowledge, our case is the first to demonstrate diffuse cerebellar signal change on MRI in the context of anti-Yo positive PCD, expanding the radiological features recognised in this condition. The sensitivity of MRI for detecting such changes may be increased by imaging at high field strengths, as in this case (3.0 Telsa Philips Achieva; Best, The Netherlands). The pathological substrate of these imaging changes is unclear. Peterson et al. [5] examined three cases of anti-Yo positive PCD at post-mortem, observing a diffuse loss of Purkinje cells but a notable absence of inflammatory infiltrates in the cerebellar cortex. However, inflammatory changes may be seen much earlier in the disease course. Giometto et al. [3] reported the post-mortem findings in a patient who died of a myocardial infarct 4 months after developing an anti-Yo positive PCD, observing CD8+ lymphocyte infiltration in the cerebellum and cerebral cortex, and diffuse microglial upregulation of MHC-II throughout the brain.

In conclusion, we describe a case of PCD with very unusual imaging features, characterised by diffuse signal abnormality within the cerebellar hemispheres. In order to

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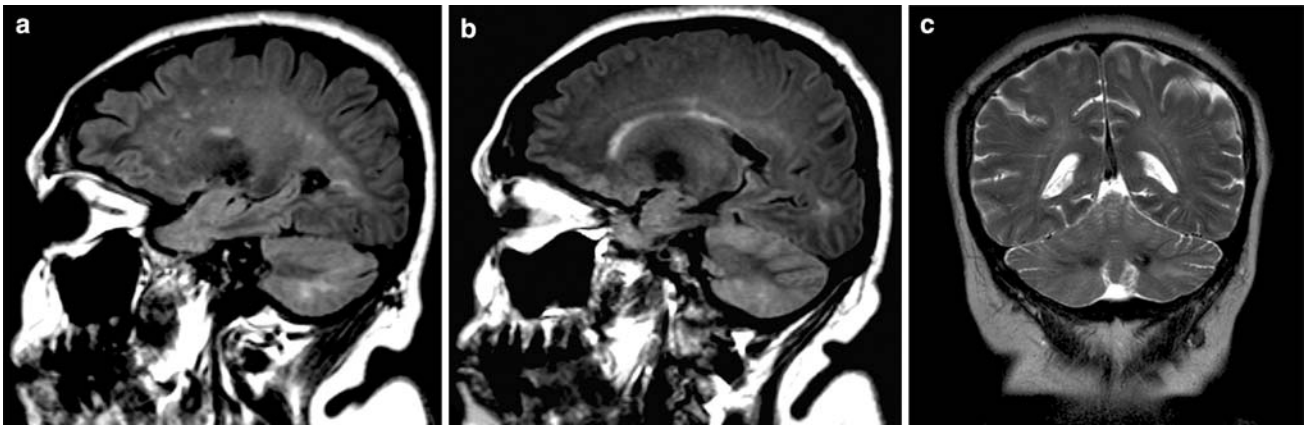

Fig. 1 Sagittal FLAIR (**a**, **b**) and T2-weighted coronal MRI (**c**) demonstrating diffuse signal change within the cerebellar hemispheres, most prominent on the *left*. The most striking changes are in the white matter, although the cerebellar cortex is also involved. No pathological enhancement was observed post-contrast. Incidentally, there is evidence of supratentorial vascular disease related to longstanding type II diabetes (**a**)

avoid diagnostic confusion or delay it is important to recognise that cerebellar signal change on MRI, be it focal or diffuse, can occasionally be observed in PCD.

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