CASE REPORT

Acute psychosis with attention-deficit/hyperactivity disorder and oppositional-defiant disorder comorbidities

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SUMMARY

This is a case of an 18-year-old boy who presented with his mother in the emergency room with a 1-week history of paranoia and bizarre behaviour. His comorbidities included attention-deficit/hyperactivity disorder, oppositional-defiant disorder and mild intellectual delay. At the emergency room he was incoherent, agitated and uncooperative. He was admitted to the psychiatric inpatient unit and treated with low-dose risperidone. The patient's symptoms improved markedly over a few days, although he remained restless and had episodes of agitation. Nursing staff was concerned about his behaviour and found him difficult to manage. However, after speaking to the patient's family, this was felt to be his baseline. After 11 days the patient was discharged home in stable state.

BACKGROUND

The prevalence of attention-deficit/hyperactivity disorder (ADHD) is estimated to be between 6% and 10% of adolescents.^{1–3} Of patients living with ADHD, up to 50% will also meet the criteria for oppositional defiant disorder (ODD).^{4,5}

The management of ADHD and ODD is described in the literature.^{6,7} However, acute management can be complicated when a patient presents with ADHD, ODD and superimposed psychosis. In acute care settings, it can be difficult to distinguish among baseline patient characteristics from symptoms of a new onset psychotic episode. Inattention, restlessness, anger and active refusal to comply with the interview are just some characteristics that challenge clinicians who diagnose and manage these patients. Given the prevalence of ADHD and ODD, it is crucial to determine the baseline, recognise any superimposed psychosis and offer treatment appropriately.

CASE PRESENTATION

An 18-year-old boy, attending a local high school, was brought in by his mother to the emergency room. His mother was concerned about a 1-week episode of paranoia. The patient was incoherent during his initial presentation, and a collateral history was thus taken from his mother.

The paranoia consisted of persecutory beliefs associated with odd behaviours; for example, the patient believed that he was being monitored by cameras, and would wear hoodies around the house to hide his face during the day. He would ask his family members to touch him repeatedly, including his head and his feet, but would not

explain why. There were also times when he would pour fruit juice and milk onto the ground, throw cheese into the mix and ask his family members to touch it to be 'saved'.

The patient had mild intellectual disability. His psychiatric history was significant for an ADHD combined subtype and ODD, for which he had been followed in the community by a child psychiatrist. His previous and only presentation at the emergency room occurred 4 months prior, when he became agitated while intoxicated and mentioned suicide to his mother during an argument. Back then, he was felt to be stable and discharged overnight with follow-up at the Adolescent Mental Health Clinic.

The patient had no significant previous illnesses or medical surgeries. However, he had a biking accident 3 months prior to presentation, after which the patient's mother noticed some behavioural changes. He did not smoke. He drank alcohol and used recreational marijuana. Current medications included 30 mg amphetamine mixed salts orally daily and 0.25 mg risperidone orally daily. The patient had been with his mother only about 3 weeks at the time of presentation; previously the patient had been with his father, when he received no medications. The patient's mother was in the process of titrating the patient's medication slowly up to the previous prescription of 0.75 mg risperidone orally daily.

Developmentally, the patient was attending high school at the time of admission under a special education plan. He had never been sexually, mentally or physically abused. However, he was socially isolated and was noted to lack social skills. He lived with a supportive family: his mother, mother's partner and a half-sister. Previously, he had been arrested multiple times for behavioural issues such as public intoxication and threatening other students.

In the family, the patient's uncle (half-brother to the patient's mother), as well as a great uncle had schizophrenia. The patient's mother and father were diagnosed with ADHD. There were no known medical conditions that run in the family.

On examination, the patient was wearing a hoodie over his head and pacing around the room. He demanded to have a big room to himself at the emergency clinic. He was agitated but did not appear aggressive. His speech was generally incoherent and illogical. Consequently, no further examination was performed and the patient was admitted to the psychiatric inpatient unit.

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INVESTIGATIONS

- ▶ Complete blood count and electrolytes revealed no significant abnormalities.
- ▶ CT scan of head was normal.
- ▶ Urine drug screen was positive for marijuana and amphetamines (amphetamines likely resulted from use of medicinal amphetamine mixed salts).

DIFFERENTIAL DIAGNOSIS

- ▶ Head trauma—ruled out by CT.
- ▶ ADHD and ODD—unlikely the sole cause of presentation, given the acute onset of bizarre behaviour.
- ▶ Mood disorder—unlikely, given the lack of prominent mood symptoms.
- ▶ Drug-induced psychosis—possible, although the patient was not a heavy user.
- ▶ Psychosis NOS—most likely diagnosis in this acute onset episode.

TREATMENT

- ▶ Risperidone titrated to 0.25 mg orally every morning and 0.5 mg every night at sleeping time on admission; further titrated to 1 mg orally twice daily 2 days postadmission.
- ▶ Amphetamine mixed salts 30 mg orally qHS.

