

# A Case of Cannabis Use-Associated Psychotic Disorder Accompanied by Autoscopic Phenomena

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## Abstract

Cannabis (Marijuana) is one of the most commonly used illegal addictive substances. The psychiatric symptoms associated with cannabis use are agitation, insomnia, depressive or raised mood, anxiety, hallucinations, and concentration problems. It is known that cannabis use increases the risk for psychoses and bipolar disorders and may deteriorate the clinical presentation of pre-existing psychoses and bipolar disorders. A characteristic symptom of autoscopic psychosis is visual hallucination of some part or the entirety of a person's body, imitating his or her behaviors and being perceived as if seen in a mirror. This is not a specific symptom of any mental disorder and the cause is not definitively known. In this case presentation, the symptoms of a patient diagnosed with cannabis use-associated autoscopic psychosis are discussed in the context of the literature.

**Keywords:** Autoscopic psychosis • Cannabis • Hallucination • Addiction • Autoscopic phenomena

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Cannabis (Marijuana) is one of the most commonly used illegal addictive substances (Murray, Mehta, & DiForti, 2014). Agitation, insomnia, depressive or raised mood, anxiety, hallucinations, and concentration problems are some of the psychiatric symptoms associated with cannabis use. Cannabis use is known to increase the risk for psychoses and bipolar disorders and may deteriorate the clinical presentation of pre-existing psychoses and bipolar disorders (D'Souza, Sewell & Ranganathan, 2009; Rabinowitz et al., 1998).

It is assumed that cannabis, by increasing the tyrosine hydroxylase enzyme activity, raises dopamine activity particularly in the limbic system and can produce psychotic symptoms by enhancing the dopamine cycle in the synaptic cleft (Julian et al., 2003). Cannabis use-associated psychotic disorders develop relatively shortly after cannabis use (on average within ca. 1–2 years) and mostly manifest as delusions of persecution or of jealousy. One study found that the risk of developing a schizophrenic disorder was 6.7 times higher in cannabis users than that in non-users (Thacore & Shukla, 1976).

A characteristic symptom of autoscopic psychosis is visual hallucination of some part or the entirety of the person's body. The hallucination called "phantom" is generally colorless and transparent, imitating the person's behavior, and is perceived as if seen in a mirror (Fennig & Fochtmann, 2008). The aim of this case presentation is to discuss the symptoms of a patient diagnosed with cannabis use-associated autoscopic psychosis in the context of the current literature. Consent for publication of this case report was obtained from the patient and his family members.

## Case

Mr. Y, 24-years-old, unmarried, second of four siblings, middle school graduate, and unemployed visited our clinic complaining that he had seen a mirror reflection of the inside of his head and that one half of his brain in this image was decaying. Based on the history received from the patient and from his family, it was learnt that he had exhibited distrust, irritability, aggression (particularly against his family members), excessive smoking, lack of appetite, self-harm, shouting, and erratic behavior; hence, he was admitted to hospital. His family history showed no psychiatric or neurological disease. Complaints had first begun 5 years

earlier in the form of seeking money behind doors. His medical history included ca. 7 years' cannabis use, and no other substance use was ascertained. Visual hallucinations increased mostly during periods of intensive cannabis use. Upon reduction or temporary suspension of cannabis use, the visual hallucinations decreased. He had earlier been admitted to various psychiatric polyclinics but took the prescribed medicines irregularly and only for a few weeks.

Mental state examination during hospitalization in the psychiatric clinic showed reduced self-care, blunted affects, and deluded thought contents. The amount of speech was normal. He said that he had seen a mirror reflection of the inside of his head, and one half of his brain in this image was decaying. Physical and neurological examinations and laboratory tests did not show any anomalies. Cranial magnetic resonance imaging and electroencephalography results were within normal boundaries. During hospitalization, the Brief Psychiatric Rating Scale (BPRS) score was 82 points, and the Positive and Negative Syndrome Scale (PANSS) score was 169 points. Clinical examination showed severe social disengagement, disorganized and stereotypic thinking, and paranoid delusions. The patient was started on zuclopenthixol ampoules (one in 15 days) and risperidone tablets (4 mg/d) and followed up for 1 month under our care. At the end of this period, there were no more hallucinations, distrust and disorganised thinking had decreased, and clinical improvement was observed; therefore, he was discharged. At discharge from the clinic, his BPRS score was 32 and his PANSS score was 86 points. The patient is still regularly being followed up as an outpatient in the polyclinic.

