Arch Trauma Emerg Med. 2025;1(1):9–13.

Archives of Trauma and Emergency Medicine | Case Report

Limited Use, Lasting Consequences: Residual Psychosis and Recovery after Methamphetamine Use

Prabin Gautam[1,2,*], Shreesti Rajbhandari[3], Tia Hamilton[4]

[1]Resident Doctor, Kent & Medway NHS Trust, United Kingdom

[2]MSc Psychiatry Student, Brighton & Sussex Medical School, United Kingdom

[3]Independent Author

[4]Foundation Doctor, Dartford & Gravesham NHS Trust, United Kingdom

[*]Correspondence should be addressed to Prabin Gautam, gtm.prbn@gmail.com; p.gautam1@uni.bsms.ac.uk

Received date: August 01, 2025, **Accepted date:** October 10, 2025

Citation: Gautam P, Rajbhandari S, Hamilton T. Limited Use, Lasting Consequences: Residual Psychosis and Recovery after Methamphetamine Use. Arch Trauma Emerg Med. 2025;1(1):9–13.

Abstract

Methamphetamine-induced psychosis (MIP) usually resolves within days to weeks after stopping drug use. However, some vulnerable individuals may experience prolonged symptoms. We present the case of a woman who developed long-lasting psychotic symptoms following minimal methamphetamine exposure, shedding light on risk factors and the importance of holistic care.

A 53-year-old woman experienced vivid hallucinations and fixed delusional beliefs after limited methamphetamine use (monthly smoking over eight months, totaling approximately eight exposures). Despite initial denial of drug use, urine immunoassay toxicology confirmed amphetamines during emergency department presentation. Her symptoms persisted for over 18 months despite abstinence confirmed by ten subsequent negative urine drug screens. Antipsychotic treatment with risperidone (later switched to aripiprazole 10 mg daily due to side effects), alongside cognitive behavioral therapy (CBT), gradually led to improvement.

This case challenges assumptions that MIP resolves quickly and only occurs with heavy use. It also highlights how coexisting vulnerabilities, such as attention-deficit/hyperactivity disorder (ADHD) and social isolation, can amplify risk. Early substance screening, empathetic rapport, and flexible treatment were key in helping the patient recover.

Even small amounts of methamphetamine can be associated with persistent psychosis. Clinicians should remain vigilant and support recovery with pharmacological and psychological approaches.

Keywords: Attention deficit hyperactivity disorder (ADHD), CBT for psychosis, Drug-induced psychosis, Methamphetamine induced psychosis, Methamphetamine use, Residual psychosis, Stimulant induced psychosis, Substance induced psychotic disorder, Substance misuse in older adults

Introduction

Methamphetamine use continues to be a global public health concern: an estimated 30.5 million people worldwide used amphetamines (including methamphetamine) in 2023, according to the 2025 United Nations Office on Drugs and Crime (UNODC) [1]. In the UK, prevalence is much lower. According to the Crime Survey for England and Wales (year ending March 2024), 8.8% of adults aged 16–59 reported using illicit drugs, with 3.0% reporting Class A drug use—which in the UK includes methamphetamine [2]. While the survey does not disaggregate methamphetamine, it states that all other individual drug types not listed represent a prevalence of less than 1%, indicating that methamphetamine use is very rare in England and Wales [2]. The most detailed data available from the 2018–19 United Kingdom Drug Situation report estimated methamphetamine use at only ~0.03% of adults in England and Wales—approximately 11,000 individuals [3].

While community prevalence is low, treatment demand and acute harms have shown concerning trends. In 2018, 5.8% of new drug treatment cases in Wales were for amphetamine or methamphetamine, compared with 1.8% in England and 1.5% in Scotland [4]. Emergency department presentations involving methamphetamine in Central London increased dramatically—from just 4 cases in 2005 (1.9% of drug-related cases) to 294 cases in 2018 (16.2%) [5].

Despite low prevalence, methamphetamine-induced psychosis (MIP) remains clinically important. Up to 40% of users experience psychotic symptoms such as hallucinations, delusions, and paranoia, typically resolving after cessation [6]. However, some individuals experience persistent or recurrent psychosis lasting several months after chronic methamphetamine use [6]. Most literature focuses on psychosis following chronic, high-dose use, with limited documentation of prolonged psychosis after minimal exposure.

Chronic MIP can resemble primary psychotic disorders by inducing vivid visual and auditory hallucinations, strong delusions, and paranoid beliefs [7], complicating diagnosis and management. The phenomenological similarities include positive symptoms (hallucinations, delusions, disorganized behavior), negative symptoms (social withdrawal, blunted affect), and cognitive impairments, though the temporal relationship to substance use and response to abstinence can help differentiate MIP from primary psychotic disorders [8].

