

The Challenges of Autism Spectrum Disorder in the Older Adult

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Introduction

Autism Spectrum Disorder (ASD) is a lifelong neurodevelopmental condition which was catapulted into public awareness following its first inclusion into the Diagnostic and Statistical Manual of Mental Disorders – Third Edition (DSM-III) in 1980. Currently, the DSM is in its fifth iteration with recent changes in 2013 causing a wave of controversy, particularly, with Asperger Syndrome now being subsumed under the broad category of autism spectrum disorder. However, what has remained consistent, without debate, throughout the past 30 years is the notion of autism spectrum disorder being inherently developmental. Herein, lies the difficulty when diagnosing autism spectrum disorder in an older adult population. Often, a detailed developmental history is unavailable or difficult to obtain. This can be further complicated by the influence of ageing processes and life events such as psychosocial adversity, brain injury, illness, and stressors, which can ostensibly shape behavioural traits in later life. In these instances, obtaining a converging consensus in addition to neuropsychological input is strongly recommended.

The following case describes an elderly man who presented to the emergency department requiring care for chronic venous ulcers in his left leg. He was known to staff with a documented pattern of “taking off” when people disagree with him and significant behavioural issues causing him to be evicted from past nursing homes. Clinicians had also frequently commented on their concerns for his possible vulnerabilities due to his lack of family and friends, and homeless lifestyle.

Clinical Case

The patient (N.S) was a 71-year-old, right-handed, Caucasian gentleman, with 10 years of formal education. He was unemployed, had a limited work history and was receiving financial support from the government. It was understood that he was previously on the disability pension, however, it was unclear as to what reason he was provided a disability pension. Possible developmental delay had also been suggested previously, however, there was no formal testing to establish this.

Approximately two weeks prior to his current hospital presentation, a psychiatrist from another hospital raised concern regarding his capacity for decision-making, planning and interpersonal interaction/understanding and suggested that his behavioural symptoms whilst provisional would be consistent with an autism spectrum disorder. In particular, his history of non-compliance and difficulty with understanding alternative perspectives on issues such as his transient lifestyle, appeared to be points of focus. Although these observations were made, no formal assessment was conducted to establish an autism diagnosis. Medical records had also documented cognitive screening with the Montreal Cognitive Assessment (MoCA), completed two years prior to current assessment,

with a score of 26/30. As such, N.S. was referred for neuropsychological assessment by his treating doctor for further investigation into his behaviours.

Previous records indicated that N.S. had a pattern of agreeing to respite then leaving with no care plan. Whilst he had been a recipient of community housing for the past two years, N.S. had refused to live in his house for the past year due to housing maintenance issues. Despite numerous attempts to help resolve these issues by housing workers and social workers, N.S. remained adamant that the house was “uninhabitable” and had chosen to stay in hotels, at fast food restaurants, “out on the streets” as well as entering and exiting hospitals. N.S. had previously received financial administration two years prior to his current presentation, which was reportedly rescinded a few months earlier upon appeal by N.S.

Regarding his medical history, N.S. was blind in his right eye and had a cataract in his left eye. He presented with a history of kyphosis (excessive outward curvature of the spine, causing hunching of the back) due to a motor vehicle accident sustained over 50 years ago. He reported that he remembered waking up on the ground, outside of the vehicle, though he was unclear of the length of unconsciousness or if it had been documented in his medical file. He was subsequently hospitalised but was unable to recall the name of the hospital when queried. Following this accident, he reported that he was unable to return to work at that time due to being “not as clear anymore,” but denied any changes to his character. N.S. had also sustained a more recent mild traumatic brain injury that resulted in a brief loss of consciousness a few months prior to his current presentation at the hospital. He reported that he had fallen and hit his head on a table whilst he was at a fast food restaurant. He reported experiencing more headaches and changes to his cognition such that his thinking became “unclear sometimes”, since sustaining this brain injury though he was unable to elaborate further when pressed. Brain CT scan performed following this most recent head injury reported slightly atypical cerebrospinal fluid (CSF) appearance and mild dilatation of the ventricles. The radiologist opined that this was associated with chronic marked kyphosis, as the curvature of the spine had likely affected CSF circulation. Mild dilatation of the ventricles was also reported as unchanged when compared to previous imaging two years prior. A scleral band was also evident around the right eye, which likely reflects previous efforts in managing his right eye blindness. No intracranial haemorrhage, space-occupying lesion or skull fracture was reported on neuroimaging.

