

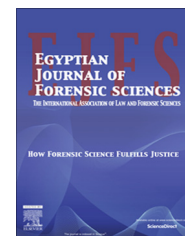
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CASE REPORT

Uxoricide and dismemberment in a case of illicit anabolic steroid use: A case report and literature review

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Abstract Despite abounding evidence for the harmful effects of synthetic anabolic-androgenic steroids, they are commonly misused for competitive and body-image reasons. Steroids are often used in the context of poly-drug misuse, which may mask their specific effects on behaviour, such as increasing aggression. We present our case report as a concrete example of current steroid-related substance-misuse trends. A 25-year old Finnish male with various psychiatric and drug-related symptomology, but almost no previous history of aggressive behaviour, battered his wife to death and mutilated her body after a five-week steroid regimen.

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1. Introduction

Anabolic-androgenic steroids (AASs) are a family of hormones that include the naturally secreted male hormone testosterone, and its almost 100 commercially produced derivatives, such as nandrolone and 17 α -methyltestosterone.^{1,2} All AASs possess both muscle-building and masculinising properties, and are thus used as drugs of abuse by both athletes and non-athletes for competitive and body-image reasons.³ Also,

it has been established that in animals, including humans, testosterone serves as one of the hormonal modulators of both unplanned, affect-driven, impulsive aggression and premeditated, instrumental aggression.⁴ Accordingly, several studies link a myriad of psychiatric complications to AAS abuse, ranging from aggressive and violent behaviour to depressive, manic or psychotic symptoms.^{3,5} Here, we present a Finnish case of extreme violence perpetrated by an abuser of AASs who had almost no previous history of aggressive behaviour.

2. Case description

A 25-year-old welder was referred to a forensic psychiatric examination by the National Institute for Health and Welfare (THL) having been accused of murdering his wife of three years and cutting off both her arms with a saw. According

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to the forensic pathologist, death had been caused by several blows to the head using a broken-off chair-leg. In addition, 46 stab wounds were counted on the corpse, and several psychoactive medications and a blood-alcohol level of 2.2‰ were detected by body fluid analysis.

The welder was immediately apprehended by the police after having called emergency services and explaining that he had killed his wife. During the following days he was interviewed by the police several times. He told them that he and his wife had spent the previous evening drinking whilst his wife's children from her previous marriage were staying with their father. He told the police that the couple had a tendency to argue whilst under the influence of alcohol, and they had agreed that in such a situation he would leave their apartment. On the evening in question, an argument duly broke out, and he tried to leave in accordance with their agreement. However, on this occasion, his wife prevented him from leaving by kicking and beating him. He fell and hit his head, after which "everything went black and I can't remember what happened". When he regained consciousness next to his wife's mutilated corpse he wrote a note saying "do not come in, something terrible has happened" and attached it to the door of the apartment in order to prevent the children seeing their mother's dismembered body. Then he went and told a friend of his who lived nearby what had happened, and with his support called the emergency services.

The welder's wife's three teenage children stated that he was quiet, shy, and easy-going, and never had rows with them. The couple didn't argue except when under the influence of alcohol, and even then he didn't seem angry, and usually left the apartment during any conflict. In contrast, the children reported that their mother was a "drama queen", who was annoyed by the passivity of her husband. However, once, several years before, he had hit his wife, breaking her nose. This was his only criminal record entry.

3. The forensic mental state examination

In accordance with Finnish forensic psychiatric practice, the welder was admitted to a closed ward in a forensic psychiatric hospital for two months in order for a forensic mental state examination to be conducted and the forensic psychiatric report to be produced.

3.1. Personal history

The welder's primary family was stable, although his father's child-rearing methods had included stronger physical coercion than was normal practice at that time. At elementary school he had bullied other children, but in his early teens this ceased as his own social anxiety became increasingly problematic; indeed, he was not able to graduate from vocational college due to his inability to give presentations or to work in front of fellow pupils or instructors. He began drinking regularly during weekends from the age of 14, and as the drinking increased over the years, and eventually got out of hand, this further exacerbated his tendency towards insomnia and social anxiety. Nevertheless, after dropping out of vocational training, he served in the military for half a year, in compliance with Finnish regulations on compulsory military service. He said that, psychologically speaking, military service was easy

because of the highly structured nature of the social interaction and activity that it entailed. Even so, he was cautioned twice due to two hours of absence without leave, and once for appearing in uniform under the influence of alcohol. After finishing his military service, he was trained by his father, also a welder by trade, at his workplace, and eventually became a skilled laborer. He was almost continuously employed by the same employer throughout his adult life. His behaviour at the workplace was described as impeccable, but he was dismissed two days before the offence due to several absences related to substance misuse.