## Discussion

Autoscopic phenomena consist of a hallucinatory experience of perceiving the whole or a part of one's own body in the shape of a mirror reflection. This illusion, called a "phantom," is usually generally clear and appears suddenly, imitating the person's movements. It can be accompanied by hallucinations in the auditory and other sensory fields (Enoch & Ball, 2002). Autosopic phenomena can generally overlap with out-of-body experiences. In the latter case, a person sees himself or herself or the world from an external vantage point (Occionero & Cicogna, 2011). These phenomena can be seen in multiple sclerosis,

stroke, migraine, epilepsy, or similar brain pathologies, as well as in psychiatric disturbances such as dissociative disorder, schizophrenia, and depression, and in inflammatory diseases. However, they are not a specific symptom of a psychiatric illness (Occhionero & Cicogna, 2011). In a study assessing 53 cases of autoscopic phenomena, a neurological condition was found in 59% of the cases, epilepsy being the most frequent (Dennig & Berrios, 1994).

The etiology of autoscopic phenomena is not comprehensively known. It is believed that these phenomena originate from an integration of vestibular, tactile, and visual data (Kansu, 2004). It has also been proposed that they reflect a functional disorder of the brain that is linked to lesions of the temporoparietal junction (Blanke, Landis, Spinelli, & Seeck, 2004). In some persons, this state presents once in their lifetime; in others, it can occur repeatedly.

An autoscopic psychosis is a rare subtype of not otherwise specified psychotic disorders during the monitoring of autoscopic phenomena (Fennig & Fochtmann, 2008). In most cases, the clinical presentation onsets suddenly, is not progressive, and remits spontaneously. These symptoms are rarely the early signs of schizophrenia or other psychotic diseases.

In the present case, according to the history received from the patient's family, the psychotic symptoms began 2 years after initiation of cannabis use. However, because the patient's social support was poor, it is possible that the onset of symptoms would have been earlier without being noticed by his family members. On the other hand, it is also possible that our patient is a case of schizophrenia exacerbated by cannabis use because it is a well-known fact that cannabis enhances psychotic symptoms. The substance can also trigger a schizophreniform disorder in normal individuals or facilitate the manifestation of schizophrenia in people with a genetic predisposition (Voruganti, Slomka, Zabel, Mattar, & Awad, 2001). However, it was noted that during intensive cannabis use, symptoms are even more increased, which makes us consider the presence of a cannabis use-associated psychotic disorder.

In a case of cannabis use-associated psychotic disorder, psychotic symptoms manifesting after cannabis use have to be mentioned (Morales-Muñoz et al., 2014). Among these, transitory paranoid deliria are frequently observed. Paranoid deliria were actually present in our case during the first hospitalization.

Clinical examination of our case showed severe blunted affects. According to the history provided by the family, symptoms such as talking to himself and aggressiveness had been present prior to hospitalization. Rottanburg et al. reported that in patients developing cannabis use-associated psychoses, auditory hallucinations, flattening of affects, and unintelligible talk were observed in a lesser proportion than that in patients diagnosed with psychoses unrelated to cannabis use (Rottanburg, Ben-Arie, Robins, Teggin, & Elk, 1982). Thacore and Shukla (1976) compared patients developing cannabis use-associated psychotic disorder with patients diagnosed with paranoid schizophrenia and reported that in the former patients, erratic behaviors, violence, and panic were more severe than those in the paranoid schizophrenics.

The reasons for assessing the present case as a cannabis use-associated psychotic disorder include the absence of a psychosis precedent in the family history, better insight into the patient's history, onset after cannabis use, deterioration of psychotic symptoms with cannabis use, decrease of psychotic symptoms during cannabis use abstention, and presence of aggressiveness and erratic behaviors.

In conclusion, we have to consider that in association with cannabis use, highly varied psychotic states can manifest themselves, and, even though being rare, clinical presentations including autoscopic phenomena can be observed.

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