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Case Report

Atypical presentation of first-episode psychosis: pedal edema in a patient with autism

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ABSTRACT

First episode psychosis (FEP) in adolescents with autism spectrum disorder (ASD) presents unique diagnostic and management challenges due to overlapping symptomatology. Physical findings such as pedal edema are uncommon in early psychosis and warrant careful evaluation, particularly prior to initiating antipsychotic treatment. We report a case of a 16-year-old male with ASD who presented with FEP characterized by catatonia, behavioral rigidity, reduced sleep, and social withdrawal. On examination, he exhibited bilateral pitting pedal edema without evidence of systemic or pharmacologic causes. Collateral history revealed prolonged standing behavior due to motor immobility (catatonia) and behavioral abnormalities. Laboratory and imaging investigations were unremarkable. The edema was attributed to dependent fluid accumulation secondary to catatonic posturing. The patient was initiated on long-acting injectable aripiprazole and supportive measures, including compression therapy and hydration, with close monitoring. This case highlights the importance of distinguishing behavioral and physical manifestations of psychosis from baseline ASD traits and other medical conditions. Pedal edema occurring before antipsychotic treatment is uncommon and warrants a thorough evaluation to prevent inadvertently attributing it to medication side effects. Catatonia-related posturing may be an underrecognized contributor to dependent edema in this population. This case highlights the challenges of diagnosing psychosis in autism, where symptoms may overlap with baseline traits. Catatonia presenting as prolonged standing might result in pedal edema. Comprehensive history and multidisciplinary assessment enables accurate diagnosis and treatment, emphasizing the need for careful monitoring in this population.

Keywords: First episode psychosis, Autism spectrum disorder, Catatonia

INTRODUCTION

Autism spectrum disorder (ASD) significantly increases the risk of developing psychosis and makes early identification more challenging. Meta-analyses indicate that approximately 11-12% of individuals identified as being at clinical high risk for psychosis (CHR-P) already have a diagnosis of ASD.[1,2] First-episode psychosis (FEP) typically arises during adolescence or early adulthood, a crucial stage of neurodevelopment. Early detection and intervention are vital, as delays in treatment are associated with poorer outcomes.[3] In adolescents with autism spectrum disorder (ASD), diagnosis is especially challenging due to overlapping features such as social withdrawal, atypical behaviors, and communication difficulties, potentially masking early psychotic symptoms and lead to misdiagnosis.[4]

ASD and psychosis share neurodevelopmental vulnerabilities, including disrupted brain connectivity, synaptic function, and social cognition pathways. Disruptions in fronto-temporal networks, along with shared genetic influences on brain development and synaptic function, underlie overlapping cognitive and behavioural traits.[3,4] These shared mechanisms often result in atypical presentations, underscoring the need for careful, personalized evaluation.[5]

Although peripheral edema is not typically a feature of psychosis, it becomes a clinically important concern upon the initiation of antipsychotic treatment. Atypical antipsychotics may precipitate or exacerbate dependent edema through mechanisms involving vascular tone and fluid balance. Olanzapine, risperidone, quetiapine, and clozapine are most frequently implicated in such cases.[6] The presence of lower limb swelling before treatment adds a layer of clinical complexity, requiring careful consideration to initiate antipsychotics without worsening the edema. According to available literature, our case appears to be one of the earliest documented cases of an adolescent presenting with first-episode psychosis and pedal edema prior to any exposure to antipsychotic medication.

This report highlights the clinical reasoning and diagnostic approach necessary when first-break psychosis presents with pedal edema in adolescents with autism. Careful assessment is required to distinguish the cause of swelling from antipsychotic side effects or psychosis-related inactivity. A structured, stepwise management plan was used, including thoughtful antipsychotic selection, non-pharmacologic interventions, and close monitoring. This approach aims to mitigate edema risk while adhering to early intervention principles. The case offers clinicians a practical framework for managing a rare but increasingly relevant clinical scenario in this population.

CASE REPORT

A 16-year-old male with an existing medical condition of ASD presented to the clinic with a first episode of psychosis, characterized by catatonia, marked behavioral rigidity, reduced sleep for several weeks, and progressive social withdrawal. The patient was occasionally non-verbal, maintained fixed postures, and exhibited prominent anxiety, particularly when attempts were made to redirect or engage him. He had poor insight into his condition, and denied any distress despite evident functional deterioration. Collateral history from family revealed that he had been standing for prolonged periods, often refusing to sit or lie down for several hours at a time.

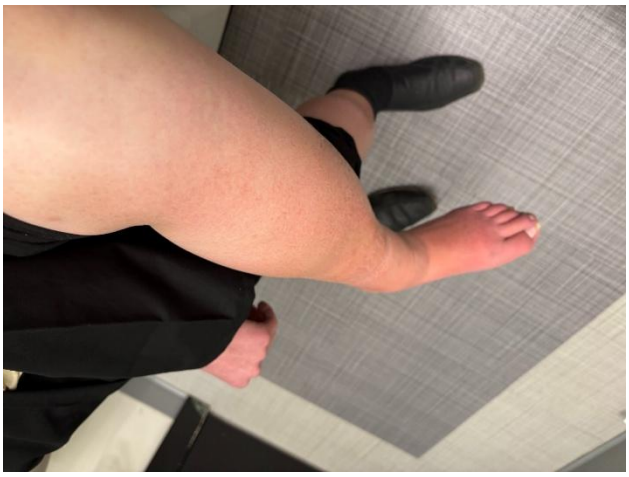

Figure 1: Physical examination demonstrating bilateral pedal edema.

