

Eye Movement Desensitization and Reprocessing in a Patient With Asperger's Disorder: Case Report

Donald Kosatka

Celia Ona

Tripler Army Medical Center, Honolulu, HI

Eye movement desensitization and reprocessing (EMDR) has demonstrated efficacy in the treatment of posttraumatic stress disorder (PTSD). This case demonstrates the successful use of EMDR for the treatment of PTSD in a patient with Asperger's disorder and examines potential pitfalls both in detecting and treating PTSD in patients with autism spectrum disorders. Our patient was a 21-year-old female with a diagnosis of Asperger's disorder and multiple traumas stemming primarily from physical abuse at the hands of her peers in school. Treatment was provided in an accelerated format, being provided 3 days a week for approximately 3 weeks leaving at least 1 day in between sessions. After receiving 8 EMDR sessions, her scores improved on the Posttraumatic Checklist with effects maintained at 8-month follow-up.

Keywords: Asperger's disorder; autism spectrum disorder; hemispheric laterality; eye movement desensitization and reprocessing (EMDR); posttraumatic stress disorder (PTSD); accelerated treatment

Asperger's disorder is one of the autism spectrum disorders (ASDs). It was originally described in 1944 by Hans Asperger, an Austrian pediatrician, who noted peculiarities in a subset of children who had normal to above average language abilities (Asperger, 1944). It is characterized by impaired use of social cues, failure to develop proper peer relationships, and a lack of social or emotional reciprocity. Patients may show an obsessional preoccupation with restricted interests, inflexible adherence to routines, stereotyped repetitive mannerisms, and a preoccupation with parts of objects (American Psychiatric Association, 2000). Persons with ASD, including those with Asperger's disorder, have deficits in emotional intelligence (Baron-Cohen & Wheelwright, 2004). These deficits lead to misinterpretation of vocal cues, body language, and facial expressions resulting in odd and incongruous affects. Because of this, persons with ASD can very easily, especially when young, become the object of bullying such as ridicule, verbally assaultive behavior, and physical abuse.

Posttraumatic stress disorder (PTSD) is a pathologic symptomatology that can develop following exposure to overwhelmingly traumatic events. Patients reexperience the events of the trauma often through intense intrusive vivid memories. Nightmares are

common and generally involve elements from the individual's memory of the trauma. Patients may also experience waking recollections of the trauma commonly called "flashbacks." During these recollections, the individual will feel and often act as if the original trauma is going on around them and may, in extreme cases, have perceptual disturbances including visual and/or auditory hallucinations. Other symptoms of the disorder include avoidance of stimuli that may remind them of the trauma including activities, places, and people. Patients may also experience a numbing of responsiveness marked by diminished interest in activities and a generalized detachment from others. Finally, individuals have symptoms of increased arousal including difficulty with sleep, increased irritability, problems concentrating, and an exaggerated startle response (American Psychiatric Association, 2000; Moore, 2008).

Patients with ASD are noted to have reduced hemispheric laterality (Kleinhans, Müller, Cohen, & Courchesne, 2008), a condition that has been associated with an increased likelihood of both developing PTSD and increased severity of symptoms (Chemtob & Taylor, 2003; Forbes et al., 2006; Saltzman, Weems, Reiss, & Carrión, 2006). The prevalence of PTSD in patients with ASD is unknown, however PTSD may

be more difficult to detect in ASD given that some of the symptoms of PTSD (avoidance) overlap with those of ASD. In addition, ASD may mask other symptoms of PTSD, which in turn further hinders the patient. An awareness that some of a patient's symptoms may either stem from or be exacerbated by PTSD can aid in the detection of PTSD in this sub-population of patients. When a patient has PTSD, psychotherapeutic intervention has the potential to ameliorate symptoms and greatly improve the overall social performance and quality of life in persons with ASD.

Psychotherapies with proven efficacy in PTSD present certain challenges with the autistic spectrum patient. In particular, most trauma therapies rely heavily, if not exclusively, on the ability of the patient to depict traumatic events verbally using accurate representations of the emotional experience. Because patients with ASD have deficits with the verbal expression of emotion, eye movement desensitization and reprocessing (EMDR) has a significant advantage when compared to other modalities because the active processing is facilitated nonverbally through the use of bilateral stimulation (BLS).

