



The 20th Case Cured from Autism: A Child with Neurodevelopmental White-Matter Dysmaturation

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Abstract

Background: Autism disorder is a complex, lifelong neurodevelopmental condition characterized by impairments in social interaction, communication, and repetitive behaviors. The diagnosis is primarily clinical and includes various subtypes such as Asperger syndrome, Kanner syndrome, typical and atypical autism. Traditional treatments have focused on symptom management, though a definitive cure has remained elusive. Recently, however, cases have been reported where patients have achieved significant improvement with a novel therapeutic approach.

Objective: This study presents the 20th global case of autism in which the two major diagnostic features (poor social interaction and communication) were cured through an individualized treatment regimen including intramuscular cerebrolysin as the main curative agent. The study also examines the brain MRI findings associated with autism in this patient.

Methods: A 7-year-old male patient presented with poor speech development, hyperactivity, repetitive movements, and deficits in social responsiveness. Clinical evaluation indicated typical autism without significant intellectual impairment. MRI scans revealed abnormal white-matter signal changes, specifically in the peritrigonal regions. The patient was treated with intramuscular cerebrolysin, oral piracetam, and citicoline for two months, followed by a continuation of therapy.

Results: After three months of treatment, the patient showed significant improvement in responsiveness, cognition, and repetitive behaviors. The patient was responsive to his name, made eye contact, and demonstrated the ability to copy simple shapes, indicating a marked improvement in social and cognitive functions.

Conclusion: The patient represents the 20th global case of autism significantly improved with this novel therapeutic approach. Brain imaging revealed white-matter abnormalities consistent with delayed myelination. While the results are promising, long-term rehabilitation and support are essential for addressing the ongoing cognitive, behavioral, and social challenges associated with autism.

Keywords: Autism; Brain MRI; New Curative Therapies

Introduction

Autism disorders (Figure 1A) are complex, lifelong conditions marked by early impairments in social interaction and communication. The diagnosis is clinical, based on hallmark features like poor responsiveness to one's name, lack of eye contact. Delayed speech development, and repetitive behaviors are important associated features of autism disorders. Autism's variability leads to different subtypes based on speech and cognitive development.

The mildest subtype, characterized by acceptable speech development, was first documented in 1925 by Soviet psychiatrist Grunya Efimovna and later referred to as Asperger syndrome by Lorna Wing in 1981.

The "Classic type," also known as Kanner syndrome, was described in 1943 by Leo Kanner. While patients with this subtype often exhibit normal or high intelligence, they typically experience significant delays in speech development.

Autism disorders have increasingly been categorized as pervasive developmental disorders, particularly in the United Kingdom, since the 1980s. Diagnosing the subtype of autism can be challenging, especially when it comes to assessing intelligence.

Therefore, in 2013, the American Psychiatric Association adopted the term Autism Spectrum



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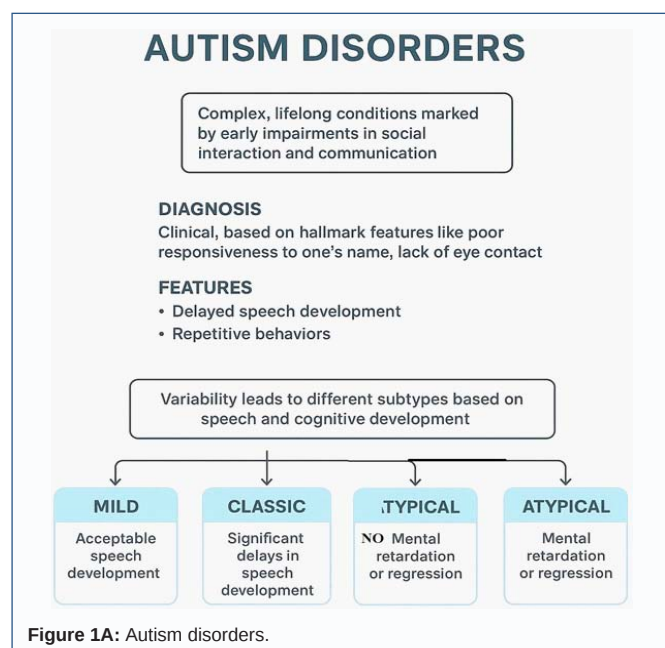
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Disorder to encompass the full range of autism types. While some children with autism have normal or above-average IQs, others may have mental retardation.

Typical autism is not usually associated with significant intellectual impairment and can often be identified through adaptive behaviors, such as the ability to use utensils or manage basic self-care tasks. Atypical autism, on the other hand, refers to autism that is associated with mental retardation or regressive autism, where children initially acquire social and communication skills but later lose them.

