Disseminated neurocysticercosis: stars beyond the sky

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DESCRIPTION

A 21-year-old man presented with fever, headache, nausea, vomiting and significant weight loss for the past 2 months. There was no history of seizure, muscle enlargement or subcutaneous nodules. Neurological examination was within normal limits. A diagnosis of meningitis was made based on history and general examination. Imaging was carried out. MRI of the brain showed a 'starry sky' appearance with multiple nodular enhancing lesions in supratentorial and infratentorial brain parenchyma (figures 1 and 2). Lesions were also observed at the cervicomedullary junction (figure 3) in a mid sagittal section of brain and cervical spine, so a further mid sagittal section of MRI of the whole spine was carried out. It showed diffusely scattered intramedullary lesions in the whole spinal cord (figure 4). Images of this type, showing diffusely and almost evenly distributed lesions in the central nervous system, are rarely seen. Imaging studies, especially MRI, are extremely important, as they aid in detecting more extensive lesions by, for example, presenting a 'starry sky' appearance, as occurred using brain MRI in our case. Other differential diagnoses that can present with a 'starry sky' appearance on neuroimaging are tuberculomas, chronic lymphocytic inflammation with pontine perivascular enhancement responsive to steroids (CLIPPERS), microabscess, toxoplasmosis, mycotic granulomas, low-grade astrocytoma and cystic cerebral metastasis.^{1 2} In disseminated neurocysticercosis, symptoms

Figure 2 T1-weighted postcontrast axial sections through supratentorial and infratentorial brain parenchyma.

are related to a space-occupying effect rather than inflammation caused by dying parasites, and in this situation, cysticidal drugs may exacerbate the syndrome of intracranial hypertension.^{1 3} These lesions may also be giving us a view of the central nervous system blood supply to the deepest structures through which these cysticerci would have reached

Figure 1 T1-weighted postcontrast axial sections through supratentorial and infratentorial brain parenchyma.

Figure 3 T1-weighted postcontrast mid sagittal section showing brain and cervicomedullary region.

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Figure 4 T2-weighted mid sagittal image of the spine showing multiple dot-like nodular-enhancing lesions diffusely scattered in bilateral cerebral and cerebellar hemispheres, brain stem and cervical cord, with T2-weighted hyperintense dot-like lesions in the whole spinal cord.

there. This rare imaging finding suggests that ‘stars can be beyond the sky’, and a careful thorough imaging protocol must be followed in such cases.

Learning points

- ▶ This case shows the importance of going stepwise and following a proper protocol even while making diagnosis of a simple and common presentation of a disease where an unexpected and uncommon course of disease may be found, and the whole plan of management changed, saving the patient from unnecessary invasive processes and extra monetary burden.
- ▶ Rare images show cysticerci distributed throughout the central nervous system (CNS).
- ▶ This gives an image view of blood supply in CNS even to the deepest structures.

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