The literature regarding the treatment of comorbid PTSD and ASD is sparse. To date, there are six case reports of providing EMDR to patients with a diagnosis of ASD. These cases were reported in three case series documenting the use of EMDR for the treatment of patients with PTSD and intellectual disabilities (ID; Barol & Seubert, 2010; Mevissen, Lievegoed, & de Jongh, 2011; Mevissen, Lievegoed, Seubert, & de Jongh, 2011). None of the six cases used eye movements for BLS because the patients were unable to tolerate this modality. Thus, therapists had to use auditory signals, buzzers, or tapping for BLS. Most cases required modification to all phases of EMDR treatment because of difficulties with language and abstract thinking. All cases documented significant behavioral improvement after treatment with EMDR. In one case (Mevissen, Lievegoed, & de Jongh, 2011), the diagnosis of ASD was found, after treatment with EMDR, to no longer apply, highlighting the overlap of symptoms between PTSD and ASD, which can lead to (a) misdiagnosis of ASD in patients with PTSD and (b) masked/untreated PTSD in patients diagnosed with ASD.

Case Presentation

The patient was a 21-year-old White female who had been referred for psychiatric evaluation because of impairing symptoms, which included avoidance

of strangers, difficulty sleeping, and anhedonia. The psychiatrist changed an earlier diagnosis of anxiety disorder not otherwise specified (NOS) to PTSD and referred her for EMDR treatment.

Client History

The patient had a past psychiatric history of Asperger's disorder confirmed by psychological testing at the age of 18 years prior to enrollment in college, and a diagnosis of anxiety disorder NOS given by a previous provider. During psychological testing, she was given the Wechsler Adult Intelligence Scale (WAIS) and the Wide Range Achievement Test (WRAT) and was found to have an average overall IQ with spelling 1 standard deviation below average.

The patient was born after a 40 weeks' gestation by vaginal delivery without complications. She met age-appropriate milestones for motor skills, however did not speak until the age of 3 years. Although she never had a formal psychiatric diagnosis during school, she was enrolled in special education for difficulties with spelling and reading. From a young age, she had difficulty understanding emotional cues, particularly those pertaining to anger and sarcasm, as well as difficulty communicating her own emotional states in general.

She felt that she was close to her parents, especially her mother, while growing up. She had difficulty making and keeping friends and was the often object of abuse, at times severe, by her peers in school. Her trauma history stemmed entirely from abuse at the hands of her schoolmates, and it appears that both the elevated frequency and intensity of the abuse was related to her inability to read facial expressions, body language, and emotional voice cues. These interactions included the patient having bricks and chairs thrown at her, being bodily thrown into a garbage dumpster, having her clothing lit on fire, being held down while being kicked and beaten, and being driven to an isolated location and left. She had no history of sexual abuse and no history of abuse inside the home. Although she had very few friends, she felt particularly attached to her dog, and had never had a romantic relationship.

Medically, she had a history of migraines without aura since the age of 12 years, which was being managed with eletriptan 40 mg as needed (prn) and was not associated with known triggers. She had a history of polycystic ovarian syndrome (PCOS) diagnosed at the age of 16 years for which she used NuvaRing. She had a history of morbid obesity having received a gastric bypass at the age of 18 years with a resultant

decrease in BMI from 39.9 to 24.4. She developed B12 deficiency and iron-deficiency anemia after the surgery, which were being treated with cyanocobalamin 1,000 mcg/ml 1 mg/month intramuscularly (IM) and ferrous sulfate 325 mg by mouth (PO) daily, respectively. She was taking valacyclovir 1,000 mg PO daily for recurrent herpes zoster (shingles) and was taking trazodone 50 mg PO nightly (qhs) for difficulty sleeping. Prior to the EMDR consultation, she was started on Zoloft 100 mg PO daily to help with symptoms of anxiety and depression. Her labs were significant only for a mild elevation in alkaline phosphatase at 130 mg/dl (normal is 38–126 mg/dl).

Pretreatment Assessment

When seen for her interview during the EMDR consultation, she was noted to have difficulty reading social cues, although she had an awareness of her deficit and would, periodically, ask for clarification of the emotional context of interactions with the therapist. She was noted to have stereotypic gestures, which included hair twirling and hand wringing, and was found to have an obsessive interest with anime, which is a popular animation style, originally developed in Japan. There were 10 traumas that she considered to be significant, with Subjective Unit of Disturbances

(SUDs) scores between 7/10 and 10/10, with 0/10 being an emotionally neutral event and 10/10 arousing the most disturbing feelings imaginable (Shapiro, 2001). The therapist used the PTSD Checklist (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993) to evaluate her symptoms. The PCL is scored from 17 (minimum score) to 85 (maximum score), with 50 being the generally accepted cutoff for PTSD. Her PCL score at this time was elevated at 60/85 (see Figure 1).

