recognition (NOR) test. Brain levels of Aβ were assessed by ELISA. Immunohistochemistry was performed employing anti-Aβ 4G8 to analyze the presence and distribution of Aβ deposits and anti-AbC1/6.1 to analyze the accumulation of C-terminal APP fragments in both human and murine brains. Results: APP-IT mice showed intraneuronal but not parenchymal Aβ deposition in the brain starting from age 5 months. ELISA results showed a mild increase in the Aβ levels starting from 12 months, while a slight cognitive impairment began after 8 months of age. Discussion: The *APP-IT* model failed to replicate the abundant amyloid deposition that characterizes the human pathology in A673V homozygous carriers. However, the presence of Aβ intraneuronal immunoreactivity, without any concomitant amyloid deposition in the parenchyma or vessel walls, seemed to reproduce the neuropathological picture of the human striatum. Conclusion: Here we present a new murine model of AD that reproduced the peculiar condition of the human striatum observed in the A673V homozygous carrier. Further analysis is needed to disclose the effects of the A673V mutation on the neuropathological changes in human homozygous carriers.

Atypical primary central nervous system lymphoma: two case reports and neuropathological correlates

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Objectives: Primary CNS lymphoma (PCNSL) is an uncommon malignancy of the central nervous system that accounts for < 2 – 3% of all brain tumors. We describe two atypical and rapidly progressive cases of PCNSL and their neuropathological correlates. Materials and methods: Case 1: A 58-year-old immunocompetent and otherwise healthy male presented with a subacute onset of dizziness, headache, vomiting, remittent fever; subsequently, his neurological condition rapidly worsened, leading to coma and then death 4 months after the onset. Case 2: A 62-year-old woman developed subacute paresthesias of the limbs and ataxia; in the following months, she developed spastic paraparesis, urinary incontinence, behavioral disturbances and a rapid cognitive decline; she fell into a coma and died 3 months after the onset. Our diagnostic protocol included serum and cerebrospinal fluid (CSF) assays, extensive screening for autoimmune and infectious diseases, brain magnetic resonance imaging (MRI), and oncohematologic screening for hidden malignancies. Histological and immunohistochemical studies were performed in both cases (by brain biopsy in case 1, and post-mortem brain examination in case 2). Results: In both cases, general examination and routine laboratory screening did not disclose any significant finding. An extensive screening for infectious, autoimmune, oncological and hematologic diseases was normal. Cerebrospinal fluid analysis revealed non-neoplastic lymphocytic pleiocytosis, elevated protein levels, and an increased IgG index. In case 1, MRI showed multiple, confluent areas of FLAIR-T2w hyperintensity in the cerebral white matter, extending to the nucleus-capsular regions and to the brainstem; moderate restriction in the DWI study suggested high cellularity. In case 2, MRI revealed numerous FLAIR-T2w hyperintense lesions in the cerebral and cerebellar white matter with faint leptomeningeal contrast enhancement and restriction in the DWI study; those lesions showed marked spreading in subsequent MRIs. This picture was initially interpreted as cerebral vasculitis. Based on the histopathological and immunohistochemical features, a diagnosis of cerebral lymphoma was made in both cases (neuropathological data of case 2 has been recently published). Discussion and conclusion: The diagnosis of PCNSL is frequently missed, due to the rarity of this condition and to the absence of specific clinical and radiological signs. So, neuropathology is an essential step in the investigation, as it offers a definite confirmation of the diagnosis and allows for targeted therapeutic protocols.

Lifestyle in middle age and dementia in centenarians in the CaT study: a preliminary report

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Objectives: Carrying out physical and cognitive activities, together with a diet rich in vegetables, have been reported to be among the possible protective factors against dementia in elderly subjects (1). Effectiveness in preventing cognitive decline using a multidomain intervention was also demonstrated in a randomized clinical trial (2). We wanted to exploratively test if this association was present also in centenarians. Population and methods: The CaT Study is a population-based study conducted in the centenarians in Trieste (3), initiated in 2014 and currently ongoing. During anamnestic interview, the centenarian's relative or informant was asked about putative protective factors during the centenarian's lifetime, namely: engagement in cognitive activities (e.g., playing cards, singing, reading), movement (e.g., doing physical exercise, walking, swimming), eating fruits and vegetables every day. Association between these factors with a clinical diagnosis of dementia was studied using a logistic regression, correcting for age, sex, and education. We here present data of 24 subjects who had all data available for the analyses in the first phase of the study. Results: In a uni-