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Review Article

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Comorbid Autism and Schizophrenia are Bowel Complaints Somatic Delusions?

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Abstract

Autistic spectrum disorders and schizophrenia are highly comorbid. Both entail socioemotional deficits so the additional diagnosis of schizophrenia requires the emergence or substantial worsening of psychotic and features for a month, or less if they are successfully treated. This manuscript illuminates the potential for the misdiagnosis of adult ASD as schizophrenia when patients are evaluated cross-sectionally without developmental information. Moreover, worsening suspiciousness in an adult with childhood ASD upon the development of severe gastrointestinal symptoms were diagnosed as paranoid and somatic delusions, leading to a diagnosis of schizophrenia, years of ineffective antipsychotic medication treatment and institutionalization. His GI symptoms predominated his course. Upon receiving information on his childhood developmental condition and adult functioning his diagnosis was reformulated as ASD. He was placed on probiotic treatment, taken off all psychiatric medications and improved across all domains and was discharged to a supervised residence. The so-called delusions evidenced his lifelong suspiciousness and GI condition. Arguably, symptoms due to a medical disorder do not fulfill diagnostic criteria for schizophrenia at any rate. In addition to elucidating how some ASD symptoms are not evidence of psychosis this report highlights the improvement associated with probiotic treatment and the discontinuation of psychotropic medications in an adult with ASD.

Keywords: Autism spectrum disorders •Somatic domplaints •Gut brain axis •Probiotics •Personalized treatment •Misdiagnosis

Introduction

Schizophrenia and Autism Spectrum Disorders (ASD) are highly comorbid, with a recent meta-analysis finding the prevalence of ASD in individuals with schizophrenia ranged from 3.4 to 52% [1]. A DSM-5 autism diagnosis rests on deficits in two of three social communication areas (social-emotional reciprocity; nonverbal communication; and developing, maintaining, and understanding relationships), and two of four different types of restricted, repetitive patterns of behavior, interests, or activities (stereotyped or repetitive motor movements, object use or speech; insistence on sameness, routines, or ritualized patterns of verbal or nonverbal behavior include eating same food every day; highly restricted, fixated or intense interests including perseverative interests; abnormal sensitivity to sensory input). The features commence in early childhood are associated with functional difficulties, and are unexplained by an intellectual disability. By contrast, schizophrenia is diagnosed in the late teens or early adulthood, and specifically requires a decline in established function and three symptoms, at least one of which is a psychotic symptom (delusions, hallucinations, disorganized speech) and others include possibly grossly disorganized or catatonic behavior and negative symptoms.

Despite the different ages when these conditions are evident, they both entail functional deficits and socioemotional symptoms, considered to be negative symptoms in schizophrenia. For persons having a history of ASD or a communication disorder in childhood onset, a DSM-5 diagnosis of schizophrenia requires prominent delusions or hallucinations for at least 1 month or less if successfully treated, in addition to the other criteria. Unfortunately, perceptual disturbances and odd or suspicious behavior exhibited by some persons with ASD is often evaluated as psychotic or disorganized behavior, especially in adulthood if childhood history is not considered, unavailable or sparse.

Another important exclusion for a schizophrenia diagnosis occurs if symptoms are attributable to another medical condition. Notably, significant Gastro Intestinal (GI) symptoms are prominent in ASD, including abdominal pain, cramping and bloating, alternating diarrhea or constipation and food intolerance [2]. Recent work shows these symptoms can be associated with a significantly different gut microbiome species (dysbiosis) which improve in association with probiotic treatment [3,4]. The plausibility of gut origins for autistic symptoms is further supported by the emergence of autistic-like symptoms in sterile mice that received stool transplants from children with ASD [5]. Finding improvements in ASD symptoms from alterations of the gut microbiota are encouraging [6-9] and should impact the conceptualization of symptoms that occur in the presence of frank GI complaints as plausibly due to a medical condition.

As well, a diagnosis of schizophrenia usually precipitates treatment with antipsychotic medications to which the psychotic symptoms experienced by some persons with ASD do not generally respond. Antipsychotics are only approved and efficacious only for irritability, aggression and self-injury, hyperactivity and stereotyped behavior in ASD [10-12]. The consequential weight gain, sedation, tremors and motor side effects of these medications frequently offsets any improvements, so their use needs to be carefully considered [13].

About the Study

These issues are well illustrated for Mr. V whose first contact with psychiatric services occurred after the onset of severe GI upset, pain and diarrhea in his late 20's which he attributes to Chron's Disease. There

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after he became suspicious that his employer was conspiring with the FBI, barricaded himself in his apartment, made multiple calls to the police and sent threatening letters to the FBI. He was brought to the psychiatric emergency room for evaluation. Suspicious that his siblings were involved in the plot, he denied them contact with the clinical team. He reported being allergic to many foods that could cause him to die of anaphylaxis. The mental health team considered the food-related symptoms and his conspiracy fears to be acute delusions. In addition, he displayed socioemotional deficits, was unable to work and had poor self-care. He was diagnosed with schizophrenia and admitted to an acute care facility.

Course: He was little improved on discharge, remaining preservative about his GI symptoms, still deemed to be somatic delusions as medical work ups and skin tests for allergies were negative. He was maintained on antipsychotic medications and followed as an outpatient. He had multiple recurring psychiatric hospitalizations prompted by his suspiciousness and “delusional” complaints of food, drug, and environmental allergies. He never experienced hallucinations, perceptual disturbance, thought disorder or disorganization.

On an admission prompted by these same symptoms at age 40 years, he was more combative. He consistently denied having a psychiatric diagnosis, repeatedly shouting that he was being "wrongfully imprisoned." He became very hostile to the clinical staff, stating that he only had food allergies and wanted to be discharged. He was deemed to have treatment refractory psychosis of schizophrenia and transferred to a long-term care facility.