His past medical history was notable for urinary tract infections, benign prostatic hyperplasia and squamous cell carcinoma in his left ear. N.S. denied any previous medication use and although prescribed Clexane (enoxaparin sodium is used to treat and/or prevent blood clots. It is also used to treat angina & heart attack when used with aspirin), he was noncompliant with medications during admission. His substance use history was unremarkable. He denied drinking alcohol, illicit substance consumption or smoking tobacco. He stated that he was very “particular about hygiene.”

Assessment findings

On testing, N.S. was oriented to person, place, and time. He was cooperative and largely pleasant during the clinical interview. Speech was fluent with intact comprehension. There was no evidence of word-finding difficulty. While he appeared to be informative regarding recent events, he gave tangential responses that often did not directly address questions that were being asked. He was also rigid and perseverative with certain topics of conversation. His social pragmatics were also at times inappropriate, as he often did not partake in turn-taking during conversations and he became quite frustrated when he was interrupted. During testing, he required significant repetition of task instructions due to this tangentiality and was slowed in responding. As N.S. was blind in his right eye and had a cataract in his left eye, assessment was limited to verbal based tasks.

Based on his reported education and vocational history, premorbid functioning was estimated to be within the “Low Average” to “Average” range. On formal testing (i.e., WAIS-IV Digit Span), he was able to recite a digit span of six numbers forwards indicating that his basic attention span was intact. He was also able to hold and sequence up to four numbers backwards. Clinically, he was not observed to be easily distractible, however, he was very tangential in his responding.

In regard to executive functioning, his reasoning of highly ingrained social information (i.e., Comprehension) and of more abstract conceptual information (i.e., Similarities) was intact. His ability for novel problem-solving (i.e., Modified Wisconsin Card Sorting Test) with limited feedback was within normal limits, however, his performance was notable for a number of perseverative errors. On a task assessing cognitive inhibition (i.e., Hayling Sentence Completion Test) wherein he was required to generate a word to a sentence that does not make sense represented a personal weakness.

N.S. did not demonstrate word-finding difficulties in conversation with intact performance on confrontation naming (i.e., Boston Naming Test). Whilst his ability to generate words according to a specific letter was mildly impaired (i.e., DKEFS-Verbal Fluency), he performed within normal limits on category fluency and category switching.

In terms of his verbal memory profile, his immediate recall of structured verbal information (i.e., WMS-IV- Logical Memory) was shallow, though after a delay he was able to retain a similar amount of information indicating adequate consolidation. His immediate recall of less structured verbal information (i.e., California Verbal Learning Test-II – Short Form) was moderate-to-severely impaired relative to premorbid expectation. Encouragingly his learning profile indicated he benefited from repetition. Following a delay of 20-30 minutes, his recall fell in the low average range. He demonstrated some benefit from prompts and cues. Given his visual difficulties (i.e., right, eye blindness and left eye cataracts), assessment of nonverbal material was deemed to be inherently confounded. Refer to Table 1 for neuropsychological results.

