

control groups on affective empathy, and as expected on the MET, both groups had significantly higher ratings for photos composed according to the Golden Spiral (AgCC, $\eta^2 = .071$; control, $\eta^2 = .136$). In contrast, the AgCC group scored significantly lower than controls overall on cognitive empathy, $\eta^2 = .065$. Exploratory post-hoc found a significant group difference in cognitive empathy only on photos composed according to the Golden Spiral, $\eta^2 = .090$, with the scores in the AgCC group unimpacted by composition type while the control group exhibiting significantly higher scores Golden Spiral images, $\eta^2 = .254$.

Conclusions: Empathic deficits in AgCC were restricted to the cognitive component, while affective empathy was not impaired. Visual aesthetics of photo composition influenced affective empathy ratings in both AgCC and control groups. However, adults with AgCC had diminished ability to give cognitive labels to the emotional states of others, which was not enhanced by the formal aesthetics of stimuli. Thus the corpus callosum seems to facilitate the ability to cognitively label emotions by facilitating visual attention. It also suggests that the corpus callosum does not facilitate affective empathy, in part because it does not appear to determine whether formal aesthetics influences the processing of visual stimuli in AgCC or neurotypical controls.

Categories: Behavioral Neurology/Cerebral Lateralization/Callosal Studies

Keyword 1: corpus callosum

Keyword 2: emotional processes

Keyword 3: social cognition

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4 Neuropsychological Functioning in an Active Duty Service Member with Partial Agenesis of the Corpus Callosum and Bilateral Ventriculomegaly.

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Objective: Partial agenesis of the corpus callosum (PACC) is a rare brain birth defect

characterized by incomplete development of the corpus callosum, the primary white matter bundle that connects the right and left hemispheres. PACC can be associated with other congenital abnormalities, including malformation of the brain's ventricular system, such as colpocephaly or ventriculomegaly, and it is typically considered a pediatric diagnosis. Clinically, this condition may present with a broad continuum of cognitive and socioemotional difficulties ranging from significant day-to-day impairment to relative independence. Newly diagnosed PACC with ventriculomegaly in adults is very rare (0.020–0.025%) and little is known about neuropsychological functioning in adults with this condition. The aim of this case study is to add to the literature base for better PACC neuropsychological conceptualization.

Participants and Methods: This case study involves neuropsychological evaluation of cognitive and behavioral health functioning of a 37-year-old active duty service member (ADSM) with recently identified PACC and ventriculomegaly (via incidental imaging finding). The ADSM reported a history of learning difficulty, though she was able to earn rank of sergeant first class in a low density military occupation specialty (i.e., Mortuary Affairs) over an 18.5 year active duty career.

Results: Cognitive testing was notable for consistently low to exceptionally low attention and processing speed scores. Mild executive dysfunction was also noted in the areas of planning and inhibition. Emotionally, she endorsed mild somatic and depression symptoms. Interpersonally, she was shy and avoidant with longstanding characterological traits characterized by worry, insecurity, and general tendency to catastrophize.

Conclusions: This case adds to the broad clinical presentation of PACC with ventriculomegaly, and highlights that even in the context of a significant congenital brain deformity and longstanding cognitive deficits, independent functioning can be achieved.

Categories: Behavioral Neurology/Cerebral Lateralization/Callosal Studies

Keyword 1: corpus callosum

Keyword 2: brain structure

Keyword 3: cognitive functioning

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