Treatment Process and Outcome

EMDR was administered according to standard procedures (Shapiro, 2001), using eye movements for BLS. The patient was treated with three EMDR sessions per week (Monday, Wednesday, and Friday) for eight sessions in total. She had some difficulty during the assessment phase of sessions during which the components of the target memory are identified. Specifically, she was nearly unable to put emotions into words such that it might take 30 min of interviewing for her to construct a sentence depicting negative feelings about herself with respect to a particular event. (See the “Discussion” section for related treatment implications.) Events were targeted in order from the least traumatic to most traumatic because the clinician judged this to

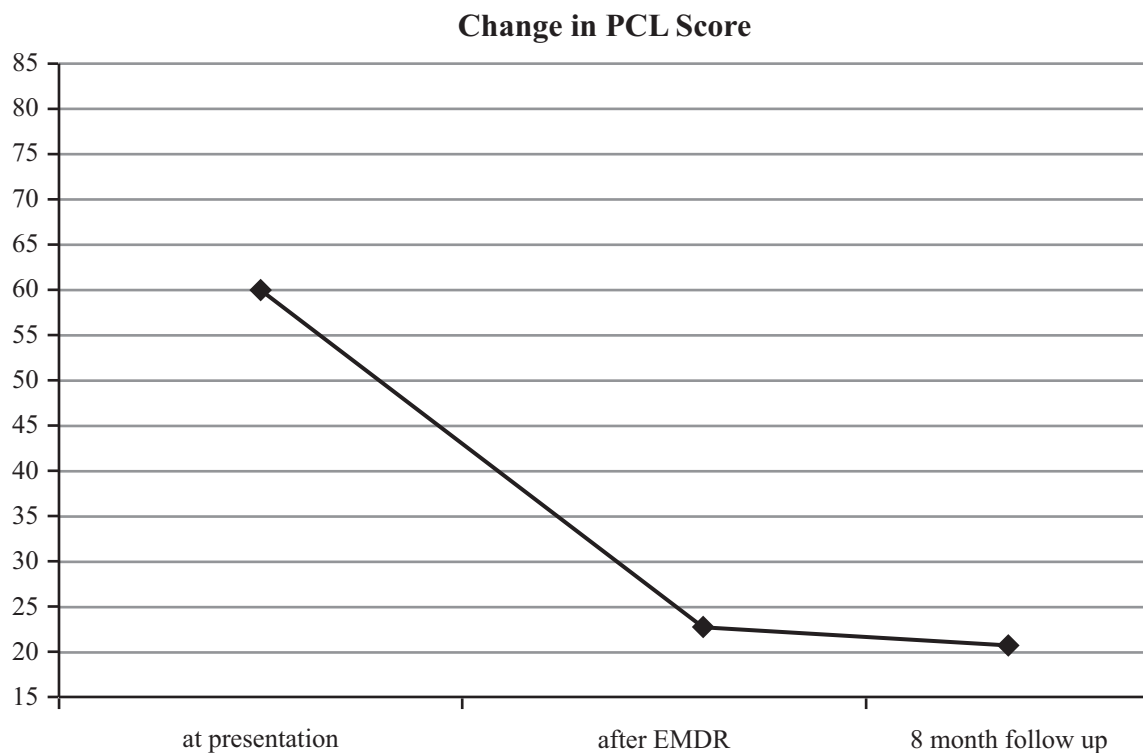


FIGURE 1. PCL = PTSD Checklist, with scores ranging from 17 (minimum score) to 85 (maximum score), with 50 being the generally accepted cutoff for PTSD.

be the best means of avoiding overwhelming abreactions in this patient. The patient was able to tolerate EMDR using eye movements, with the only side effect being unusually vivid dreams occurring on the nights after EMDR. Per the patient's request, her mother was present during all EMDR sessions.

Although it was difficult to ascertain the true extent of the patient's trauma during the assessment phase, themes of extreme emotional pain and isolation emerged during desensitization. In particular, it became apparent that she had reported bullying to authority figures at the time of the abuse and that the negative responses of these individuals had hurt most of all, resulting in a type of learned helplessness wherein she stopped reporting. These themes in the therapy sessions led the patient's mother to have the patient's father take off from work to be present for the fourth session, which was particularly intense. Both parents teared up during desensitization, the father later commenting that he "had no idea that there was so much pain."

