

The imaging spectrum of HTLV-1 related neurological disease

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Background:

The imaging features of chronic HTLV-1 associated myelopathy (HAM) are well characterised. Other HTLV-1 associated neurological inflammatory diseases, including acute myelopathy and encephalopathy, are increasingly reported, but imaging features remain less well-defined. Here, we focus on non-HAM HTLV-1 related neuroinflammatory conditions, including acute myelopathy and cerebral manifestations.

Methods:

A retrospective review of the imaging features of HTLV-1 related neurological disease in the UK cohort was performed. Clinical presentations and their associated imaging patterns were pooled with a systematic review of cases published in the literature.

Results:

Three broad neurological presentations were found in a pooled review of UK and published cases: acute myelopathy, encephalopathy and cerebral white matter lesions. 16 acute myelopathy cases with imaging were identified. The most common imaging pattern was acute longitudinally extensive transverse myelitis in the cervical and upper thoracic spinal cord ($n=13$) with central abnormal spinal cord signal and swelling. 9 cases of HTLV-1 related encephalopathy with imaging were identified. The most frequent findings were symmetrical areas of abnormal signal in the frontoparietal white matter ($n=5$) and pons ($n=4$). There was often clinical and radiological improvement in both the acute myelopathy and encephalopathy groups when immunotherapy was given (88% and 66%, respectively). Cerebral white matter lesions were a common observation in patients with HAM. These varied from small to extensive with a predilection for the ventral centrum semiovale. In our cohort, lesions along the corticospinal tract and the trigeminal root entry zones were also noted ($n=4$).

Conclusion:

The neuroradiological manifestations of HTLV-1 extend beyond spinal cord atrophy to include acute myelopathy and encephalopathy. The observation that immunotherapy may potentially reverse acute HTLV-1 related CNS disease further emphasises the role of imaging in reaching an early diagnosis where therapy may be of greatest benefit.

Disclosure of Interest Statement:

There are no financial conflicts of interest to disclose.