Table 1: Neuropsychological results

	Raw	Scaled/Z-score (%)
Auditory Attention/Working Memory	22	9 (37%ile)
WAIS-IV Digit Span	9	9 (37%ile)
Forward (6)	7	9 (37%ile)
Backward (4)	6	9 (37%ile)
Sequencing (4)		
Executive Functioning		
WAIS-IV Similarities	21	9 (37%ile)
WAIS-IV Comprehension	21	9 (37%ile)
Modified-Wisconsin Card Sorting Test		
Number of categories correct	4	27%ile
Number of perseverative errors	11	16%ile
Number of total errors	20	27%ile
Percent of perseverative errors	55%	18%ile
Hayling Sentence Completion Test	13	4 (2%ile)
Boston Naming Test	52	-0.76z (22%ile)
Letter Fluency (FAS)	17	-1.49z (7%ile)
Category Fluency – Animals	14	-0.56z (29%ile)
Category Switching Fruits/Furniture	10	8 (25%ile)
Memory		
WMS-IV Logical Memory (immediate)	20	6 (9%ile)
Logical Memory II	14	9 (37%ile)
Logical Memory Recognition	20	Cumulative Percentage: >75%
CVLT-II Short Form		
Trial 1	3	-2.5z (40%ile)
Trial 4	4	-2 (2%ile)
Total Trials 1-4	5	-1.5 (7%ile)
Short Delay – Free Recall	15	27T (1%ile)
Long Delay – Free Recall	4	-1.5 (7%ile)
Long Delay – Recognition	7	-1 (16%ile)

Findings from the brief neuropsychological assessment were notable for difficulties with acquisition of new verbal information though this occurred in the context of adequate retention and recognition performances. Assessment was also notable for mildly reduced phonemic fluency. Executive functioning was notable for difficulties with response inhibition, perseveration and problem-solving, particularly on a task wherein he was required to use feedback to guide his behaviour resulting in frustration. Qualitatively, the observed difficulties with self-regulation, perseveration of thought content as well as difficulty incorporating third party feedback and poor turn-taking during conversation were particularly noteworthy.

Despite an absence of information regarding the severity of his head injury, it is acknowledged that the current test data may have been confounded by long-term sequelae of cognitive impairment due to head injury. Similar to patients with head injury, individuals with autism spectrum disorder can also

present with weaknesses across their executive functioning as is evident in this particular case. Whilst the current assessment did not formally assess for an autism spectrum disorder, based on N.S.'s interpersonal style together with qualitative observations of his behaviour during assessment the possibility of an underlying autism spectrum disorder could not be ruled out, with contribution from at least two head injuries.

Commentary

Current literature regarding the impact of brain injury on an individual with autism remains sparse, though with this particular case it was assumed previous head injury had potentially amplified executive system weakness. Due to the large heterogeneity of individuals with autism (low versus high functioning), it has also been difficult to determine an exact cognitive phenotype. Children with autism tend to present with a rigid cognitive style and this is often coupled with processing speed weakness and social comprehension difficulty (Mandy, Murin, & Skuse, 2015). The decision-making skills of individuals with an autism spectrum disorder have also pointed to deficits when compared to normal controls (Luke, Clare, Ring, Redley, & Watson, 2011).

Very little empirical research exists on the interaction between ageing and autism spectrum disorder with respect to decision-making capacity in the legal context, with limited literature available on autism spectrum disorder in the elderly (van Niekerk et al., 2011). There have been findings that older adults with autism spectrum disorder can present with comparable levels of intellect to neurotypical older adults, with the exception of processing speed (Spek, Han, & Geven, 2017), which is in contrast to other studies finding that ageing appears to impact visual memory to a greater degree in individuals with high-functioning autism as compared to normal controls (Geurts, & Vissers, 2012). Furthermore, it remains to be elucidated whether individuals with autism learn to compensate for difficulties with problem solving by developing strategies to manage their day-to-day throughout their life.

Here, neuropsychological assessment was useful in excluding a neurodegenerative condition whilst shedding light on the nature of executive system weakness. However, the combination of previous head injuries, together with a potential autism diagnosis and limited educational achievement meant that it was difficult to solely attribute his presentation to autism spectrum disorder alone.

This particular case highlights the clinical challenges of working with older adults, given that the absence of collateral information precluded a detailed developmental history which would have been useful in firmly establishing a pervasive developmental condition. Notwithstanding that caveat, in this particular case, characterizing N.S.'s cognition within the context of his presentation together with his educational and medical background enabled the multidisciplinary team to view N.S.'s behaviour and unorthodox lifestyle approach with a new set of lenses. Although there is limited evidence regarding the nexuses between ageing and the autism brain, based on the findings of this evaluation, the

multidisciplinary team became far more tolerable and receptive to working collaboratively with N.S. to explore least restrictive lifestyle options.

References:

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