By the seventh EMDR session, a generalizing therapeutic benefit was seen such that the SUD score on the seventh trauma was found to be 6/10 (had been 8/10). The eighth trauma, which had been a 9/10, was found to be 4/10 at the start of the eighth session. Assessment at the ninth session found the two worst traumas, which had been both initially been 10/10 on the SUD scale to now be 0/10, evoking no negative emotions whatsoever. EMDR was concluded. Her PCL score at this time was 23/85, which was well lower than the 50/85 cutoff for PTSD and corresponds to an 86% reduction in symptoms commonly associated with trauma-related stress (see Figure 1).

Follow-up

The patient was seen for follow up 8 months after the completion of EMDR. Her PCL score at this time was 21/85. She was noted to have continued difficulty verbally expressing emotions; however, she was well groomed, had good eye contact, seemed jovial, interacted appropriately, and was without hand wringing or hair twirling. She was still taking Zoloft 100 mg PO daily and trazodone 50 mg PO qhs for sleep, although was on no other psychotropics. She was doing well in college, passing all of her classes and having made an "A" in her speech class. She had her first boyfriend whom she had taken home to meet her parents and had been able to tolerate and properly mourn the passing of her dog. As can be seen in Figure 1, our patient experienced marked improvement of symptoms after EMDR, which was sustained at 8-month follow-up.

Discussion

Diagnostic Implications

Because the literature regarding comorbid ASD and PTSD is sparse, this case study is of value, demonstrating several key points with respect to the presentation and treatment of these patients. Our patient's earlier challenges with emotional communication were apparent in the past failure of parents and school officials to adequately recognize the level of her emotional distress. This invalidation contributed to the impact of the trauma.

In spite of the fact that our patient felt that she was close to her parents, they were unaware of the extent of the bullying and did not fully appreciate the severity of the emotional trauma. At times, the patient did go to school officials, however, possibly because of her odd affect, her complaints were generally discounted, and the patient was, at times, even blamed for the mishaps, ultimately resulting in her learned silence. This highlights the fact that children with ASD are less likely to communicate episodic bullying to parents and school authorities. As was the case with our patient, the PTSD symptoms of hyperarousal in the patient with ASD may be less pronounced to the outside observer and the symptoms of reexperiencing may not be communicated to others. These symptoms only became apparent and identifiable as symptoms of PTSD after an extensive psychiatric interview. Because of the impairment in reciprocal social interactions associated with ASDs, symptoms of avoidance from PTSD can be misidentified as part of the ASD, resulting in a misperception of the actual severity of the impairment.

Treatment Implications

Our patient differs from those in the other case studies that reported on the provision of EMDR to treat individuals with ASD (Barol & Seubert, 2010; Mevissen, Lievegoed, & de Jongh, 2011; Mevissen, Lievegoed, Seubert, & de Jongh., 2011). All those participants had intellectual deficits, whereas our patient's intellectual capacity was uncompromised by her ASD. She was able to fully engage in EMDR, using eye movements without any of the modifications noted in the other studies. Her limitations were primarily related to her challenges with verbal expression of emotions and thoughts. Therapy was adjusted to address these needs.

Our patient's therapy was affected in two ways by her difficulty in accurately communicating her emotions. First, during the assessment phase, the patient had difficulty formulating expressions to convey her

negative feeling of self with respect to her specific traumas. Although this is a common difficulty experienced in EMDR, most patients can be guided into an accurate statement in 3–5 min. This patient, however, required no fewer than 10 min, and sometimes as many as 30 min per trauma, to verbalize the emotional statement. Although some therapists might choose to simply omit this part of the protocol when faced with such challenges, this therapist engaged the patient in a thoughtful discussion of these issues, helping her to gain insight into her own emotional processes. He guided her in an examination of the event, considering various aspects of herself to obtain the verbalized negative feeling of self. The therapist assisted the patient through this process using a modified Socratic method, which allowed role reversals so that the patient could question the therapist regarding the meanings and nuances of specific words representing emotions.

Secondly, during the desensitization and installation phases, the period of time between eye movements was generally longer than average, as again, this patient had difficulty verbally expressing emotions. The therapist respectfully allowed long silent pauses so that she could formulate what she wished to say. In spite of the fact that this impairment remained pronounced throughout the course of therapy, her ability to verbalize her emotions improved markedly and likely represented a further benefit of treatment.

