A 59-year-old man was admitted to medical service for persistent nausea and vomiting. Previous medical history was significant for a Whipple’s procedure, post resection of a pancreatic uncinate neuroendocrine tumor, which was then complicated by an intra-abdominal infection, for which he was being treated with a combination of parenteral and oral ciprofloxacin (500 mg twice a day) and metronidazole (400 mg thrice a day) since four weeks. Intestinal obstruction and worsening intra-abdominal sepsis were excluded, and the antibiotics were continued.

Five days after admission, the patient was noted to have dysarthria and incoordination of his limbs. Neurological examination revealed multi-directional gaze-evoked nystagmus, saccadic pursuit, moderate dysarthria, upper limb dysmetria and a wide-based ataxic gait. Magnetic resonance imaging (MRI) brain, performed 3 days after the onset of symptoms, showed symmetrical T2 hyperintensities in bilateral dentate nuclei and superior olivary nuclei in the dorsal pons (Figure 1).

A diagnosis of metronidazole-related subacute cerebellar dysfunction was made in light of the neuroimaging findings and prolonged metronidazole use. Although a differential diagnosis of Wernicke’s encephalopathy was entertained in view of poor oral intake and recent gastrointestinal surgery, the absence of ophthalmoplegia or encephalopathy was noteworthy. Additionally, the neuroimaging findings were atypical for Wernicke’s encephalopathy, wherein the thalami, mammillary bodies and periaqueductal area are commonly involved. We believe his nausea and vomiting could also be attributed to metronidazole toxicity or involvement of the cerebellum. Metronidazole was promptly stopped, and the ataxia improved dramatically over 2 weeks.

Metronidazole-induced neurotoxicity is rare and includes peripheral neuropathy, ataxia, seizures and confusion.\(^1\) Cerebellar toxicity had been previously reported to occur at cumulative doses ranging between 25 and 1080 g.\(^2\) Our patient received a total of 53 g of metronidazole before the toxic syndrome was recognized and the drug stopped. MRI brain commonly demonstrates bilateral symmetric T2 hyperintense lesions in the cerebellar dentate nuclei and dorsal pons, as seen in our patient, as well as in the medulla, midbrain, corpus callosum and cerebral white matter.\(^3\) As metronidazole is a commonly used antibiotic, physicians need to be aware of this subacute cerebellar syndrome, as prompt withdrawal of the offending drug often leads to reversal of the clinical and radiological features.

Conflict of interest: None declared.
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References