



## Case Report

# Addiction to self-strangulation: a case-report

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## Abstract

**Introduction:** DSM-5 mentions autoerotic asphyxia in the paraphilic disorders section, as a specifier for the diagnostic of sexual masochism disorder. Strangulation activities have also been observed in the “choking game”. The term “strangulation activity” is considered as more appropriate than “choking game”. While sharing a same behavior, autoerotic asphyxia and non auto-erotic strangulation activities might represent a very distinct pattern of disorders. We describe here a case report of a 25-year old male internship student who has practiced manual self-strangulation up to 40 times a day since adolescence. In the examination of this case we identify individual clinical aspects of this case in a process-based holistic case conceptualization.

**Case description:** The patient is a 25 years old male with a post-graduate degree who presented with a recent history of poor work performance and work-related stress during an internship. He has a concomitant history of both ketamine and cannabis use disorders, and reports urges to self-strangulate, sometimes specifically avoiding contact with friends engage in this behavior and that he has never attempted to discontinue self-strangulation. Neuropsychological assessment found a cognitive functioning below that expected given his educational level. Our intervention consists of a 3-weeks cognitive and motivational therapy program in addiction unit with associated abstinence.

**Conclusion:** Autoerotic asphyxia is a behavior observed not only in the context of sexual masochism disorder, but also as a specific addictive behavior, in the absence of sexual arousal, possibly as a result of emotional dysregulation.

## Introduction

Autoerotic asphyxia is mentioned in the DSM 5 in the section describing paraphilic disorders, as a specifier for the diagnosis of sexual masochism disorder, “if the individual engages in the practice of achieving sexual arousal related to restriction of breathing” [1]. Specifically, it is the practice inducing hypoxia in order to increase sexual excitement [2] and is associated with a high risk of death [3-5] especially when practiced alone [6,7]. There are dramatic consequences of these games practicing in the early adolescence as a rite of passage [8]. These behaviors are colloquially called the “choking game”, but the term “strangulation activity” is considered as more appropriate [9]. The age at onset ranges between 9 to 13 years old in USA [10,11]. A US governmental prevention action to prevent such “games” has been developed, as well as private associations begun by parents of the dead children [7,12,13]. Moreover, there is a trend to propose guidelines to prevent these injuries [13]. One crucial point is that children lack the emotional maturity to understand that playing the choking game carries a significant risk of death.

Autoerotic asphyxia has also been considered as an addiction by some [14,15]. It induces an altered state of consciousness similar to that associated with some substance abuse [16]. People practicing Autoerotic asphyxia tend to develop a tolerance, and thus increase the time spent pursuing it [14]. As proposed by some authors [17-19], the

assumption of new behavioral addictions must be carefully described, in order to try to not overpathologizing daily life activities. With this in mind, we report the case of a young man practicing repetitive self-strangulation (self-induced hypoxia) and discuss this practice using a process-based holistic conceptualization to describe repetitive behavior within processual approach of psychopathology.

## Case Description

Mr. B is a 25-year old student with a Master's Degree, living with his father. In his history, we noted a referral to a child psychiatrist as the consequence of his parent's divorce at the age of 4 y.o., and a subsequent follow-up between 10 and 13 y.o. He lived first with his mother after the divorce but went to live with his father at the age of 18. His neurodevelopment was normal. His father reported that Mr B had a history of cannabis addiction and other substance use (cocaine, heroin, and alcohol).

At the age of 14 years, he experienced first strangulation activity with friends at school using a scarf to induce the hypoxia. After a short period of time experimenting with friends, he started strangulating himself, by using both fists to apply pressure to his carotid arteries. He described pleasant feeling of narcosis and transient amnesia at the beginning of this behavior, as well as transient hypoacusia and distortion of vision. These phenomena tended to decrease with time, with only the relaxing effect of self-strangulation remaining.

Mr. B started smoking marijuana occasionally at the age of 14 y.o., and developed a daily use with dependence DSM 5 criteria from 18 to 23 y.o. He also fulfilled criteria for ketamine use disorder, with a debut at 17 y.o. and light addiction of ketamine (according to DSM 5). At the time of clinical evaluation, Mr. B was self-strangulating up to 40 times a day, only when alone, and describes no sexual arousal. He described frequent urges to self-strangulate, sometimes specifically avoiding contact with friends in order to engage this behavior. He reported that never made as significant attempt stop this behavior before his hospital admission. A clinical examination did not find any paraphilic disorder associated with this behavior, or any Axis I disorder. Mr. B has no sexual impairment and was involved in a heterosexual relationship of 3 years duration. MRI scanner and usual blood tests were normal.