OUTCOME AND FOLLOW-UP

The patient stabilised in hospital. While he was noted to be disorganised and uncommunicative on the third day postadmission, he was largely comprehensible on the fourth, if delusional and distracted. He continued to become agitated every other day or so, and would often appear anxious. He was frequently restless, distracted and paced around the ward during the day.

The nursing staff had difficulties differentiating symptoms of psychosis from ADHD and ODD, particularly due to occasional intermingling of the resulting behaviour. For example, staff noted the patient to be impulsive, inattentive and disorganised. This concerned the nurses, who also found the patient difficult to manage; however, the family was concerned primarily about the patient's paranoia, and reported that the behavioural challenges were his baseline. Many discussions took place to alleviate the nurses' concerns, and to reassure them that the behaviours were the result of comorbid conditions.

After a week as an inpatient, the patient no longer acknowledged any of the persecutory delusions that were present on admission. He developed some insight and recognised that his actions that brought him to the hospital were bizarre. His episodic agitation, anxiety and impulsivity remained. At this point the patient's mother felt him to have returned to baseline. This was accepted given the patient's previous ADHD and ODD diagnosis. He was discharged home after 11 days, in stable state. He was referred to the Psychotic Disorders Clinic for further follow-up.

DISCUSSION

Among a wide spectrum of symptoms, adolescents and young adults living with ADHD can present with inattention, distractibility and difficulties in following instructions. They may talk excessively, speak inappropriately or feel restless. ODD is characterised by active refusal to comply with requests, performing

deliberate acts to annoy others and losing temper often, among others.⁸ When a patient presents with the aforementioned conditions, the therapeutic alliance with the patient becomes paramount and is associated with better treatment outcomes.⁹ Psychosis, on the other hand, is defined by hallucinations, delusions, disorganised behaviour, disorganised speech and catatonia.⁸ It is crucial to recognise any psychosis in patients with ADHD and ODD, and then to offer appropriate treatment while keeping the comorbidities in mind.

The prevalence of comorbid psychosis in children and young adults with ADHD is estimated to be about 5%.¹⁰ Furthermore, stimulants such as methylphenidate and amphetamines are first-line treatments in the management of ADHD. About 1 in 400 patients treated with stimulants at a therapeutic dose will develop toxicosis with symptoms of psychosis or mania.¹¹ Case reports in the literature suggest that such psychosis disappears within days to weeks after the amphetamines are discontinued.^{12 13} However, another case report suggests that antipsychotics may be effective even with concurrent use of psychostimulants.¹⁴

When a psychotic patient presents in an acute setting, ADHD and conduct disorders may complicate the diagnostic progress and management. On one hand, the patient may be uncooperative with the interview; on the other hand, some symptoms of psychosis can be difficult to separate from those of ADHD and ODD. It is therefore imperative to work with the patient, the family and to establish a baseline level of functioning. In this case the restlessness, inattention, distractibility and episodic agitation were present at baseline; the delusions and the bizarre behaviour were part of the acute presentation. Furthermore, the patient became more cooperative towards the end of his inpatient stay, which can be attributed to the developing therapeutic relationship between the patient and the clinical team, as well as the resolution of his acute psychosis.

This case was particularly challenging for the nursing staff. Many psychiatric nurses were not experienced in managing a patient with behavioural comorbidities on the general unit and reported repeated concerns to the psychiatric team. It took much effort for the psychiatric team to address the issue and explain that the behaviours were not due to psychosis, but instead were present at baseline. More education and experience in managing complex patients with behavioural issues would have been helpful for similar future cases.

With regards to treatment, we used low-dose risperidone to effectively treat the acute psychosis. We made this decision based on two experiences with similar patients in the past. We recognise that other atypical neuroleptics are also available and may be equally effective. To the best of our knowledge no other case studies have described acute onset psychosis in the setting of comorbid ADHD and ODD. We hope that this first case will invite other colleagues to share their experiences in treating psychotic episodes with patients with comorbidities.

In summary, an episode of acute psychosis was diagnosed in a young patient with ADHD and ODD. The collateral information was paramount in the history-taking and the establishment of a clinical baseline, for the treating psychiatrist and the nursing staff. A low-dose regimen of risperidone was effective in treating the acute psychosis, and the patient was discharged in stable baseline state.

Learning points

- ▶ Patients with attention-deficit/hyperactivity disorder (ADHD) and/or oppositional-defiant disorder (ODD) may be easily agitated, restless or inattentive; they may pose a challenge when compounded by psychosis.
- ▶ It is important to differentiate disorganised behaviours due to psychosis from baseline states.
- ▶ Establishing a therapeutic alliance with such patients is crucial in management.
- ▶ Nursing education for managing complex patients with behavioural issues would be helpful.
- ▶ Risperidone may be a good choice for psychosis in the setting of ADHD and ODD comorbidities.

Competing interests None.

Patient consent Obtained.

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