This case report explores the unusual course of residual psychosis in a woman who had very limited exposure to methamphetamine, highlighting the role of vulnerability factors and the need for early detection and comprehensive care.

Case Presentation

A 53-year-old woman was referred to psychiatric services after her housing officer raised concerns. She had a background of anxiety, depression, and adult-diagnosed attention-deficit/hyperactivity disorder (ADHD). Her mood had been stable on sertraline (150 mg/day), and she took methylphenidate (Concerta XL 36 mg BD) for ADHD.

She initially presented with a six-month history of distressing visual hallucinations: seeing "white moths" and "mites" infesting her body, which she linked to chimney debris. She believed they had laid larvae inside her and contaminated her bloodstream. Despite repeated pest control visits confirming no infestation, she remained convinced, leading to obsessive cleaning, self-inflicted skin injuries, and food restriction.

Initial investigations in March 2024 were unremarkable. She initially denied any substance use and refused urine drug screening. However, later that month, she presented to the emergency department with acutely worsened psychotic symptoms (reporting moths emerging from her eyes) after using a larger quantity of methamphetamine than usual. A urine immunoassay screen at that time returned positive for amphetamines and benzodiazepines (prescribed). No confirmatory testing was performed. She then admitted to using methamphetamine ("Tina") by smoking, approximately once monthly with her partner, starting in September 2023. She reported that her psychotic symptoms began approximately one month after initiating use, in October 2023. She also disclosed historical cocaine use but stated she had ceased this several years prior; cocaine was not detected on toxicology screening.

She was started on risperidone 500 mcg twice daily, which was titrated to 1 mg twice daily. However, due to side effects including drowsiness and metabolic effects (weight gain), she was switched to aripiprazole 10 mg once daily. The patient was managed entirely in the community and was not admitted for inpatient treatment. She received intensive home treatment team support for two weeks following her emergency department presentation.

Despite abstaining from drug use since May 2024 and engaging with services, her symptoms—particularly persecutory delusions about her son—persisted. At times, she believed he had planted cameras and manipulated electronics using Artificial Intelligence, to the point where she would be frightened of chocolate wrappers or anything shiny, thinking they were cameras. These beliefs led to significant familial conflict, including estrangement and a police complaint. She ended her relationship with her partner (who had supplied the methamphetamine) in May 2024.

Sustained abstinence was confirmed through ten negative urine drug screens: five random tests by the home treatment team during the two-week intensive support period, two tests during home visits by her care coordinator in 2024, and three tests during psychiatry appointments (two after May 2024 and one in 2025). The patient did not undergo formal detoxification; she ceased methamphetamine use independently.

Over time, with consistent antipsychotic use and participation in cognitive behavioral therapy (CBT) for psychosis (21+ sessions beginning in November 2024), her insight improved. Notably, her insight regarding the connection between methamphetamine use and her initial symptoms developed early, after the positive urine test and psychoeducation about MIP during her psychiatry appointment in April 2024, she acknowledged the temporal relationship between drug use and symptom onset. However, her persecutory delusions about surveillance by her son were more resistant to treatment. She began questioning these beliefs in December 2024, gradually improving over subsequent months. By January 2025, she

reported significant emotional recovery, 18 months after the onset of psychotic symptoms. She reconciled with her son, regained social support, and began volunteering. The timeline of the patient's journey, including symptom progression and recovery, is summarized in **Table 1**.

As of June 2025, the patient exhibits no psychotic symptoms and presents as euthymic, demonstrating strong engagement with her care team. A dose reduction of aripiprazole is planned, aligning with the patient's expressed wishes and observed clinical recovery. The patient maintains abstinence from illicit substances and alcohol, with all urine drug screens remaining negative.

Discussion

This case highlights the complexity of MIP and how its course can defy clinical expectations. MIP is typically associated with high-dose or chronic use [6,7], but here, a woman with only occasional exposure (approximately eight smoking episodes over eight months) developed long-standing symptoms. The persistence of her symptoms—despite confirmed abstinence through multiple negative urine screens—mirrors descriptions of chronic MIP seen in other rare case reports [9]. One case report from Iran describes the diagnosis and treatment of a patient presenting with paranoid beliefs, auditory hallucinations, and low mood after chronic methamphetamine use [9]. That

Table 1. Patient journey timeline: symptom progression and recovery.

