

Objective: Approximately half of all children and adults newly diagnosed with epilepsy also show behavioral and/or cognitive difficulties upon evaluation. While neuropsychological screening is recommended as a routine part of care at seizure onset, in reality, access to care is often restricted by many factors. In order to better define the extent of the problem, we developed a survey to understand how frequently youth with new onset epilepsy currently undergo neuropsychological evaluation or screening and whether virtual assessment tools are used to extend access to care.

Participants and Methods: We created an online survey to better understand new onset epilepsy care provided within neuropsychological practice settings in the United States and Canada. The survey was disseminated via multiple listservs (e.g., AACN listservs, APPCN, PERF neuropsychologists) and respondents included 45 neuropsychologists. Survey questions were grouped by the following domains: 1) location characteristics (e.g., urban versus rural location, type of practice, affiliation with comprehensive epilepsy center); 2) volume of new onset epilepsy patient cases (e.g., number of neuropsychologists within practice who see new onset patients, percentage of new onset cases who received neuropsychological evaluations/screeners, wait time), and 3) tele-neuropsychology procedures (e.g., use of virtual testing, frequency of virtual testing, frequency of virtual intakes/feedbacks).

Results: Practice locations of the 45 respondents included academic medical center (n=34, 75.6%), community medical center (n=10, 22.2%), and private practice (n=1, 2.2%). All but one respondent practiced in an urban setting. Respondents were generally affiliated with Comprehensive Epilepsy Centers (level 3 or 4) (n=39, 86.7%). Practice settings typically included ≤ 3 epilepsy neuropsychologists (n=29, 65.9%). Of interest, neuropsychological evaluation of new onset pediatric epilepsy patients generally ranged from 0-25% of cases (n=32, 71%; mode=11-25%). Reported barriers included: insurance, poor access to rural populations, interdisciplinary communication, departmental referral patterns, limited number of providers, and need to prioritize pre-surgical patients. In terms of access, neuropsychology waitlist times for patients with nonsurgical epilepsy ranged from <1 to 6 months (n=34, 75%) with an equal proportion of patients waiting 1-3 months (33%) and 4-6 months (33%). Tele-

health was not frequently utilized in non-surgical epilepsy test administration (Do not use, n=39; 86.7%), but frequently incorporated for non-testing purposes (i.e., intakes, feedbacks) (n=40, 88.9%).

Conclusions: Results of this provider survey indicate that children with new-onset epilepsy do not routinely undergo neuropsychological evaluation ($\leq 25\%$). Barriers included prioritizing presurgical workups, referral patterns, access to care, and limited provider bandwidth. Clearly, there is a need to improve access to care. Possible solutions include developing more time efficient screening batteries with measures most sensitive to early cognitive and psychosocial deficits, and incorporating the use of virtual technology all in the service of improving the lives of children with epilepsy.

Categories: Epilepsy/Seizures

Keyword 1: epilepsy / seizure disorders

Keyword 2: teleneuropsychology

Correspondence: William A. Schraegle, Department of Neurology, Dell Medical School at The University of Texas at Austin, william.schraegle@austin.utexas.edu

45 Can Surgical Ablation Modify a Developmental Visuospatial Impairment in Periventricular Nodular Heterotopia? A Case Study

Yosefa A Modiano

University of Texas Health Neurosciences, Houston, TX, USA

Objective: Periventricular nodular heterotopia (PVNH) is a malformation of cortical development (MCD) characterized by aggregates of gray matter adjacent to the lateral ventricular walls. Clinical presentation is heterogeneous with higher rates of seizures and reading impairments typically in the setting of average IQ (Felker et al. 2011). The majority of neuropsychological inquiry has focused on reading fluency, though a single case study showed a neurocognitive profile consistent with nonverbal learning deficits in a 7-year old boy with suspected autosomal dominant bilateral heterotopia (McCann et al., 2008). Given the periventricular focus and potential for unilateral presentations, non-linguistic neurocognitive sequelae may be expected in cases affecting

the non-dominant hemisphere, yet this remains largely unexplored. Surgical ablation by laser interstitial thermal therapy (LITT) is increasingly used for epilepsy management in PVNH (Thompson et al., 2016, Whiting et al. 2020). However, there are no reported studies exploring cognitive outcomes following LITT of focal PVNH.

