Anti-Ma paraneoplastic opsoclonus–myoclonus syndrome

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DESCRIPTION

A 73-year-old woman with hypertension, type 2 diabetes and a 25 pack-year smoking history presented to the hospital with a 2-month history of dizziness, diplopia, memory loss, ataxia, insomnia and tremors. Due to the worsening of her symptoms, she could no longer walk or see, leading her to seek hospitalisation. On admission, a neurological examination showed counterclockwise rotary nystagmus at rest, with non-rhythmic saccadic ocular movements in all directions, not suppressed with fixation ([video 1](#)). Tremor noted in jaw and extremities when relaxed. Laboratory examination, including erythrocyte sedimentation rate, C reactive protein, methylmalonic acid, vitamin B₁₂, vitamin E, rapid plasma reagin test, serum protein electrophoresis and electrolytes, were all unremarkable. Brain MRI showed bilateral limbic encephalitis and hypertrophic olivary degeneration, while CT chest demonstrated a 2.6 cm mass in the left hilum. Subsequent biopsy and further staging demonstrated a stage III poorly differentiated adenocarcinoma of the lung. The cerebrospinal fluid analysis revealed anti-Ma antibodies. A diagnosis of anti-Ma paraneoplastic opsoclonus–myoclonus was made. Opsoclonus consists of multidirectional, high frequency and involuntary conjugate ocular saccades without an interval between the oscillations.¹ It is a common symptom of opsoclonus–myoclonus syndrome, which presents with myoclonus, ataxia, behavioural changes and sleep disturbances.¹ The usual antibodies associated with paraneoplastic opsoclonus–myoclonus are anti-Ri and anti-Hu, although anti-Ma is also rarely reported.² The patient went on to receive methylprednisolone and immunoglobulins for her encephalitis resulting in no clear clinical benefit. Her underlying malignancy was then treated with chemoradiation, leading to

Learning points

- ▶ Opsoclonus consists of multidirectional, high frequency and involuntary conjugate ocular saccades without an interval between the oscillations.
- ▶ Immunotherapies can worsen paraneoplastic neurological manifestations as a type of immune-related adverse effect.
- ▶ Tumours associated with paraneoplastic neurological manifestations have a higher inflammatory microenvironment and could carry a better prognosis.

partial regression of the tumour. Subsequently, she also experienced partial improvement of her symptoms. Nevertheless, her symptoms, although improved, still persistent and plasmapheresis and cyclophosphamide were attempted, also without any clinical benefit. Although her cancer strongly expressed programmed death-ligand 1 (PD-L1, 90%), and immunotherapy should be considered following chemoradiation in stage III non-small cell lung cancer,³ it was ultimately decided not to administer it due to reports of worsening of paraneoplastic neurological symptoms with immunotherapies.^{4–7} In fact, checkpoint inhibitors, particularly in combination therapy, can cause brain stem encephalitis as a neurological immune-related adverse effect.^{6,7} Though encephalitis secondary to paraneoplastic opsoclonus–myoclonus can lead to death, it has been hypothesised that tumours associated with such manifestation have a better prognosis due to an increased inflammatory tumour microenvironment.^{5,8} The patient is currently still restricted to the bed due to her opsoclonus–myoclonus syndrome and awaiting her tumour's molecular analysis to guide further treatment.

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Video 1 Multidirectional, high frequency, and involuntary conjugate ocular saccades (opsoclonus).

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