Timeline/Date	Symptoms/Status	Interventions/Key Events
September 2023	Began methamphetamine use (smoking, ~once monthly).	—
October 2023 (Onset of symptoms)	Visual hallucinations (moths/mites), infestation delusions, obsessive cleaning, self-harm, food restriction.	—
March 2024 (Initial Presentation)	Continued symptoms. Denied substance use, refused urine screening.	Referred to psychiatric services; unremarkable investigations.
Late March 2024 (ED Presentation & Urine Screen)	Acutely worsened symptoms (moths from eyes) after larger-than-usual use. Urine immunoassay positive for amphetamines & prescribed benzodiazepines.	Admitted to monthly methamphetamine use (smoking) since September 2023. Risperidone 500 mcg BD started, later increased to 1 mg BD. Referred to home treatment team and addiction support services.
May 2024	Symptoms continued post-abstinence. Discharged from addiction services; compliant with risperidone.	Ended relationship with partner. Ceased methamphetamine use independently (no formal detoxification).
July 2024 (3 months post-abstinence)	Persistent persecutory delusions (son, AI, cameras), familial conflict.	Risperidone switched to aripiprazole 10 mg OD due to metabolic side effects (weight gain, drowsiness).
November 2024	Persecutory delusions ongoing.	CBT for psychosis initiated.
December 2024	Began questioning persecutory beliefs about son.	Ongoing CBT and antipsychotic treatment.
January 2025	Emotional recovery, improved insight (delusions recognized as irrational).	Consistent antipsychotic use, ongoing CBT. Reconciled with son, regained social support, began volunteering.
May 2025	Continued improvement.	CBT ended (21+ sessions completed).
June 2025 (20 months post-onset)	No psychotic symptoms. Euthymic. Sustained abstinence confirmed by negative urine screens.	Strong engagement with mental health team. Planned aripiprazole dose reduction.

CBT: Cognitive Behavioral Therapy for Psychosis

patient was also managed with antipsychotic medications such as risperidone and experienced persistent psychotic symptoms after abstinence from the drug during a one-year follow-up [9]. This illustrates the similarities between these patients' presentations and persistent symptoms despite their differing amounts of drug use, suggesting that individual vulnerability factors may be more important than dose or frequency in determining clinical course.

Several risk factors likely contributed to this prolonged psychosis. The patient had a history of ADHD (treated with methylphenidate), which is associated with increased vulnerability to psychosis following stimulant exposure [10]. Individuals with ADHD may have pre-existing dopaminergic dysregulation, and additional stimulant exposure from methamphetamine may precipitate psychosis more readily [10]. Her family history of mental illness may also have played a role. The patient reported a history of undiagnosed mental health conditions on both the maternal and paternal sides of her family, describing extreme mood fluctuations seen in several family members including her mother and father. This suggests possible genetic vulnerability to psychiatric disorders. Moreover, she had limited insight initially, was socially isolated, and relied on a single collateral informant. Loneliness and social isolation is a major risk factor in developing chronic psychosis, which has been recognized in clinical practice [11]. A meta-analytical review found a moderate positive association between loneliness and both positive and negative symptoms of psychosis, with loneliness potentially contributing to symptom persistence [11].

Identification of drug use was delayed by approximately one month since the first presentation because of the patient's reluctance, but with the establishment of a good rapport and support from mental health services, the patient eventually agreed to undergo drug analysis. Early toxicology screening is essential in such cases, especially when patients may be reluctant to disclose substance use [12]. The use of immunoassay screening in this case was appropriate for initial detection, though confirmatory testing would have provided additional certainty.

Treatment of chronic MIP remains challenging. While antipsychotics are often prescribed, evidence of their long-term efficacy is limited [6]. In this case, a combination of antipsychotic treatment and CBT for psychosis led to gradual recovery. The patient's early insight into the connection between methamphetamine use and her symptoms (developed after psychoeducation in April 2024) likely facilitated engagement with treatment and sustained abstinence. However, her persecutory delusions about her son were more treatment-resistant, only beginning to resolve eight months later in December 2024. This differential response suggests that while drug-related insight can be achieved relatively quickly through psychoeducation, delusional beliefs may require prolonged psychological intervention to fully resolve.

CBT has shown promise in helping individuals manage residual symptoms and avoid relapse, especially when focused on improving coping skills and promoting abstinence [13]. In this case, CBT appeared to play a crucial role in addressing the persistent persecutory delusions that remained after the patient achieved abstinence. While it is difficult to definitively separate the effects of pharmacological and psychological interventions in clinical practice, the temporal pattern suggests that antipsychotics provided initial symptom stabilization, while CBT facilitated the more gradual process of insight development and delusional belief modification. The extended duration of psychotic symptoms (18 months) despite early abstinence and antipsychotic treatment highlights the importance of combined pharmacological and psychological approaches in managing complex presentations of MIP.

