

# Diagnostic Characteristics of Psychosis and Autism Spectrum Disorder in Adolescence and Adulthood. A Case Series

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## Introduction

The relationship between psychosis and autism spectrum disorder was present since the first definition of “autism” itself. Indeed, Kanner, in his description of the first autistic patients, takes the term autism from Bleuler, who had collocated this symptom within the core clinical characteristics of schizophrenia. Initially and until the DSM III, the complex relationship between schizophrenia and autism have been characterized by an almost complete overlapping between childhood schizophrenia and autism disorder. This overlapping was followed, later, by a division of these two disorders. Nowadays, in the DSM 5, it is possible to define comorbidity between autism and schizophrenia when in a patient are present both the positive symptoms of schizophrenia (SCZ) as well as the characteristics of the autism spectrum disorder (ASD). Indeed, numerous are the neurobiological links between SCZ and ASD, in particular at a genetic level [1-5].

However what are the clinical relationships between psychotic disorders and ASD? What are the different clinical characteristics of this possible comorbidity? Often, there is a possibility of a misdiagnosis of the ASD during adolescence-adulthood because of a difficulty in differentiating ASD from psychotic disorders [6]. In the following paper we will describe, through case series, the possible clinical characteristics found in the comorbidity between psychotic disorders and ASD. These descriptions should be useful to distinguish between:

- Misdiagnosis of psychosis in ASD,
- Autistic pseudo-psychosis,
- Transitory reactive paranoid psychosis,
- Comorbidity of ASD and paranoid personality disorder,
- Schizophrenic evolution of an ASD
- Affective psychosis, especially in bipolar disorder.

## Case Series

### Schizophrenic misdiagnosis

Here we describe the case of a 64 years old man, who had been treated in Center of General Psychiatry (CSM) since he was 15 years old with a diagnosis of paranoid schizophrenia. After a few years as inpatient in a psychiatric hospital, he was dismissed and underwent a neuroleptic therapy that continued until now. We first met this patient in our Centre for Autism Spectrum Disorder in Adulthood because he was invited to come by his sister, who has a son with an Asperger

syndrome diagnosis. During our meeting with the sister, she tells us that she recognizes in her son the same characteristics found before in the brother (our patient) during his childhood. During the patient history, different stereotyped behaviours emerge and also a history of motor oscillations during childhood. These oscillations were so marked that his school peers called him “the pendulum-boy”. His interests were always centered on his philosophical-political studies with a restricted fixed topic. He always lived with his mother, which at the time of writing this manuscript, is 90 years old.

The patient often contacts the old psychiatrist who was in charge of his therapy when he was in the hospital, the psychiatrist remembers him clearly because the patient, since he left the hospital, calls him every day until now and tells him about the same philosophical-political topic. We also called his old psychiatrist, asking him if the behavior of this patient was like the other schizophrenic patients that were in the hospital at that time and he literally told us “he is schizophrenic as I am a cucumber”. So the old psychiatrist recognized a clinical difference in this patient compared with others schizophrenic inpatients

During our clinical examination, from the patient do not emerge any perceptive problems or delusions and these symptoms were never even present in the patient history. The patient’s behavior is a continuous routine; his thought is polarized on one single philosophical-political theme as his unique interest. We decided, together with his personal doctor, to suspend his neuroleptic therapy and we did not find, in the year after this suspension, any change in his psychic symptoms. However, his general health conditions were significantly better.

This case represents an emblematic misdiagnosis of schizophrenia because the nosographic definition of the Asperger syndrome, described in 1944 by Hans Asperger, was not yet diffused in Europe since its translation made by Lorna Wing [6-8]. Thus, patients who received a diagnosis from psychiatrists before this last period were frequently considered part of other diagnostic categories other than ASD and, in primis, schizophrenia.

### Autistic pseudo-psychosis

In this second case, we describe a patient who, during one examination, started describing us an episode from his life, happened in the December of 2011, when he was 17 years old.

Together with his parents, the patient went to see a movie called “2012” (that shows a hypothetical end of the world). When he came back home, he became suddenly aggressive toward his parents, taking a knife in his hand and accusing them of mocking him. Given the

persistent aggressive and menacing behavior, he was admitted in a psychiatric ward for "acute psychosis". During his psychiatric exam it emerged that the patient had an intellectual level at the limit of the norm and had a realistic and concrete reading of the movie "2012" as if it was representing real news announcing the end of the world in the successive month. Because of this realistic reading, he was very angry toward his parents, accusing them of not telling them of this news and also for being responsible of telling him to study, when this activity would not be important (i.e., since the world was ending). After having clarified to the patient the meaning of the movie and the difference between real news on the TV and their representation in the movie, it was possible to observe the sudden disappearing of his aggressive ideas toward his family. In this case we can observe a typical ASD modality which is represented by the literal and concrete reading of a written story or a fictive event.

