

## **A rare case of paraneoplastic encephalitis in association with neuroectodermal tumor of the gallbladder**

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Introduction: Paraneoplastic neurologic syndromes are results of a remote effect of a neoplasm that can affect any part of the nervous system by an immune-mediated mechanism. Neuroendocrine tumors of the gallbladder (NET) is an uncommon disease and early diagnosis is essential for improved prognosis; however, nonspecific clinical presentations often preclude accurate identification at an early stage. Case: The 54-year-old woman was admitted with vertigo for past 15 days and the addition of confusion for last 3 days. Her medical history was unremarkable. On admission, she was disoriented and she could not follow instructions. However, her physical examination was normal. Ocular fundus exam and cranial MRI revealed no abnormalities. CSF examination showed 71,30 mg/dL protein, 89 mg/dL glucose and 10 white cells/ $\mu$ L. Acyclovir treatment was initiated since herpes encephalitis couldn't be excluded. However, there were no improvements in her symptoms at the end of the first week of treatment and autoimmune encephalitis was suspected. Additional antibody tests were performed and positive Anti-Hu antibody was detected. The patient underwent further investigation in order to detect primary neoplasm and abdomen CT revealed lesion in the gallbladder and multiple para-aortic lymph nodes. We have diagnosed NET by biopsy with Endoscopic Retrograde Cholangio-Pancreatography. Methylprednisolone 1000 mg/day iv. was initiated and considerable improvement in her symptoms was observed after 5 days of treatment. The patient was referred to oncology service for management of her primary condition. Discussion: This is a very rare case of a NET which presented with encephalitis and has been diagnosed while investigating the etiology of autoimmune encephalitis. This case highlights a clinical issue that rare malignancies which cannot be diagnosed in early stages might present with neurological symptoms. A good clinical judgment based on different clinical, imaging and laboratory findings can lead to early diagnosis of paraneoplastic encephalitis and underlying malignancy.