3.2. Marriage

The welder was uneasy around women, but had managed, while under the influence of alcohol, to form a few short-term sexual relationships before getting married at the age of 22. His wife was 16 years older than him and he said that he was immediately attracted by her looks and outspoken temperament. Despite the age difference, the couple were physically well-matched, sharing a similar taste in rock-style clothing and tattoos, and engaging in almost daily sexual activity throughout their marriage, even when problems arose in their relationship. He found that she complemented his personality, as he was prone to shyness and self-doubt. At the beginning of the relationship he enjoyed the dominating role of his wife, but soon he began to feel oppressed, as his wife's tendency to restrict his life increased. She was jealous of his relationships even with his male friends and was continually worried that he would enter into relationships with other women. He was adamant that he had no interest in other women. His wife also suspected him of using illegal drugs, which he also denied. The couple began to have rows, but only whilst both were under the influence of alcohol. Eventually, his wife began preventing him from going out without her. His parents noted that he was becoming increasingly depressed and withdrawn, but he was unable to openly express his increasing anxiety and resentment about being confined to their home. Despite feeling absolutely dependent on his wife emotionally, he attempted to leave the relationship on several occasions, but always ended up returning.

3.3. Psychiatric history

The welder's first dealings with psychiatric services occurred after three months of marriage, although he explained that to some extent his problems had existed since his teens. These problems included social anxiety, insomnia, suicidal thoughts and, during one six-month period after his marriage, bulimia. Various medications – diazepam, zopiclone, mirtazapine, levomepromazine, temazepam, amitriptyline + chlor-diazepoxide, melatonin and zolpidem for insomnia, dexamfetamine and methylphenidate for concentration problems, venlafaxine for depression, lamotrigine and valproate for suspected bipolar disorder, mianserin, lorazepam and clonazepam for anxiety – had been prescribed, but to no avail. This was partly due to low compliance, except for clonazepam, to which he became addicted as dosage increased from 1 mg to 12 mg/day at the time of the offence. Within two and a half years of his marriage, he had been hospitalized three times due to acute multiple drug overdose, and his alcohol intake

had increased to five pints of lager a day, in addition to one or two 0.75 L bottles of spirits during the weekends. During vacations he drank continually, experiencing auditory hallucinations after cessation.

3.4. Anabolic-androgenic steroids

As the welder's problems continued, they began to further affect his already low self-esteem. In order to battle his addictions and regain feelings of assertive masculinity, he began to go to the gym 10 weeks before eventually killing his wife. After going to the gym regularly for five weeks, a friend of his suggested that they begin using anabolic steroids. He agreed to this without hesitation, and began using 200 mg of nandrolone and 250 mg of testosterone once a week intramuscularly. The steroids were ordered over the internet and the dosage was based on information found on the internet. He said that he felt immediately addicted to the steroids as they made him stronger and more energetic; very soon he also observed results in his muscular growth. As side-effects he noticed acne on his back and increased sexual interest. He also noticed an increase in aggressive impulsivity; once, during a row with his wife, he threw his phone against the wall.

3.5. The offence under prosecution

Before the day of the offence, the welder had suffered several sleepless nights. Earlier in the day, he had taken 12 mg of clonazepam as prescribed, 300 mg of codeine tablets taken from his mother and wife, and about 100 mg of methylphenidate. After that he began drinking heavily. Late that night, a fight broke out between him and his wife and he decided to leave the apartment as he usually did in such a situation. However, his wife physically prevented him from leaving, and pushed him so that he fell and hit his head on the kitchen table. He described feeling a rush of aggression, after which the next thing he remembers is kneeling beside his wife in a pool of blood. He couldn't recall sawing off his wife's arms and could not say whether the dismemberment was part of the attack or an attempt at destroying the body in order to conceal it.

3.6. Psychiatric and physical status

A physical examination, including an inspection of the welder's genitals, showed that he was in good physical health, with a robust physical constitution. He had several tattoos on his upper back, including one featuring the name of his wife. He had cut marks on his wrists, and he also had a superficial burn on his arm where he had burned off an earlier tattoo of his wife's name after an argument. Testosterone and estrogen levels were normal and drug screen results were negative, except for oxazepam, which he had obtained from another prisoner prior to arriving in the forensic unit.

His psychiatric status was assessed using SCID-1 and -2 structured interviews. He interacted well and expressed himself coherently. No panic symptoms or antisocial behaviour were seen in the examination ward. However, his personality appeared disordered, with indications of emotionally unstable, schizoid and anxiety features.