In spite of the earlier-mentioned difficulties, this case illustrates the effectiveness of EMDR for a patient with Asperger's disorder. Although she continued to manifest some symptoms of Asperger's disorder, including an unusually intense and obsessive interest in anime, and continuing deficits with emotional cues and accurate emotional expression, her overall functionality was markedly improved after EMDR. She was having age-appropriate social interactions, exuded a never before seen confidence, and was doing well in college in a curriculum that included her having to make speeches in front of her peers. Although some of her initial functional difficulties represented aspects of her Asperger's disorder, most of her impairment was PTSD related, the Asperger's disorder serving to mask the PTSD that delayed treatment. It should also be noted that the effects of the EMDR were not only marked but were also sustained over an 8-month period after which the patient's family moved to another geographic location and she was lost to follow-up.

It should also be noted that treatment for this patient was provided in an accelerated format, being

provided 3 days a week for approximately 3 weeks and leaving at least 1 day in between sessions. The therapist offered this accelerated format because the patient was on winter break from an out-of-state college and was to resume her studies in 4 weeks. The primary advantage to this format was that it allowed the therapist to address all of the patient's traumas within time constraints. The primary disadvantage was that the patient had a subjective sense of being "very tired" by the third session of the week, although elected to continue with the sessions in spite of this problem.

Conclusion

This case study demonstrates several important aspects with respect to ASDs and trauma. First, because of their social isolation/awkwardness and because individuals with ASD are less likely to successfully report abuse, the deficits in ASD make patients especially vulnerable to bullying in the form of verbal and physical assault. Second, the symptoms of PTSD can be both masked by the clinical manifestations of ASD and misinterpreted by clinicians when the patient has a diagnosis of ASD. The case study also demonstrates the effectiveness of EMDR for this patient with Asperger's disorder and illustrates some of the potential difficulties encountered in treatment.

References

- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.
- Asperger, H. (1944). Die "autistischen psychopathen" im Kindesalter. *Archiv für Psychiatrie und Nervenkrankheiten*, 117, 76–136.
- Barol, B. I., & Seubert, A. (2010). Stepping stones: EMDR treatment of individuals with intellectual and developmental disabilities and challenging behavior. *Journal of EMDR Practice & Research*, 4, 156–169.
- Baron-Cohen, S., & Wheelwright, S. (2004). The empathy quotient: An investigation of adults with Asperger syndrome or high functioning autism, and normal sex differences. *Journal of Autism & Developmental Disorders*, 34(2), 163–175.
- Chemtob, C. M., & Taylor, K. B. (2003). Mixed lateral preference and parental left-handedness Possible markers of risk for PTSD. *The Journal of Nervous & Mental Disease*, 191(5), 332–338.
- Forbes, D., Carty, J., Elliott, P., Creamer, M., McHugh, T., Hopwood, M., & Chemtob, C. M. (2006). Is mixed-handedness a marker of treatment response in posttraumatic stress disorder: A pilot study. *Journal of Traumatic Stress*, 19(6), 961–966.

- Kleinmans, N. M., Müller, R. A., Cohen, D. N., & Courchesne, E. (2008). Atypical functional lateralization of language in autism spectrum disorders. *Brain Research*, 1221, 115–125.
- Mevissen, L., Lievegoed, R., & de Jongh, A. (2011). EMDR treatment in people with mild ID and PTSD: 4 cases. *Psychiatric Quarterly*, 82, 43–57.
- Mevissen, L., Lievegoed, R., Seubert, A., & de Jongh, A. (2011). Do persons with intellectual disability and limited verbal capacities respond to trauma treatment? *Journal of Intellectual & Developmental Disability*, 36(4), 278–283.
- Moore, D. P. (2008). *Textbook of clinical neuropsychiatry* (2nd ed.). London, United Kingdom: Hodder Arnold.
- Saltzman, K. M., Weems, C. F., Reiss, A. L., & Carrión, V. G. (2006). Mixed lateral preference in posttraumatic stress disorder. *The Journal of Nervous & Mental Disease*, 194(2), 142–144.
- Shapiro, F. (2001). *Eye movement desensitization and reprocessing, basic principles, protocols and procedures* (2nd ed.). New York, NY: The Guilford Press.
- Weathers, F. W., Litz, B. T., Herman, D. S., Huska, J. A., & Keane, T. M. (1993, October). *The PTSD Checklist (PCL): Reliability, validity, and diagnostic utility*. Paper presented at the 9th Annual Conference of the ISTSS, San Antonio, TX.

Acknowledgments. The views expressed in this publication are those of the authors and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the US Government.

Correspondence regarding this article should be directed to Donald Kosatka, MD, CT, MBA, Child and Adolescent Psychiatry Fellow (F1), Tripler Army Medical Center, 1 Jarrett White Road, Honolulu, HI 96859. E-mail: donald.j.kosatka@us.army.mil