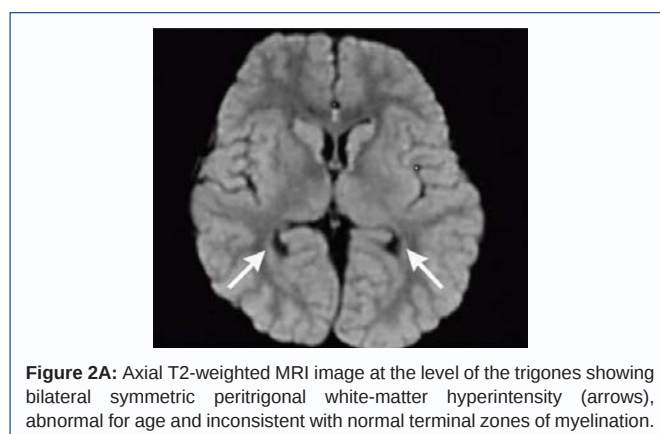
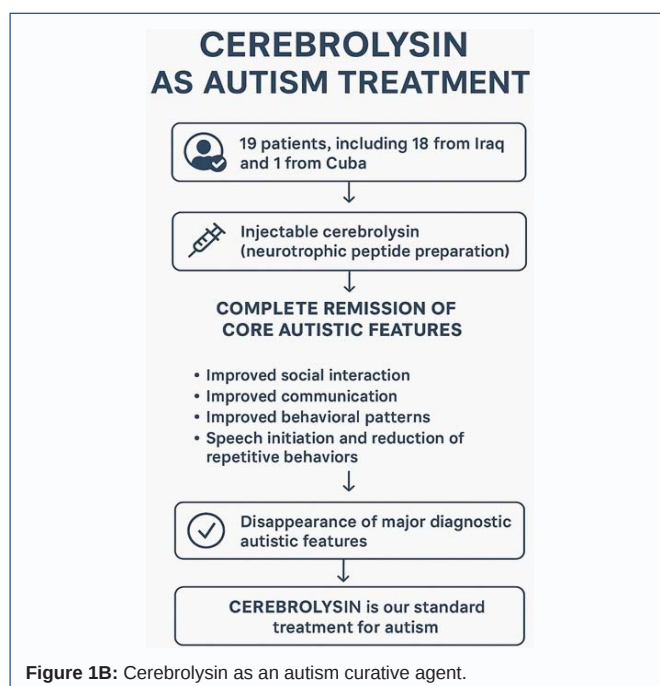
Traditionally, treatments for autism have focused on managing symptoms, using behavioral interventions and medications like neuroleptics, baclofen, and ondansetron. However, a true cure for autism has remained elusive until recent developments. For decades, autism disorders have been considered lifelong disorders without curative therapies, despite a variety of medications that have been tried, including pyridoxine, magnesium, thiamine, biotin, folic acid, and omega-three.

During the previous decade, at least 19 patients have been reported in the literature including 18 patients from Iraq and one patient from Cuba have achieved cure of the major autistic diagnostic features with the use of a new therapeutic approach using individualized courses of intramuscular cerebrolysin as the main curative agent (Figure 1B).

Autism disorders are a heterogeneous group of disorders that are generally regarded as a functional neurodevelopmental disorder, and diagnosed clinically brain imaging is not routinely used [1-20].

A 2020 study reported that brain imaging abnormalities in patients with autism disorders include arachnoid cyst, agenesis of the corpus callosum, evidence of vasculitis (In Heller syndrome), and brain imaging abnormalities related to a coexisting condition such as cerebral palsy [21]. Novel association of autism with congenital non-syndromic cavum septum pellucidum has been recently reported [22].

In this paper, we are reporting the 20th case of autism cured from the two major diagnostic features of autism and his brain magnetic



imaging studies showed white-matter signal abnormalities.

Patients and Methods

A 7-year-old boy was seen during October, 2025 because of poor speech development, hyperactivity and repetitive movements. At the clinic he was had poor response to his name and poor eye contact. As he was not responsive to the doctor, it was not possible to make him hold a pent to scribble or copy a circle.

In our clinical practice, we describe an autistic patient with 100% level, behaving at the clinic at the doctor is invisible to them. However, the autistic features at the patient were estimated at 90%.

There was no history of seizures or neurodevelopmental regression. However, the adaptive skills were good including feeding himself and going to bathroom. Therefore, he received the diagnosis of typical autism (Without significant mental retardation).

Magnetic Resonance Imaging (MRI) sequences included T1-weighted, T2-weighted, FLAIR, DWI, and ADC imaging findings included (Figure 2):

- Bilateral, symmetric peritrigonal and deep white-matter T2/

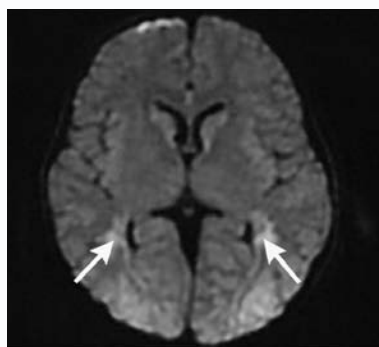


Figure 2B: Axial FLAIR image confirms persistent peritrigonal white-matter hyperintensity, supporting abnormal white-matter maturation.

