

**Can a single lung metastasis without solid lesion induce an opsoclonus-myoclonus syndrome, related to antiMa2 antibodies?**

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*Introduction:* Opsoclonus-myoclonus syndrome (OMS) is a rare neurological disorder characterized by involuntary, arrhythmic, multidirectional saccades with horizontal, vertical and torsional components [1-2]. Although the pathophysiology of OMS remains unknown, several evidence suggests that the disorder results from an autoimmune process, due to the presence of onconeural antibodies, causing limbic, diencephalic or brainstem dysfunction. We describe the peculiar case of OMS induced by a single lymph node metastasis of a lung adenocarcinoma without lung solid lesion with anti-Ma2 antibodies.

*Case report:* A 57-years-old woman came to our attention for a 4 months history of subjective dizziness and a referred visual impairment. Her neurological examination showed rapid, involuntary, multidirectional eye movements. We performed a cerebrospinal fluid analysis that showed a mild inflammatory pattern with the presence of cells (2.6 cells/mm<sup>3</sup>) and proteins (0.33 g/l). Biological paraneoplastic investigations showed positive anti-Ma2 antibodies both in the serum and CSF. The brain MRI revealed bilateral hyperintensity of the parahippocampal gyrus in T2/FLAIR sequences. The 18F-FDG PET scans of body showed an abnormal enhancement of a subcarinal lymphadenopathy. Finally, an endobronchial ultrasound guided biopsy demonstrated metastasis of a lung adenocarcinoma with EGFR exon 18 mutation, BRAF V600E, PDL-1 75-80%, but not the presence of solid lesions. The patient was treated with intravenous immunoglobulin and tumor-specific therapy (Dabrafenib+Trametinib), without significative improvement. She presented a neurological progression with persistent opsoclonus and ataxia.

*Discussion:* With our case we aim to underline that even just a single lymph node metastasis of a lung adenocarcinoma can be so aggressive to trigger an autoimmune process; this process can start with an apparently simple phenomenology to become later “the start point” of an encephalitis. The antibody positivity could have an important influence on the prognosis and treatment response, but so far, no sufficient data are available to distinguish the different antibodies positivity and the outcome or the treatment response.

**References:**

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