LETTER TO THE EDITOR

Increased frequency of hippocampal sclerosis ILAE type 2 in patients with mesial temporal lobe epilepsy with normal episodic memory

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Sir,

We read with interest the study of Coras et al. (2014) reporting the absence of verbal anterograde episodic memory (AEM) impairment in patients with mesial temporal lobe epilepsy (MTLE) with a hippocampal sclerosis ILAE type 2 classification (HS ILAE 2, i.e. CA1 predominant cell loss). This finding may provide an anatomical basis for the dissociation of anterograde/long-term episodic memory seen in some disorders like accelerated long-term forgetting (Butler et al., 2007), which has not been explained by the two most relevant models of memory consolidation (Alvarez and Squire, 1994; Nadel and Moskovich, 1997). Herein, we report an independent replication of Coras et al.’s study. Considering that verbal AEM impairment is more evident in patients with left-sided MTLE (Mungas et al., 1985), we sought to determine the proportion of hippocampal sclerosis with an ILAE type 2 classification in patients with normal delayed recall Rey Auditory Verbal Learning Test scores. From a group of 36 randomly selected right-handed (Annett, 1967) hippocampal sclerosis patients with normal Rey Auditory Verbal Learning Test scores (cut-off of –1.5 standard deviations) and left-sided epileptogenic foci without dual pathology, we found 58% of patients with a HS ILAE 2 classification. According to studies from the last three decades, HS ILAE 1 is present in 60–80% of MTLE specimens, HS ILAE 2 in 5–10%, and HS ILAE 3 in 4–7% of resected cases (Blümcck et al., 2013). Predominance of HS ILAE 2 in our series of patients with normal Rey Auditory Verbal Learning Test scores was significantly different from HS ILAE 2 distribution reported in MTLE series from the literature ($X^2 = 17.3993$, df = 2, P-value = 0.00016), and is in agreement with the findings

| Table 1 Clinical data from 36 left hippocampal sclerosis patients with normal Rey Auditory Verbal Learning Test scores |
|---|---|---|---|---|
| HS ILAE 1 | HS ILAE 2 | HS ILAE 3 | Statistics |
| Age at surgery | 33.6 ± 7.8 | 34.8 ± 9.6 | 36.2 ± 14.8 | P = 0.892* |
| Gender (n, male: female) | 4 : 7 | 9 : 12 | 0 : 4 | P > 0.260\textsuperscript{a} |
| Epilepsy duration (years) | 16.9 ± 6.1 | 24.7 ± 9.8 | 25.0 ± 18.8 | P = 0.116* |

Values indicated as mean ± standard deviation when applicable.
*ANOVA; \textsuperscript{a}Fisher Exact test.

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from the study of Coras et al. (2014). Other relevant clinical characteristics are presented in Table 1. We concluded that higher frequency of CA1 predominant neuronal loss (HS ILAE 2) in patients with normal verbal AEM with relative preservation of other hippocampal subfields may explain partially the better preoperative verbal memory scores. However, 42% of the patients also exhibited extensive endfolium (HS ILAE 3: 11%) and/or overall hippocampal neuron loss (HS ILAE 1: 31%). Therefore, further characteristics related to verbal AEM preservation in left MTLE remain to be elucidated.

References