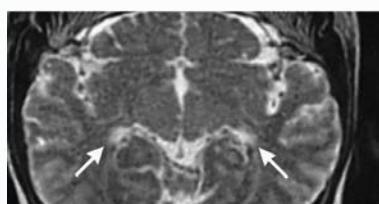


Figure 2C: Coronal T2-weighted MRI demonstrating symmetric posterior white-matter signal abnormalities with preserved cortical architecture.

FLAIR hyperintense signal changes.

- The distribution and persistence of these white-matter signal abnormalities are abnormal for age and not consistent with normal terminal zones of myelination at 7 years.
- The cerebral cortex demonstrates normal gyral pattern and cortical thickness, with no evidence of cortical malformation.
- No focal space-occupying lesion is identified.
- No areas of restricted diffusion to suggest acute ischemia.
- The basal ganglia, thalami, brainstem, and cerebellum appear structurally preserved.
- Ventricular system and extra-axial CSF spaces are within acceptable limits, with no hydrocephalus.
- Midline structures are intact with no shift.
- Sella and parasellar regions are unremarkable.
- Cerebellopontine angles are normal.

At 7 years of age, cerebral white matter, particularly peritrigonal regions should demonstrate mature myelination with low T2/FLAIR signal. Persistent hyperintensity at this age reflects:

- Delayed myelination
- Dysmyelination
- Or altered white-matter microstructure

Results

The patient was treated based on our extensive published experiences with autism [1, 2, 5, 7, 10-12, 16, 17, 20, 21]. First three months treatment included:

Intramuscular cerebrolysin (The main curative agent) 3 ml every

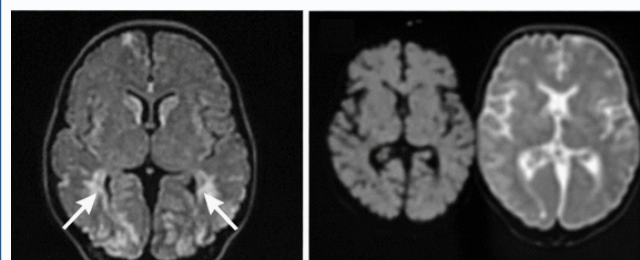


Figure 2D: Diffusion-weighted imaging and ADC maps show no diffusion restriction, excluding acute ischemic or inflammatory white-matter injury.

third day in the morning (Ten doses monthly).

Oral Piracetam 800 mg once daily in the morning.

Oral citicoline 100 mg daily in the morning.

After two months treatment, on the 27th of October, 2025, the parents reported marked improvement in responsiveness, cognition, and repetitive movements. At the clinic, the patient was responsive to his name and had normal eye contact. It was possible with help of the mother to convince him to copy a circle, and also tried to copy a square, but it was not good.

The decision was made to continue cerebrolysin treatment for one additional month and to maintain oral piracetam therapy for several months.

When the patient was evaluated on April 11, 2026, he responded appropriately during the consultation, including making eye contact and shaking hands with the physician. His speech had improved; however, he continued to have difficulty copying a square, consistent with a developmental level of approximately four years.

This delay was attributed to the loss of several years of typical childhood learning prior to the improvement of his autistic features.

Discussion

The patient in this report represents the 20th global patient with autism cured from the two major diagnostic features of autism.

Cerebrolysin, piracetam and citicoline have been used safely in a variety of childhood neurological and neuropsychiatric disorders [23-33].

While the results are promising in this patient, it is crucial to emphasize long-term support and rehabilitation to address cognitive, behavioral, and social challenges.

Magnetic resonance imaging in children with autism disorder is frequently reported as normal or showing nonspecific findings. However, brain MRI in this patient showed bilateral symmetric peritrigonal and deep white-matter signal abnormalities that are abnormal for age, most consistent with delayed or disordered white-matter maturation.

Terminal zones of myelination represent the last areas of physiologic myelination, typically involving the peritrigonal white matter. Multiple studies have demonstrated that these zones:

- Are commonly seen in infants
- May persist into early toddlerhood
- Resolve by 2-3 years of age in neurologically normal children

Persistence beyond this age cannot be considered as normal finding, and in the contest of this patient, it is considered as neurodevelopmental white-matter dysmaturation associated with autism [34].

Conclusion

The patient represents the 20th global case of autism significantly improved with this novel therapeutic approach. Brain imaging revealed white-matter abnormalities consistent with delayed myelination. While the results are promising, long-term rehabilitation and support are essential for addressing the ongoing cognitive, behavioral, and social challenges associated with autism.

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