Participants and Methods: A 46-year-old, right handed, Black female with 16 years of education presented for management of medically refractory epilepsy. Epilepsy monitoring captured intermittent slow waves in the right temporal lobe, interictal polyspikes in the right temporal lobe, and three epileptic events all emanating from the right temporal lobe. MRI showed extensive migrational anomalies involving the right hemisphere posteriorly consistent with PVNH with no associated mesial temporal sclerosis. Pre-surgical neuropsychological evaluation showed a significant split in IQ, with verbal IQ = 99 and performance IQ = 76. Testing indicated circumscribed deficits in visuo-perceptual judgement, visuoconstruction, visuospatial reasoning, non-verbal recall, and several executive weaknesses in the context of otherwise average neurocognitive functioning. Fine motor speed was impaired bilaterally. Her profile was suggestive of non-dominant fronto-parieto-temporal dysfunction, concordant with the remainder of her work-up. By history she reported longstanding academic weaknesses in math and organization with strong verbal and reading abilities.

Results: The patient underwent partial LITT of right PVNH sparing areas involved in visual function. At 6-month follow-up she was seizure free (Engel outcome 1A). Post-surgical neuropsychological evaluation showed reliable improvements in perceptual reasoning, aspects of learning/memory, and verbal naming. Visuoconstruction remained impaired but qualitatively improved. She also reported subjective experience of improved mental clarity and was applying for jobs after regaining driving privileges.

Conclusions: This case demonstrates symptoms and history concerning for a nonverbal learning disorder in an adult woman with epilepsy secondary to right hemisphere PVNH and underscores the importance of exploring the range of neurocognitive profiles in MCD. Her notable neurocognitive and functional improvements following surgical ablation and seizure freedom suggest a possible release of

function in the absence of inhibitory neurophysiological influences. This raises interesting questions about the endurance of her developmental profile. This case report contributes to our understanding of neuroanatomical correlates of neurocognitive and neurodevelopmental presentations. Future investigations should explore neuropsychological changes following LITT for PVNH.

Categories: Epilepsy/Seizures

Keyword 1: epilepsy / seizure disorders - surgical treatment

Keyword 2: visuospatial functions

Keyword 3: learning disabilities

Correspondence: Yosefa A. Modiano, Ph.D. University of Texas Health Neurosciences, McGovern Medical School, Vivian L. Smith Department of Neurosurgery
Yosefa.A.Modiano@uth.tmc.edu

46 Visuospatial Functions in Patients After COVID-19 Disease

Agnieszka Olejnik, Joanna Ofanowska, Katarzyna Moszczyńska, Pamela Skrzyniarz, Aleksandra Bala
Faculty of Psychology, University of Warsaw, Warsaw, Poland

Objective: "Brain fog" is one of the most common consequences of developing COVID-19. The available research focuses mainly on the decline in overall cognitive performance. Much less papers refers to the evaluation of particular cognitive domains, and when it does, it focuses particularly on attention and memory disorders. The available data on the effects of COVID-19 infection on visuospatial functions is sparse, so the aim of this study was to investigate the level of visuospatial functioning in adults who have a history of COVID-19 infection. It was also intended to explore whether there is a protective effect of vaccination on the cognitive functioning after COVID-19.

Participants and Methods: The group included sixty volunteers (age: M = 40.12, SD = 16.78; education: M = 12.95 SD = 2.25; sex: M = 20, F = 40) - thirty seven with a history of COVID-19 and twenty three who were never infected with SARS-COV-2. Of those with a history of COVID-19, twenty-four were vaccinated at the time of