Brain natriuretic peptide (BNP) is a reliable biomarker in the acute phase of traumatic brain injury. However, the relationship between BNP and traumatic acute subdural hematoma (aSDH) has not yet been addressed. This study aimed to analyze BNP levels on admission in surgically treated patients and assess their relationship with early postoperative seizures (EPS) and functional outcomes.

Methods: Patients with unilateral traumatic aSDH who were surgically treated in our department between July 2017 and May 2020 were included in the study. BNP was preoperatively measured. Patients' neurologic condition, radiographic variables on initial cranial computed tomography, sodium serum levels on admission, and occurrence of EPS were prospectively assessed. Functional outcome was assessed using the modified Rankin Scale (mRS) at discharge and follow-up (at 2-3 months). A poor outcome was defined by a mRS score > 3.

Results: EPS occurred in 20 (19.6%) of 102 surgically treated patients in the final cohort on the median day 3. A significant association between EPS and a poor Glasgow Coma Scale score at the 7th postoperative day was found, which in turn independently predicted a poor functional outcome at discharge and follow-up. Nonetheless, EPS were not associated with poor functional outcomes. The multivariate analysis revealed BNP > 95.4 pg/ml (aOR = 5.7, p = 0.003), sodium < 137.5 mmol/l (aOR = 4.6, p = 0.009), and left-sided aSDH (aOR = 4.4, p = 0.020) as independent predictors of EPS.

Conclusion: In the early postoperative phase of traumatic aSDH, EPS were associated with worse neurologic conditions, which in turn independently predicted poor outcomes at discharge and follow-up. Although several EPS risk factors have already been elucidated, this study presents BNP as a novel reliable predictor of EPS. Further larger studies are needed to determine whether a more precise estimate of EPS risk using BNP levels can be reached [1)].

Sanchez et al. reported a case of Reverse Takotsubo Cardiomyopathy in an otherwise healthy 23-year-old man presenting with back pain, urinary retention, bradycardia, and hypertension. Troponin levels and brain natriuretic peptide (BNP) were elevated, and echocardiogram revealed an ejection fraction (EF) of less than 20%. In addition, MRI demonstrated a spinal subdural hematoma from T1-S1 with no cord compression. Repeated echocardiogram demonstrated an EF of 20-25% with a reverse Takotsubo pattern of cardiomyopathy. With supportive care, his clinical picture improved with normalization of cardiac enzyme and BNP values. This case represents a r-TTC presenting as heart failure in a young, apparently healthy male likely incited by a spinal subdural hematoma. To our knowledge, it is the first of its kind reported [2)].

1)
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2)
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