Mr. B described unrealistic goals in its personal life, a lack of emotion, haughtiness, and tended to intellectualize his conduct as a defense mechanism. The hospitalization happened at a moment he was facing difficulties due meeting his work obligations. As a result of these difficulties at work he requested for hospitalization to escape constraints he faced at work. As a condition of reinsurance, a cognitive evaluation was requested during his hospitalization.

Neuropsychological evaluation found a global IQ (assessed by the Wechsler Adult Intelligence Scale third edition) within the normal range (103) but below what was expected from his educational level. The verbal fluencies were in the average range (phonemic: percentile 50, semantic: percentile 25-50), again lower than expected from his educational level. Episodic memory (Grober & Buschke procedure) has shown learning and retrieval disabilities suggesting a frontal learning impairment ( $Z=-2$  in the second free recall,  $Z=-3.9$  to delayed free recall). Encoding was within the lower limit of normal ( $Z=-1.6$ ), however non-verbal episodic memory was intact (Rey complex figure test). Using the Trail-Making test (part A and B, percentile 5-10 for B-A time) and TEA/TAP [Flexibility Tests, Zimmerman and Fimm, with 9 answers wrong (10<sup>th</sup> centile) and 4 aberrant responses], executive functions were found to be deficient in flexibility with a low index of speed-accuracy trade-off (centile 4) which demonstrates that the subject emphasizes speed over the quality of the response. The attention assessment showed impulsivity and a deficient reaction time (Attention Evaluation Tests, Zimmerman and Fimm, percentile 5 with 6 early responses in the condition

with alarm). Overall, neuropsychological assessment supports a cognitive functioning within the normal range. This neuropsychological screening pleads for a low executive default (because the IQ was below expectation) that could be a consequence of the excessive self-strangulation behaviors. Indeed, we do not find any other plausible cause in the investigation we made (MRI scanner and usual blood tests).

A 3 week hospitalization in an addiction ward was started. Treatment was based on cognitive-therapy modified for self-strangulation: Identification and exposure to high-risk situations; control on these high-risk situations; cognitive restructuring and restoring self-esteem. Mr. B stopped self-strangulation behaviors subsequent to therapy.

## Discussion

This case report questions 3 main diagnoses: a paraphilia with autoerotic asphyxia, an Obsessive-Compulsive Disorder (OCD) or a behavioral addiction. These 3 diagnoses will be discussed in detail below.

The physiopathology of autoerotic asphyxia is the deprivation of oxygen towards the central nervous system leading to a rapid dysregulation of the central inhibitory mechanisms that control sexual activity. It results an heightening of the senses associated by some as erotic hallucinations [20,21]. In the case of Mr. B, while the pleasure induced by hypoxia is present, no other criteria for sexual masochism disorder or any other paraphilic behaviors were reported or observed during the hospitalization. Moreover, Mr. B was engaged in a long-lasting sexual relationship with no disturbance of his sexual performance. Hazelwood has previously described 5 criterion to attribute the death by AEA from an accidental death by asphyxia [22,23]: (1) evidence of physiological mechanism for obtaining or enhancing sexual arousal and dependence on either a self-rescue mechanism or the victim's judgment to discontinue its effect; (2) evidence of solo sexual activity; (3) evidence of sexual fantasy aids; (4) evidence of prior dangerous autoerotic practice; (5) no apparent suicidal intent. Much research on asphyxiophilia has been done by forensic scientists after death, in particular because asphyxiophilia is generally a secretive practice. All death reported are men, with a mean age of 37 years old [21], and in many cases the death scene shows evidence of sexual staging [5]. These studies also reported that this paraphilia (AEA) is often associated with other paraphilia (for example traveling, exhibitionism...) indicating a poverty of engagement in affective relationships and that sexual-enhancing substances are also often found on the death scene [21]. Mr B. began its first strangulation activity during adolescence in the presence of school friends before any sexual pleasure seeking behavior.

