Acta Neuropathol (2011) 122:515
DOI 10.1007/s00401-011-0868-1

CORRESPONDENCE

Complex tauopathies versus tangle predominant dementia

Kurt A. Jellinger

Received: 25 August 2011 / Accepted: 2 September 2011 / Published online: 20 September 2011

In their recent excellent study, Kovacs et al. [8] described a subtype of dementia in the elderly, presenting as complex neuropathy, morphologically differing in several cytopathological aspects from both Alzheimer disease (AD) and the hitherto known primary tauopathies including tangle predominant dementia (neurofibrillary tangle only dementia, NFTD). Unfortunately, in Table 3, comparing the newly described complex tauopathy with previously well-characterized tauopathy entities, some cytopathological specificities of NFTD were missing: the authors described the absence of both tufted astrocytes and astrocytic plaques in NFTD—previously considered to be specific for progressive supranuclear palsy (PSP) [7] and corticobasal degeneration (CBD) [2, 3, 7], although both lesions have been described in the gray and white matter in some cases of NFTD (see [8]). Both tufted and thorn-shaped astrocytes, often reported in PSP and rarely in classical AD [3, 4, 9, 10], were rarely observed in NFTD, mainly in cases with coiled bodies, astrocytic plaques, and argyrophilic grains in limbic structures, as shown in the previous studies [5, 6, 11]. It should further be mentioned that many of the tangles in NFTD are extracellular "ghost" tangles, preferentially being immunoreactive for 3R tau, while intracellular tangles have a mixture of 3R and 4R tau, and "pretangles" particularly occurring in limbic areas show 4R tau immunoreactivity [1, 5, 6]. These data are suggested to complete the comparative neuropathology of complex tauopathies and NFTD.

K. A. Jellinger (✉)
Institute of Clinical Neurobiology, Kenyongasse 18,
1070 Vienna, Austria
e-mail: kurt.jellinger@univie.ac.at

References

1. Dickson DW (2009) Neuropathology of non-Alzheimer degenerative disorders. Int J Clin Exp Pathol 3:1–23
2. Feany MB, Dickson DW (1995) Widespread cytoskeletal pathology characterizes corticobasal degeneration. Am J Pathol 146:1388–1396
3. Feany MB, Dickson DW (1996) Neurodegenerative disorders with extensive tau pathology: a comparative study and review. Ann Neurol 40:139–148
4. Feany MB, Mattiace LA, Dickson DW (1996) Neuropathologic overlap of progressive supranuclear palsy, Pick's disease and corticobasal degeneration. J Neuropathol Exp Neurol 55:53–67
5. Iseki E, Yamamoto R, Murayama N, Minegishi M, Togo T, Katsuse O, Kosaka K, Akiyama H, Tsuchiya K, de Silva R, Andrew L, Arai H (2006) Immunohistochemical investigation of neurofibrillary tangles and their tau isoforms in brains of limbic neurofibrillary tangle dementia. Neurosci Lett 405:29–33
6. Jellinger KA, Bancher C (1998) Senile dementia with tangles (tangle predominant form of senile dementia). Brain Pathol 8:367–376
7. Komori T, Arai N, Oda M, Nakayama H, Mori H, Yagishita S, Takahashi T, Amano N, Murayama S, Murakami S, Shibata N, Kobayashi M, Sasaki S, Iwata M (1998) Astrocytic plaques and tufts of abnormal fibers do not coexist in corticobasal degeneration and progressive supranuclear palsy. Acta Neuropathol 96:401–408
8. Kovacs GG, Molnar K, Laszlo L, Strobel T, Botond G, Honigschnabl S, Reiner-Concin A, Palkovits M, Fischer P, Budka H (2011) A peculiar constellation of tau pathology defines a subset of dementia in the elderly. Acta Neuropathol 122:205–222
9. Matsumoto S, Udaka F, Kameyama M, Kusaka H, Ito H, Imai T (1996) Subcortical neurofibrillary tangles, neuropil threads, and argentophilic glial inclusions in corticobasal degeneration. Clin Neuropathol 15:209–214
10. Takahashi T, Amano N, Hanihara T, Nagatomo H, Yagishita S, Itoh Y, Yamaoka K, Toda H, Tanabe T (1996) Corticobasal degeneration: widespread argentophilic threads and glia in addition to neurofibrillary tangles. Similarities of cytoskeletal abnormalities in corticobasal degeneration and progressive supranuclear palsy. J Neurol Sci 138:66–77
11. Ulrich J, Spillantini M, Goedert M, Dukas L, Staehelin H (1992) Abundant neurofibrillary tangles without senile plaques in a subset of patients with senile dementia. Neurodegeneration 1:257–264