

Keyword 1: visuospatial functions

Keyword 2: social cognition

Keyword 3: cerebellum

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72 Lesion Location and Differing Symptom Presentation in Two Arachnoid Cyst Cases

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Objective: Arachnoid cysts are fluid-filled sacs thought to be a developmental abnormality which form as a result of splitting or duplication of the arachnoid membrane. In most cases, arachnoid cysts are congenital and asymptomatic throughout an individual's life. Rarely, arachnoid cysts develop because of head injury, intraventricular hemorrhage of prematurity, presence of a tumor, infection or surgery on the brain. Intracranial cysts are typically incidental brain imaging findings and most commonly located in the middle fossa, the suprasellar region, and the posterior fossa. In cases where the cyst enlarges significantly individuals may experience symptoms of increased intracranial pressure, mass effects, seizures, nausea and vomiting, focal neurological deficits, or hydrocephalus. This presentation compares the differing symptom presentation of two individuals with medically confirmed arachnoid cysts -- one in the middle cranial fossa region (Patient A) and the other in the posterior cranial fossa region (Patient B).

Participants and Methods: The 2 patients were referred to a private practice neuropsychological clinic for neuropsychological assessment. Patient A was a 39-year-old, right-handed, married Syrian male with 12 years of education, unemployed at the time of testing. Changes in cognition, behavior and personality were reported for Patient A approximately two years after a known cerebrovascular accident. Patient B was a 48-year-old, left-handed married

Caucasian male with 16 years of education, on disability due to his medical condition. Patient B reported severe memory impairment, speech and language deficits, variable attention, executive dysfunction, impaired gait with falls, emotional dysregulation, and sleep difficulties. He was diagnosed with bipolar disorder and alcohol use disorder in remission for 9 years. **Results:** Neuropsychological testing results for Patient A were not valid, due to initiation difficulties, paranoia about the testing and consequent limited engagement in the process. Predominant symptoms were consistent with negative symptoms of schizophrenia, (i.e., avolition, abulia, and diminished emotional expression); no positive symptoms were observed or reported. His speech was limited - he lacked spontaneous speech and only responded to direct questions. His informant completed a measure assessing pre/post changes in frontal systems and there were significant increases in apathy and executive dysfunction reported. Neuropsychological results collected from Patient B revealed mild to severe impairment of aspects of executive functioning, memory, processing speed, visual attention, expressive language, and manual dexterity bilaterally and manual motor strength – more consistent with subcortical neurological disease. Self-report and informant data revealed significant difficulties with functional abilities, pre/post changes in frontal systems (apathy, disinhibition, and executive dysfunction), sleep efficiency and daytime fatigue, and psychological distress (anxiety and depressive symptoms).

Conclusions: The presenting case analysis illustrates the importance of neuropsychology in identifying and tracking the nature of symptoms associated with neuroimaging confirmed arachnoid cysts. This case analysis is unique as it highlights the complexities of differing symptom phenotypes of the same condition due to location of the cyst. Surgical intervention usually through draining the cyst directly or implantation of a shunt is typically recommended for symptomatic patients and that course of treatment was suggested to both patients. Treatment recommendations geared to target psychosocial and functional difficulties should also be considered.

Categories: Medical/Neurological Disorders/Other (Adult)

Keyword 1: brain disorder

Keyword 2: neuropsychological assessment

Keyword 3: executive functions

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73 Processing Speed in Migraine With and Without Aura: A Meta-Analysis

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Objective: Migraine refers to recurrent, unilateral headache attacks, lasting 4-72 hours, that have a pulsating quality and can occur with or without aura. Aura is a symptom, usually preceding the onset of a migraine, where there is an experience of gradually spreading focal neurological symptoms which typically last less than one hour. A meta-analysis was conducted which quantitatively synthesized literature documenting performance on clinical measures of processing speed (PS) in individuals with migraine with (MwA) and without aura (MwoA).

Participants and Methods: Data for this study came from a larger study that compared overall neuropsychological functioning in primary headache disorders (PHD) and healthy controls (HC). We searched OneSearch and PubMed using a uniform search-strategy to locate original research comparing cognition between PHD and HC. Analyses were modeled under random effects. Hedge's *g* was used as a bias-corrected estimate of effect size. We assessed between-study heterogeneity using Cochran's *Q* and *I*². Egger's regression test was used to assess publication bias (i.e., the association between standard error and effect size). High heterogeneity in effects was analyzed for possible moderating variables using meta-regression and sub-group analyses.

Results: The initial search interval spanned inception–May 2021 and yielded 6692 results. Twelve studies met inclusion criteria, included clinical measures of PS, and included

PHD subgroups with MwA and/or MwoA (MwA *n* = 279, MwoA *n* = 655, HC *n* = 2159). MwA demonstrated moderately worse performance in PS overall when compared to HC (*k* = 7, *g* = -0.41, *p* = 0.028). MwoA also demonstrated worse performance in PS overall when compared to HC but the effect size was small (*k* = 12, *g* = -0.21, *p* = 0.006). Heterogeneity of MwoA studies was low (*Q* = 15.12, *I*² = 21.19) while heterogeneity of MwA studies was high (*Q* = 21.91, *I*² = 72.61). Meta-regressions of MwA studies indicated clinical age and disease duration to be related to effect sizes such that studies with older clinical participants and longer disease durations yielded greater (negative) differences. Egger's regression intercept noted a possible association effect size and standard error for MwA articles (*t* = 3.60, *p* = 0.02) and MwoA articles (*t* = 5.21, *p* < 0.005). Trim-and-fill procedure estimated 0 MwA studies to be missing due to publication bias (adjusted *g* = -0.41, *p* = 0.028) while 7 MwoA studies were estimated to be missing due to publication bias (adjusted *g* = -0.03, *Q* = 34.79).

Conclusions: Individuals with migraine demonstrated worse performances on tests of PS compared to controls. Effect sizes were generally moderate in strength for MwA while effect sizes were generally small in strength for MwoA. This quantitative summary confirmed that individuals with migraine experience slowed processing speed in general and this effect is magnified when aura is a presenting symptom.

Categories: Medical/Neurological Disorders/Other (Adult)

Keyword 1: neuropsychological assessment

Keyword 2: neurocognition

Keyword 3: information processing speed

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74 The Impact of Motoric Dysfunction on Neuropsychological Test Performance Within an Electrical Injury Sample

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