There is an increase in the prevalence of strangulation activity and to use ligature to strangulate [15]. Up to 58% of children interviewed practiced this activity everyday [24]. Hence, the repetitive behavior could represent an equivalent of a compulsive behavior in front of obsessive ideas. In fact, the current DSM 5 formally recognizes body dysmorphic disorder, trichotillomania, neurotic excoriation and body focused repetitive behavior disorder as psychodermatological disorders belonging to the category of Obsessive-Compulsive Disorder (OCD), but these syndromes are skin-related syndromes [25]. We can propose the hypothesis that repetitive strangulation could be a derivate of body focusing behavior disorder (but this would have same pitfalls as *a priori* diagnosis). However, Mr B. does not report obsessive ideas. He reports practicing up to 40 times a day but in response to an urge to relax and to feel good. The one aspect that fits an obsessive-compulsive personality tendency toward suppression of emotion and a negative association with emotional display.

Initially, people practicing self-strangulation were described as good at school and doing sports, but studies showed that substance abuse are significantly associated to

the practice [10-12,14] permitting being “high without a drug”. One explanation is these children might not have possibility to find a substance or alcohol to abuse, so they move towards strangulation. About it is possible to consider Impulsive Control Disorder (ICD) with impulsivity and the tendency to risk-taking behavior in this case. Risk conduct is generally defined in 4 steps [15]: (1) risk taking; (2) high sensation seeking; (3) loss of consciousness (as in drunkenness); and (4) awakening-survival. These steps are the risk-seeking factors that further the addiction to strangulation activity. Cerebral hypoxia resulting from strangulation is associated with a brief euphoria (a “high” feeling) before loss of consciousness. The sensations are perceived as pleasurable and tend to promote the behavior, reinforcing the repetition of these behaviors. In adolescence, the maturation of the brain structures (particularly the frontostriatal circuitry) could modify the balance between novelty seeking, experimental drug use, the pursuit of risky behavior, and sensitivity to reward and subsequent impulsive choices [16]. A preference for novelty could represent an adaptative behavior of Prefrontal Cortex, promoting the exploration of the environment. Furthermore, the immaturity of cerebral structures mediating perception, risk evaluation and reward could encourage more risky experiences in the environment of peer groups that would permit the construct of a self-regulation through cerebral maturation. In this way, peers play a crucial role in the tendency to engage in risk behavior: adolescents underestimate risks more when encouraged by peers [16]. The consequence of this risky conduct is to expose adolescent to the potential for addiction development [16]. We could argue that Mr B. has trouble with emotional and behavioral self-control in regard to this repetitive behavior of self-strangulation that initiated in adolescent experimentation. However, his being in a long-lasting relationship and pursuing successful academic study programs do not support an ICD diagnosis.

Repetitive strangulation could represent an attempt to cope with emotional distress. Indeed, strangulation behavior has described by Mr. B. himself as “a way to escape from the reality”. Emotional overregulation is a limited awareness of ones feelings, combined with a tendency to suppress feelings and underevaluating the importance of feelings in decision-making. We could view Mr. B’s repetitive strangulation as an impulsive behavior called «urgency» [17,26]. Urgency is a strong predictor of maladaptative repetitive behaviors such as addiction or compulsive buying and is related to a reduction in self-control and decision-making skills. Moreover, we could argue that the behavior could help him to avoid loneliness or is a consequence of low self-esteem, as the behavior began when he was a lonely child at home with a rigid and powerful mother. The escape that the behavior provided him from the reality of his difficulties in his internship suggests a low self-esteem with a need to compensate. That could fit with the neuropsychological profile of this patient and with his clinical evaluation: he was in the hurry to repeat strangulation over and over to relax or “to escape the world”.

## Conclusion

We report here the case of a 25-year old male internship student who has practiced manual self-strangulation up to 40 times a day since adolescence.

From this case description, we could hypothesize that, Mr. B. has a repetitive maladaptative strangulation behavior that represents a coping strategy for escaping emotion that he has urgency to suppress because of emotional overregulation linked to plausible obsessive compulsive traits of his personality.

This case illustrates an unrecognized issue of a repetitive behavior in a patient with multiple substance abuses. It sheds light on the important question of risk conducts as addiction with, in fact two different conducts actually not distinguishing in DSM-5: (1) a paraphilia (AEA); and (2) a self-strangulation. In the one hand, the paraphilia could be associated with a sexual addiction or even reach criteria of sexual addiction diagnoses

by itself. It occurs in late adolescent and male adults specifically and includes ritualistic bindings, pornography scenes and a way to escape from binding. In the other hand, the self-strangulation developed in adolescence could reach addiction without substance criteria, as our clinical case shown.

Specifically, this case report addresses importance of recognizing the potential for strangulation and self-strangulation in patients with substance use disorder (and in adolescent in general), in order to prevent fatal injuries.

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