Posttraumatic hydrocephalus risk

The incidence of posttraumatic hydrocephalus treated with shunt implantation was 4.8%. The mean age of the patients was 32 years (range 14-75 years). In 22 cases, the hydrocephalus was diagnosed in the rehabilitation unit (40%). Other patients were diagnosed and shunted before being transferred to rehabilitation [1].

Most cases of PTH emerge during rehabilitation. Therefore, attention towards this complication should be present also beyond the acute stage after TBI, particularly among older patients and patients with severe disordered consciousness [2].

Predicting posttraumatic hydrocephalus: derivation and validation of a risk scoring system based on clinical characteristics [3].

A retrospective study included 121 patients who underwent DC after TBI between January 2013 and December 2016 at Yijishan Hospital by 6 different neurosurgeons and were still alive at 6-month follow-up. They were divided into PTH group and non-PTH group according to the presence of PTH. Logistic regression analysis was used to identify PTH potential risk factor based on the results obtained from univariate analysis. The power of the regression model to discriminate PTH from non-PTH was evaluated using the receiver operating characteristic (ROC) curve.

With Glasgow Coma Scale (GCS) scores cut-off value of 6, GCS scores less than 6 on admission, craniectomy site, and intraventricular hemorrhage (IVH) were significant predictors for the development of PTH after DC. ROC curve indicated that a final predictive model composed of these three factors (area under of the curve, AUC = 0.866; sensitivity = 0.78 and specificity = 0.83) was significantly better than each single model (AUC = 0.750 for GCS scores on admission; AUC = 0.650 for craniectomy site; AUC = 0.572 for IVH). Furthermore, a significantly positive association was found between patients' Glasgow Outcome Scale Extended (GOSE) scores and GCS scores on admission, while a significantly negative one was found between IVH, craniectomy site and GOSE.

The results suggested that the application of a predictive model combining the three characteristics mentioned above, such as GCS scores less than 6 on admission, presence of IVH on first head CT and need for bilateral DC, might be used to predict whether TBI after DC will develop PTH. Furthermore, the reliability of this specific combination might be useful for clinicians to perform a correct prediction [4].

1)
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3)
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4)

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