### **Reactive paranoid psychosis**

A 24 years old patient, with a master degree and a brilliant academic history was studying in a specialization course. In the college where she studied, however, she has rigid and apparently bizarre behaviours. For instance, she used specific colours of her clothes to match specific arguments that she was studying: she didn't take notes during lessons and in the evening, remembering the colour of the dress she was using in class, she could also remember the lesson and thus, she could write down what she heard in the class. Since she had different lessons (with different arguments) during the day, she changed her dresses accordingly (i.e., she changes as many times her dresses exactly matching the number of different lessons). Also, in the library she had to sit always in the same place. In the past, students as well as professors made fun of this behaviour until the patient felt a persecutory hyperactivity toward the college and had to go to the psychiatric ward where she received a diagnosis of paranoid schizophrenia. After this episode, the patient still didn't know about her Asperger syndrome that was diagnosed a few years later. Indeed, the high IQ level and her clinical characteristics defined the presence of level 1 ASD (DSM V), like the Asperger syndrome (DSM IV TR), confirmed by the RAADS interview [9,10].

In patients affected by ASD, and in particular in the Asperger syndrome, the scholastic or work discrimination, is a frequent event and represents a stressful trigger that in turn elicits anxiety, depressive and transient psychotic episodes. This happens in particular when a patient doesn't know to be affected by ASD (especially by Asperger) and thus, does not know how to adequately relate or comprehend the hostility of the external environment considering that often this hostility is caused by the patient behavior itself [6,11].

### **Comorbidity between ASD and paranoid/narcissistic personality disorder**

This case is about a 40 years old patient who went for many years to a CSM with a diagnosis of paranoid and narcissistic personality disorder. During stressful moments in his life, especially because of his job, his psychiatrist of the CSM had also to admit him to a psychiatric ward because of his persecutory ideas. When he wanted to be examined for the possibility of having the symptoms of the Asperger syndrome, he didn't call directly the CSM but he wrote to the Directors of the two principal Mental Health Department of the city.

From the test evaluation it emerged an MMPI2 profile adherent to the paranoid disorder. From the Rorschach test it emerged a profile

adherent to the narcissistic-paranoid classification. From the clinical exam no persecutory delirious idea were observed. The patient history and the evaluation with the RAADS scale confirmed the presence of an Asperger syndrome. The intellectual level was above the norm as observed with the WAIS scale (the patient had a master degree) [10]. Interestingly, during the diagnostic evaluation and when the Asperger syndrome and the narcissistic-paranoid personality were explained to the patient, he contested a few single words in the 14 pages that composed the written explanation. In particular, he contested some words related to his relationship with sexuality. Even in this peculiar event, the patient didn't contest the explanation with the psychiatrist of the CSM but he wrote directly at the public relation office, contesting some terms used in this context and also describing with details his sexual activity, without awareness of the privacy.

This patient, thus, shows on one hand the classical "vengeance" thirst proper of a paranoid personality, associated to a narcissistic aspect reflected in his need to write to the maxim authority. However, it also emerges the ingenuity of the Asperger syndrome, along with its high intellect level, when he describes to unknown people his sexual activity.

The presence of these comorbidities rendered really complex the treatment of Asperger syndrome because the narcissistic-paranoid aspects are amplified when he is under the stress of a relationship and when he has to work with other people, and difficulties in relationship are strictly related to Asperger syndrome.

### **Schizophrenic evolution of the ASD**

In this case, we describe a patient who came to our CSM when he was 30 years old. He showed significant schizophrenic symptoms with disorganized-hebephrenic characteristics. He presented yellow fingers from chronic smoke abuse, a language composed by few associative links between concepts, an incongruous affectivity, a severe behavioral disorganization and he also had an history of aggressive episodes (e.g. he heavily hit his father). The diagnosis was of a chronic schizophrenic disorder. In the patient history, however, it has been described that, since early childhood, he had difficulties in creating relationships with his peers and in the social communication but an early language acquisition (1 year old) with fluid and complex words along with clumsiness in his movements, and the need for a fixed and immutable environment. Also, he showed a high intellectual level for his age with selective interests, already during childhood, like history and trains and he preferred to play alone than with his peers. These symptoms were not recognized as a disorder since his adolescence when he began to experience episodes of agitation and persecutory ideas. All these behaviors were interpreted as psychotic episodes with the so-called "atypical" characteristics and different psychiatrists prescribed a pharmacological therapy with antipsychotic, first with typical neuroleptics (haloperidol, chlorpromazine), then with atypical neuroleptics (risperidone, olanzapine) until the final prescription of clozapine.

The patient characteristics during his childhood are the typical ASD characteristics and they were confirmed by the ADI-r test, while the current diagnosis describes a schizophrenic disorder [12].

