Idiopathic normal pressure hydrocephalus

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Definition

Idiopathic Normal Pressure Hydrocephalus Definition.

History

see Idiopathic normal pressure hydrocephalus history.

Epidemiology

Idiopathic Normal Pressure Hydrocephalus Epidemiology.

Classification

Idiopathic Normal Pressure Hydrocephalus Classification.

Natural History

Idiopathic Normal Pressure Hydrocephalus Natural History.

Etiology

Idiopathic Normal Pressure Hydrocephalus Etiology.

Pathogenesis

see Idiopathic normal pressure hydrocephalus Pathogenesis.

Pathophysiology

see Idiopathic normal pressure hydrocephalus pathophysiology.

Clinical Features

see Idiopathic normal pressure hydrocephalus clinical features.

Scales

see Idiopathic normal pressure hydrocephalus scales.

Diagnosis

see Idiopathic normal pressure hydrocephalus diagnosis.

Differential diagnosis

see Idiopathic normal pressure hydrocephalus differential diagnosis.

Guidelines

Idiopathic normal pressure hydrocephalus guidelines.

Treatment

see Idiopathic normal pressure hydrocephalus treatment.

Outcome

see Idiopathic normal pressure hydrocephalus outcome.

Observational retrospective cohort studies

The Nationwide Readmissions Database was queried from 2018 to 2019 for iNPH patients aged ≥ 60 years who underwent VPS surgery. Risk Analysis Index and modified 5-item Frailty Index scores were calculated and RAI cross-tabulation was used to analyze trends in frailty scores by the following binary outcome measures: overall complications, nonhome discharge, extended length of stay > 75th percentile, and mortality. Area under the receiver operating characteristic curve analysis was performed to assess the discriminatory accuracy of RAI and mFI-5 for primary outcomes.

Results: A total of 9319 iNPH patients underwent VPS surgery, and there were 685 readmissions, 7.4%, 593 perioperative complications, 6.4%, and 94 deaths, 1.0%. Increasing RAI score was significantly associated with increasing rates of postoperative complications: RAI scores 11-15, 5.4%, n = 80; 16-20, 5.6%, n = 291; 21-25, 7.6%, n = 166; and ≥ 26, 11.6%, n = 56. The discriminatory accuracy of RAI was statistically superior, DeLong test, $p < 0.05$, to mFI-5 for the primary endpoints of mortality, NHD, and eLOS. All RAI C-statistics were > 0.60 for mortality within 30 days, C-statistic = 0.69, 95% CI 0.68-0.70.

Conclusions: In a nationwide database analysis, increasing frailty, as measured by RAI, was associated with NHD, 30-day mortality, unplanned readmission, eLOS, and postoperative complications. Although the RAI outperformed the mFI-5, it is essential to account for the potentially reversible clinical issues related to the underlying disease process, as these factors may inflate frailty scores, assign undue risk, and diminish their utility. This knowledge may enhance provider understanding of the impact of frailty on postoperative outcomes for patients with iNPH, while highlighting the potential constraints associated with frailty assessment tools. [1)],

A study was conducted by visualizing a total of 1232 brain CT scans performed in the Emergency Departments of four hospitals of a network on patients who were admitted for different complaints yet screened as suspicious for iNPH. Subsequently, corresponding Emergency Department medical records were investigated to understand the medical history of each patient in search of elements attributable to an alteration of CSF dynamics. The cohort of positive CT scans, according to the radiological and clinical inclusion criteria, included 192 patients. Among the reasons to require acute medical care, “Fall” was the most common. The cumulative incidence of CT scans suggestive of iNPH among the patients undergoing CT scans was as high as 15.58%, and the period prevalence calculated for the total amount of patients accessing the Emergency Departments was 1.084%. The real incidence of iNPH in the population may be underestimated, and the social burden linked to the assistance of patients suffering from such untreated conditions could be significantly relieved [2)]

Case series

see Idiopathic normal pressure hydrocephalus case series.

Case reports

see Idiopathic normal pressure hydrocephalus case reports.

Experimental animal model

see Idiopathic normal pressure hydrocephalus experimental animal model.

1)
Courville E, Rumalla K, Kazim SF, Dicpinigaitis AJ, Schmidt M, Robinson TM, Bowers CA. Risk Analysis Index as a preoperative frailty tool for elective ventriculoperitoneal shunt surgery for idiopathic normal pressure hydrocephalus. J Neurosurg. 2023 Oct 6;140:1110-1116. doi: 10.3171/2023.7.JNS23767. PMID: 38564806.
2)
Petrella G, Ciarlo S, Elia S, Piaz RD, Nucera P, Pompucci A, Palmieri M, Pesce A. Idiopathic Normal Pressure Hydrocephalus: The Real Social and Economic Burden of a Possibly Enormous Underdiagnosis Problem. Tomography. 2023 Oct 30;9(6):2006-2015. doi: 10.3390/tomography9060157. PMID: 37987343; PMCID: PMC10661316.