

## The impact of biohacking on psychiatric care - a case report

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Biohacking is a fluid term that often refers to social movements based on the idea of “do-it-yourself” biology, postulating open science and the modification of the body's functioning through technology [1,2].

The rapid development of new technologies combined with a growing interest in “do-it-yourself” movements present many new challenges to modern medicine. When some general issues were previously discussed, not enough attention was given to more specific ones, including the impact on psychiatric care. To address this topic, we present the case of a biohacking enthusiast, that illustrates a problem with psychiatric diagnosis in the face of unapproved body modification.

A 30-year-old man with a previous diagnosis of addiction to several psychoactive substances and mixed personality disorder was brought to a psychiatric hospital with a report that he was crying and harassing strangers on the street. During admission the patient communicated content suggesting the presence of delusions—he claimed to have a chip implanted by a transhumanist from Sweden. It was decided to observe his mental state for psychotic disorders.

In the ward, the patient confirmed the existence of the implanted device. He explained that it is a chip with a built-in radio antenna, memory and processor. The man said that the device does not currently work, but after activation it could be used for remote communication with electronic equipment—e.g., “to open the door like with use of a magnetic card”. The device was said to have been implanted a few months earlier by a Swedish transhumanist-biohacker during a conference on these issues.

Surprisingly, physical examination confirmed the presence of a subcutaneous, linear implant approximately 7 millimeters in length. The object was located on the dorsal surface of the left hand in line with the thumb.

During his stay in the ward, the patient was observed exhibiting eccentric behavior, inappropriate affect, disturbances of form of thinking and difficulties in social relations. He did not express any obvious delusional content or disclose disturbances in perception. After hospital observation, he was diagnosed with schizotypal disorder (according to ICD-10 criteria).

The presented case describes a situation in which a psychiatrist may have trouble assessing whether the content spoken by the patient was a result of the disease (delusions) or whether the patient was describing a real technology. Interpretation problems arise from the fact that delusions' content can span a range of diverse

issues, including technology and various types of implantable devices [3,4]. Although we have not confirmed the identification of the implant, the device's characteristics as described by the patient are highly plausible and correspond to RFID chips, popular among biohackers [1,5].

Other interactions on the biohacking-psychiatry axis may include problems with MRI-imaging due to uncertainty regarding an implant's material composition [6] and the effects of self-performed neuromodulation e.g. via transcranial direct current stimulation, which is a therapeutic tool in psychiatry [7] but also popular among “neurohackers” [8]. Additionally, a new role of psychiatry may be to offer help in psychological adaptation to the post-modification biohacker's “new body”.

The patient gave written permission to publish his case report.

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