### **Affective psychosis**

In adolescence a psychotic episode may represent the onset of a bipolar disorder. We describe the case of an ASD with intellectual disabilities and non-verbal communication that in adolescence began

to show definite and severe episodes with aggressive behavior, insomnia, sexual hyperactivity with assault against social workers. During the episodes he also tried to “fly like a bird” in the room, with high risk of self-damage. He frequently was carried to emergency room of the psychiatric hospital and a several neuroleptic treatment was used. But after few months the episodes appeared again, in the same way. Treatments also with new antipsychotics didn't improve the clinical situations, but lithium therapy clearly improved the episodes that were less severe, and after the augmentation with clozapine the patient didn't present other episodes. The improvement of functioning was clearly relevant and the patient began to come back to home during the week-end.

It is important to consider the possibility that even in intellectual disabilities a bipolar disorder could be in comorbidity with ASD and that mood stabilizers could improve the disorder.

## Discussion

The relationship between psychosis, in particular schizophrenic psychosis, and ASD has its historical roots in the choice made by Kanner in deriving the term “autism” from one of the symptoms of schizophrenia as described by Bleuler [13].

First, psychotic and autistic disorders were often overlapped. Indeed, before the 70's the term childhood psychosis was utilized for the childhood-onset schizophrenia as well as for autism [14]. Years later, both disorders were considered as incompatible and were divided (DSM III) and finally they were considered together in a possible comorbidity (DSM V). Psychotic disorders are described in at least the 12% of the ASD cases already during their childhood [15].

Clinically speaking, in the schizophrenic patients it is possible to often observe autistic-like traits [16]. A comparison of social cognitive functioning in SCZ and high functioning autism showed elevated convergence, in particular in SCZ with negative symptoms [17,18]. Also, neurological soft signs in Asperger syndrome are not different from early-onset psychosis and an overlap of autistic and schizotypal traits in adolescence has been described too [19,20]. Some autistic subjects develop a clinical course that is indistinguishable from schizophrenia, and up to 50% of persons with ASD go on to exhibit psychosis. The gold standard test: the Autism Diagnostic Observation Schedule (ADOS) cannot reliably distinguish schizophrenia and child onset schizophrenia from ASD and an overlap in autism-spectrum quotient (AQ) test between Asperger syndrome and schizophrenia has been detected [21,22].

Between schizophrenia and ASD it is possible to find common genetic aspects, often concerning the synaptic function and its correlated proteins, like the neurexin, neuroligin and interacting proteins (e.g. SHANK 3) but also in the cytoarchitectonic organization (e.g. proliferation, migration and lamination defects), in the neuropsychological profile (e.g. Theory of mind and mirror neuron function deficits) as well as in neuroimaging patterns (e.g. grey/white matter abnormalities and structural/functional connectivity alterations) [5,16,23-37].

Thus, it is obvious that for the clinician who has to work on a psychological evaluation in adolescents and young adults, it is not always easy to discriminate between psychosis and ASD. To operate a differential diagnosis between the two disorders the key point are represented by [38]:

Precise patient history made by the parents of the patient and related to his first years. In this patient history it is possible to find some typical traits like the interaction and communication difficulties and also the stereotyped behaviours, the selective interests and the sensorial alteration typical of the ASD. It is useful to perform this anamnestic evaluation along with the ADI-r interview.

Evaluation of the psychotic symptoms within their context of appearance and research for the cause of this symptoms in a literal reading of the external reality, typical of the ASD who have a tendency to not understand metaphors even with an adequate intellectual level. Evaluation of the possible reactive genesis of the psychotic symptoms related to prolonged stressful events such as bullying or reactions to the environment.

Evaluation of the symptoms typical of schizophrenia: in particular Schneider first rank symptoms. These are represented by: thoughts echoes, sounds coming from thoughts, hearing voices under the form of dialogues and replies to patient questions, hearing voices that accompany the patient's actions, diffusions of the thoughts, delirious perception, and tendency to follow impulses [39,40]. Also, evaluation of other positive symptoms like hallucinations and the presence of compromised logic in the patient conversation.

Use with caution diagnostic tools and in particular the MMPI because patients with ASD tend to present a literal reading of the questions in the test and, thus, can present false positive symptoms for paranoid psychosis [41].

Don't use only specific test for autism, like ADOS, to formulate an ASD diagnosis because these test in the adolescent as well as in the adult present some false positive symptoms of ASD when the supposed autistic patient is, in reality, a psychotic patient [42]. These false positives are present due to the overlapping of the communication and social interaction symptoms of the two disorders. It could be useful to use the RAADS scale in the Asperger syndrome evaluation but it has to be integrated with a more global clinical evaluation.

## Conclusion

The clinic evaluation of psychotic symptoms during adolescence and adulthood has to be accurately reconstructed, starting from the first years of the patient history, to detect the possible presence of ASD and a complete clinical and test assessment have to be carry out.

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