Transfer to long-term care: On the new unit he would only discuss his somatic complaints and chronic pain and nothing further. After some months he responded to every question by saying he was “not well,” without any elaboration. He consumed only steamed green vegetables without seasoning, skinless chicken breast and gluten free cereal without milk. His laboratory tests were all within normal limits. He maintained a weight of about 130 pounds and a BMI of 21.

His showed no clinical improvement from his initial treatment with olanzapine up to 30 mg PO even after 5 mg of haloperidol was added for 10 weeks. Numerous other antipsychotic and other medication trials were conducted over several years without effect. He eventually remained on 900 mg lithium/day and 300 mg clozapine/day. The sole topic he would discuss in psychotherapy sessions was his food allergies and GI complaints, for which many additional consultations showed no cause. He had had no social interactions on the unit but as his paranoia towards his siblings lessened, he permitted them to speak with his care team for the first time.

Additional History-His siblings described his childhood behavior and the team learned of his childhood diagnosis of pervasive development disorder. Additional history revealed that he graduated from community college and held a succession of clerical positions despite the persistence of all of his symptoms. He was eventually let go from each job because of his argumentative nature and suspicions that his coworkers were conspiring against him. Following his schizophrenia diagnosis he did not return to employment.

Reformulation: After the siblings disclosed Mr. V’s childhood diagnoses his symptoms were reformulated. His evident deficits in social communication across multiple contexts, deficits in ability to maintain relationships and inflexible adherence to routine, were appreciated as a stable and more significant feature of his developmental disability and not negative symptoms of schizophrenia. Special attention given to the F criteria for DSM-5 schizophrenia, which requires at least one month of new or greatly exaggerated psychotic symptoms for someone with ASD. The history revealed that his suspiciousness was persistent from childhood, likely owing to his difficulties in interpreting social clues and the intentions of others.

At his first admission, the suspicious symptoms were considered paranoid delusions when he believed his employer and siblings were conspiring with the FBI. His GI complaints were also consistently evaluated as somatic delusions. Neither his suspiciousness nor his somatic symptoms showed any improvement from medication and he remained solitary, perseverative and preoccupied over control of his diet. Consistent with adult autism, Mr. V was solitary, spending most of his time reading alone without spontaneous interaction with peers or staff. He rigidly needed to eat at specific times and controlled his food intake. He frequently exhibited stereotypical rocking motions. His only activity was writing poetry about social injustices, some of which he sent to federal organizations. Notably, his persecutory delusions are common in higher functioning patients with ASDs and he did not evidence perceptual disturbances, thought disorder or disorganization, so his presentation is consistent with adult expressions of ASD [14-16].

His diagnosis was changed to ASD. During subsequent team meetings, the dietary and clinical staff decided to initiate probiotic therapy, based on reports in the literature [7]. Thus, Lactobacillus acidophilus (Bacid) oral capsules were begun daily, in addition to 900 mg lithium/daily and 300 mg clozapine/daily.

Within weeks on initiation of Bacid oral capsules, Mr. V was more willing to consume novel foods, incorporating one new food each week into his diet. The intensity and frequency of his somatic complaints greatly decreased. He demonstrated a fuller and more reactive affect, and exhibited more spontaneous interactions with staff and peers. He was free from any gastrointestinal symptoms within a several months and was slowly tapered off all psychiatric medications without any resurgence of psychiatric symptoms. He was discharged 3 months later to a supervised residence. His record noted that the diagnosis of schizophrenia was erroneous. The outpatient team introduced social skills training with moderate success, such as interacting with peers in groups. Several years hence, he remains in a supervised residence with no complaints and has not had any re-hospitalizations.

Discussion

This compelling case illuminates the potential for the misdiagnosis of adult ASD as schizophrenia, particularly when persons are evaluated cross-sectionally without developmental information. In this case worsening suspiciousness and somatic complaints that accompanied worsening GI symptoms were mistakenly conceptualized as paranoid and somatic delusions. He consequentially received a diagnosis of schizophrenia, years of ineffective antipsychotic medications and institutionalization.

In addition to genetic causes, causes of ASD include fetal exposure to drugs, stress, environmental chemicals, maternal infection, and most pertinent to this case, dietary factors and the gut microbiome [8, 9, 17-19]. Given that dysbiosis is associated with symptom severity in some persons with ASD and that the symptoms can be ameliorated by probiotic treatments, the associated symptoms might be considered as having underpinnings in a medical disorder, which was not the practice when this case was diagnosed. Attention to eating disorders might be appropriate for patients in the schizophrenia syndrome as well, as those with premorbid eating disorders have greater psychiatric symptoms but more preserved cognition, demonstrated in adult cases and in those with prodromal symptoms [20,21].

Functional disability can be severe in the context of a psychotic disorder that is due to another medical condition but can improve substantially with successful resolution of the condition. This was the result for the presented case, who also improved in social interests and with reduced stereotypic behaviors. Only a fifth of physicians recommend probiotic treatment in children diagnosed with ASDs consistent with the still-limited evidence in its efficacy [6]. However, numerous studies suggest the relationship between GI symptoms and mechanisms of the autistic disease process [8]. No negative effects of probiotics are demonstrated and ASD is a severe condition, so clinical use can be reasonably justified [22].

Conclusion

All too often apparent psychotic symptoms are a rationale for making a diagnosis of schizophrenia, rather than a careful evaluation of the overall course and developmental conditions. This being said, the actual comorbidity of schizophrenia and ASD is not to be discounted. The two conditions share many susceptibility genes and risk factors. However, the comorbidity condition may be a specific subtype of schizophrenia with a distinct phenotype for which specific treatments can be developed so more research is needed on comorbid ASD and primary psychoses.

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