This case also illustrates the broader biopsychosocial impact of MIP. The patient experienced job loss, family strain, and financial hardship, which outlasted the period of active psychosis. It emphasizes the need for integrated support that addresses not just psychiatric symptoms, but also social and functional recovery.

Limitations

This case report has several limitations. First, only immunoassay urine screening was performed, without confirmatory testing such as gas chromatography-mass spectrometry (GC-MS) or liquid chromatography-mass spectrometry (LC-MS/MS). While the patient acknowledged methamphetamine use after the positive result, confirmatory testing would have provided greater diagnostic certainty and eliminated the possibility of false-positive results from cross-reactivity. Second, the patient disclosed occasional cocaine use in the years prior to presentation, though this was not detected on toxicology screening, and she reported cessation several years before. The potential contribution of previous stimulant exposure to her vulnerability cannot be fully excluded. Third, the exact timing and quantity of her final methamphetamine use prior to the positive urine screen is uncertain, as she presented to the emergency department after using a larger amount than usual but did not provide precise details. Fourth, there is limited literature on the consequences of minimal methamphetamine use compared to chronic use, making it difficult to contextualize this case within existing evidence. Finally, as a single case report, the findings may not be generalizable to other patients with MIP, particularly given the patient's multiple vulnerability factors, including ADHD, family history of mental illness, and social isolation.

Conclusion

This case challenges the assumption that methamphetamine-induced psychosis is a short-lived condition and that symptoms are dose-dependent with infrequent use. Even limited exposure (approximately eight smoking episodes over eight months) can be associated with persistent symptoms lasting 18 months, especially in individuals with pre-existing vulnerabilities such as ADHD, family history of mental illness, and social isolation. Clinicians should take a thorough drug history, remain alert to subtle signs of psychosis, and use early screening tools. This report illustrates the clinical significance of recognizing that individual vulnerability factors may be more predictive of prolonged psychosis than dose or frequency of use. Furthermore, it demonstrates how compassionate, flexible, and sustained treatment—including both pharmacological and psychological support—is essential to help patients recover and rebuild their lives. The differential response to treatment, with early insight into drug-related symptoms but delayed resolution of persecutory delusions, underscores the value of combined interventions addressing both acute stabilization and longer-term cognitive and behavioral change.

References

1. United Nations Office on Drugs and Crime. World Drug Report 2025.
2. Office for National Statistics. Drug misuse in England and Wales: year ending March 2024. London: ONS; 2024 Dec 12.
3. Home Office. United Kingdom drug situation 2019: Focal Point annual report (amphetamine and methamphetamine prevalence and treatment data). London: Home Office; 2019.
4. Public Health Wales. Drug treatment data: new drug treatment cases in Wales (2018). Cardiff: Public Health Wales; 2018.
5. Harnett JT, Dargan PI, Dines AM, Archer JRH, Greene SL, Hunter LJ, Wood DM. Increasing emergency department attendances in central London with methamphetamine toxicity and associated harms. Emerg Med J. 2022 Jun;39(6):463–6.
6. Glasner-Edwards S, Mooney LJ. Methamphetamine psychosis: epidemiology and management. CNS Drugs. 2014;28(12):1115–26.
7. Grant KM, LeVan TD, Wells SM, Li M, Stoltenberg SF, Gendelman HE, et al. Methamphetamine-associated psychosis. J Neuroimmune Pharmacol. 2012;7(1):113–39.
8. Wearne CM, Cornish JL. A comparison of methamphetamine-induced psychosis and schizophrenia: a review of positive, negative, and cognitive symptomatology. Front Psychiatry. 2018;9:491.
9. Shariat SV, Elahi A. Symptoms and course of psychosis after methamphetamine abuse: one-year follow-up of a case. Prim Care Companion J Clin Psychiatry. 2010;12(5):PCC.10l00959.
10. Salo R, Fassbender C, Iosif AM, Ursu S, Leamon MH, Carter C. Predictors of methamphetamine psychosis: history of ADHD-relevant childhood behaviors and drug exposure. Psychiatry Res. 2013 Dec 15;210(2):529–35.
11. Michalska da Rocha B, Rhodes S, Vasilopoulou E, Hutton P. Loneliness in Psychosis: A Meta-analytical Review. Schizophrenia Bulletin. 2018;44(1):114–25.
12. Farrell M, Martin NK, Stockings E, Bórquez A, Cepeda JA, Degenhardt L, et al. Responding to global stimulant use: challenges and opportunities. Lancet. 2019;394(10209):1652–67.
13. Baker A, Lee NK, Claire M, Lewin TJ, Grant T, Pohlman S, et al. Brief cognitive behavioural interventions for regular amphetamine users: a step in the right direction. Addiction. 2005;100:367–78.