The patient was cooperative during examination and showed no signs of aggression, however, his speech was limited, maintained poor eye contact, and often gave brief, one-to-three-word responses. Important to note, there was no history of known substance use. Upon physical examination, the patient elicited bilateral pedal edema of pitting type (Figure 1). The swelling was moderate, symmetric, and extended to the distal third of the shin.

A thorough medical evaluation with baseline blood workup, including complete blood count, comprehensive metabolic panel, thyroid panel, renal and liver function tests, c-reactive protein, urinalysis, and serum albumin, were within normal limits. Electrocardiogram (ECG) and lower limb venous doppler ultrasound indicated no evidence consistent with deep vein thrombosis or cardiac dysfunction. No medication or dietary cause for fluid retention was identified. The pedal edema was attributed to prolonged dependent positioning due to persistent standing behavior associated with catatonia and psychosis.

The patient was initiated on aripiprazole intramuscular long-acting injectable 675 mg once a month, with diphenhydramine 50 mg, tablet, as needed. Supportive measures included compression stockings, hydration, and monitoring of vital parameters.

A comprehensive psychological evaluation conducted three years prior confirmed a diagnosis of level 1 autism spectrum disorder. He demonstrated an average overall cognitive functioning, with a full-scale intelligent quotient (IQ) of 99 (47th percentile) on the Wechsler intelligence scale for children (WISC-V). However, his academic achievement was in the low average range, as indicated by a total achievement score of 80 (9th percentile) on the Wechsler individual achievement test (WIAT-4), with particularly low scores in reading and written expression. Minimal repetitive behaviors were observed, and there was no evidence of fixated interests. Personality subscales on the Millon adolescent clinical inventory (MACI-II) were within normal limits.[19-21]

DISCUSSION

Diagnosing first-episode psychosis (FEP) in individuals with ASD remains a complex clinical task due to overlapping symptomatology. Core features of ASD, including social withdrawal and communication difficulties, can obscure the early signs of emerging psychosis. Additionally, restricted interests and behavioural rigidity can contribute to further delays in recognition and intervention.[7,8] Neuropsychological deficits commonly observed in first-break, medication-naive adolescents with psychosis, such as difficulties with memory, attention, and executive function, can be challenging to distinguish from the baseline cognitive profile seen in individuals with ASD.[9] These diagnostic challenges highlight the importance of comprehensive and nuanced clinical assessment.

In the case presented, a 16-year-old male with level 1 autism spectrum disorder (ASD) exhibited a clear first episode of psychosis, marked by catatonia, prolonged standing behaviour, reduced sleep, and progressive social withdrawal. He was intermittently nonverbal, displayed fixed posturing, and resisted redirection-features that could easily be misconstrued as part of ASD alone. However, prior to this episode, the patient demonstrated relatively stable functioning with intact cognitive abilities, minimal ritualistic or repetitive behaviours, and no history of significant developmental delays. Collateral history revealed prolonged refusal to sit or lie down, contributing to the development of bilateral pedal edema. On evaluation, laboratory and imaging studies were unremarkable, and no pharmacologic or systemic cause for the edema was found. He was started on aripiprazole long-acting injectable, diphenhydramine and supportive care. This case illustrates how subtle changes in behaviour and functioning, particularly when interpreted through detailed family observations, can signal the onset of psychosis in individuals with ASD. The case highlights how immobility related to catatonia can lead to secondary physical symptoms.

Historical perspectives support the idea that neurodevelopmental anomalies may precede schizophrenia, and emphasize the need for standardized diagnostic approaches.[10,11] The dual diagnosis of ASD and psychosis is also associated with worse clinical outcomes and greater diagnostic complexity.[12] The diametrical social brain theory offers a potential explanatory model, suggesting that autism and psychosis represent opposing profiles of social cognitive functioning, which may influence clinical presentation.[13]

An additional consideration this case provides is the potential for antipsychotic-induced edema. Risperidone, commonly used in both ASD and psychosis, has been linked to rare instances of peripheral edema through mechanisms such as alpha-1 adrenergic blockade, serotonin 5HT2A antagonism, and dopamine D2 antagonism affecting vascular and renal regulation.[6] Similar effects have been reported with other second-generation antipsychotics. Olanzapine has been associated with peripheral and facial edema, whereas ziprasidone has been linked to pedal edema.[14,15] Additionally, quetiapine, when combined with valproate, has been reported to cause dose-related pedal edema.[16] Although the edema in this patient was attributed to prolonged immobility from catatonia, the broad range of antipsychotics associated with similar presentations underscores the importance of a careful differential diagnosis.[17]

Aripiprazole was chosen for its favourable side effect profile, including a lower risk of edema, and its partial dopamine D2 agonism, which may reduce extrapyramidal and metabolic side effects. The long-acting injectable formulation was appropriate given the patient's poor insight, limited verbal communication, and anticipated challenges with medication adherence. In the setting of catatonia and functional decline, early antipsychotic initiation was essential, and aripiprazole provided an effective and well-tolerated treatment option.[18].

CONCLUSION

This case highlights the difficulty of diagnosing psychosis in individuals with autism spectrum disorder, in which signs such as catatonia and changes in behaviour can be mistaken for existing traits. The development of pedal edema, later linked to immobility, shows how physical symptoms can arise from psychiatric conditions. Collateral history was essential in identifying a decline in functioning and behaviours suggestive of psychosis. A careful, team-based assessment supported accurate diagnosis and appropriate treatment. This case reinforces the need for close monitoring and individualized evaluation when new symptoms appear in this population.

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