

Could Transient neurological Symptoms with subdural hematoma be explained by Cortical spreading depolarization Activity in Neurons (CT-SCAN)

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Introduction

Many patients with chronic subdural hematoma present transient neurological symptoms. While most of them typically receive a diagnosis of epilepsy, we believe a significant proportion of these patients rather suffer from cortical spreading depolarization (CSD) and do not benefit from conventional epilepsy management.

Methods

We performed a retrospective case-control study comparing clinical features of patients with transient neurological symptoms post-SDH evacuation between groups with negative versus positive EEG (ictal or interictal anomaly). Using our results, we built a diagnostic score which predicts the EEG result and could inform proper management.

Results

59 patients were included, of which 20 (34%) had a positive EEG. Positive symptoms (OR 0.05, $p < 0.0001$), complete response to standard AED (OR 0.06), speech-related symptoms (OR 4.8, $p = 0.018$), prolonged episodes (OR 23.1, $p = 0.001$), clonic movements (OR 0.014, $p < 0.0005$), impaired awareness (OR 0.013, $p < 0.0005$), mortality (OR 0.021, $p = 0.003$) and favourable outcome at follow-up (OR 4.8), were discriminative between our groups, with odds ratios > 1 favouring negative EEGs. Using our results, we built a clinical score predicting EEG result based on clinical criterias, which showed a 90% sensitivity and 100% specificity, retrospectively. This suggests the existence of two separate subgroups within patients with transient neurological symptoms following SDH: one with epilepsy, and one with another phenotype, which we attribute to CSD.

Conclusions

We believe that the differences observed between our groups, have most likely been driven by the presence of CSD, in our case group. Our clinical score showed a promising diagnostic value, which may render useful for future prospective trials, regarding CSD in SDH.

Learning Objectives

Discuss transient neurological symptoms in patients with chronic subdural hematoma

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