

Supected Normal Pressure Hydrocephalus: Alternative Diagnoses for the Master of Mimicry

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Introduction

Given the prevalence of comorbidities that may confound its clinical picture, an accurate diagnosis of Normal Pressure Hydrocephalus (NPH) is essential prior to considering any surgical intervention for CSF diversion. The objective of this study was to identify the number of patients whose (incomplete) triad of cognitive decline, ataxia, and urinary incontinence improve with treatment of medical conditions that may "mimic" NPH.

Methods

All patients with a clinical suspicion of NPH are presented in a Henry Ford Health System multi -disciplinary conference and prospectively registered in the Research Electronic Data Capture (REDCap), which was queried for all cases without a previous diagnosis of NPH from 2003-2017. The NPH conference requires that all cases discussed must have at least radiographic evidence of ventriculomegaly per Evans' index. For each patient, an Anticholinergic Cognitive Burden (ACB) score was calculated, and referral notes to other specialties treating comorbid conditions were reviewed.

Results

Of the 316 patients without obstructive hydrocephalus, 149 patients (47%) were identified with alternative diagnoses not necessitating a lumbar puncture. We further identified 87 patients (28%) with treatable causes (cervical stenosis, Parkinson's disease and sleep disorders constituted 64% of this subsection), out of which 52% improved with treatment. Of the 142 patients who underwent LP, 40 patients did not improve clinically. Finally, 102 patients were referred for a surgical shunt. ACB score calculated between the non-operative and shunted cohorts did not statistically significantly differ (0.75 vs 0.84, respectively, p=0.672).

Conclusions

Recognition of treatable conditions that may mimic NPH cannot be overstated, as 14% of patients without obstructive hydrocephalus reported symptomatic improvement following treatment of their comorbidity – notably cervical stenosis, Parkinson's disease and sleep disorders. While ACB was not significantly higher in the nonshunted candidates, polypharmacy remains a key confounder, especially in the elderly

Learning Objectives

1) Identify the most common "mimicers" of Normal Pressure Hydrocephalus

 The percentage of patients whose whose (incomplete) triad of cognitive decline, ataxia, and urinary incontinence improve with treatment of other comorbidities

3) Discuss the effect of polypharmacy in patients who present with an index of suspicion for Normal Pressure Hydrocephalus

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