In order to assess him for possible paranoid psychotic thoughts, he was asked whether attempts had been made to

harm him by others. He responded by describing how, after being apprehended by the police and being taken to the emergency services department of the local hospital because of suspected intoxication, he overheard the police and nurses discussing plans to kill him because of the abhorrent nature of his crime. He explained that one of the nurses tried to "frame him" by causing a commotion by knocking furniture together, as if she was being attacked by him. Also, he reported hearing the policemen discussing the possibility of shooting him and misrepresenting his death as an accident, or inserting a microchip into his leg in order to track his whereabouts to find out where he purchased steroids from. When questioned about these experiences, he became confused and unsure whether they had actually happened, or whether they were, in fact, psychotic in origin. Indeed, during the forensic assessment his view concerning these experiences fluctuated between an understanding of their delusory nature and an absolute conviction that the events had really taken place. In the end, he concluded that he "doesn't know what he knows anymore". As for earlier delusions, he admitted having experienced auditory hallucinations during alcohol withdrawal, and to having felt somewhat paranoid when he had used the stimulant methylphenidate as prescribed for his concentration problems. No chronic or non-substance related psychotic symptoms were discovered in his history, and during the examination he showed no new psychotic symptoms.

3.7. Conclusions of the forensic mental state examination

The welder was diagnosed with mixed personality disorder (ICD-10: F61.0) with anxious-avoidant, emotionally unstable, and to a lesser degree, schizoid features. In addition, he was dependent on alcohol and clonazepam (ICD-10: F10.21, F13.21). At the time of the offence, he was under the influence of alcohol, as well as some or all of the following: clonazepam, diazepam, temazepam, methylphenidate, and codein (ICD-10: F19.9). Due to these substances and the preceding use of AASs, he had suffered from a transient psychotic reaction, at least immediately after the offence, but possibly during it (ICD-10: F19.51). By Finnish criminal law, he was seen as responsible for intoxicating himself with the aforementioned substances and was thus deemed fully responsible for the offence. He was convicted of murder.

4. Discussion

Epidemiological figures concerning AAS abuse in the general population of Finland vary from 0.3%⁶ to 3.9%⁷ depending on demographic data, such as age group and educational background. Among Finnish offenders, steroid abuse is by no means a new phenomenon,⁸ and, to the extent that data from neighboring Sweden can be extrapolated, it seems to have become more common in recent years within the context of poly-drug abuse,⁹⁻¹¹ with up to 26% of drug-abusers in remand prison reporting AAS use.¹² However, it is still debated whether steroid use has a causal effect on increased aggression, or whether individuals with a propensity towards violence are more prone to use AASs.¹³

Our case is a concrete example of these substance misuse trends, and highlights the unpredictability of AAS-related effects on behaviour. Far from being a habitually violent

man, the individual in the present case was, according to the victim's children, "quiet, shy and easy-going", and more inclined towards avoidance than conflict. Although he suffered from early maladaptation, prolonged poly-drug abuse, various psychiatric symptoms, and had been for years in a chaotic, abusive and conflict-prone relationship, which are in themselves well-recognized predictors of violent behaviour,^{14–16} he nevertheless had only a single act of physical violence in his recorded history. This prompts the question of what new element in this admittedly dangerous combination of risk factors might have led to the failure of the subject's usual coping strategies: the preceding altercation was, after all, no different in scale from numerous others in his marriage.

Although it has been argued that, as AAS use normally occurs in the context of poly-drug abuse, and that it is therefore substance misuse *per se* which contributes most to the risk of violent offending,¹⁷ it seems plausible to establish a link, in this particular case, between the offence and the use of AASs themselves. However, as with all complex behaviour, an act of violence demands a multifactorial explanation, taking into account issues such as the individual's temperament, social cues, his neuropharmacological state, including alcohol¹⁸ and benzodiazepines,¹⁹ and predisposing genetics. Accordingly, a recent study showed that the stop codon Q20* in the serotonin 2B receptor gene (HTR2B) in a Finnish founder population is associated with impulsivity and aggression, particularly under the influence of alcohol.²⁰ Interestingly, among the HTR2B Q20* carriers, temperamental traits resemble a passive-dependent personality profile and carriers suffer from emotional dysregulation, such as seen in our case. Thus, although it would be over simplistic to describe the effect of AAS use on this individual's behaviour solely in terms of so-called "roid-rage",²¹ it would be equally hasty to neglect the intricate relationship between testosterone, genetic predisposition, alcohol and violence,^{20,22} or the possibility of an AAS-induced psychotic reaction,^{23,24} as it is clear that he did suffer from acute psychosis immediately after the offence.

Despite evidence to the contrary,^{25–27} a perception of harmlessness still surrounds AAS use.²¹ Their use persists due to the pressure of cultural body image ideals and the easy availability of AASs and their chemically modified designer derivatives,²⁸ especially through internet pharmacies, as in the case reported here. In addition, the exact causal link between AAS use and violence is still disputed: confounding factors such as the use of other illicit substances, as identified in statistical investigations,¹⁷ or the possibility of systematic non-participation in interview-based studies²⁹ may mask a specific, potentially catastrophic effect of steroid abuse in predisposed individuals,³⁰ such as the subject presented here. Future studies focusing on the genetic constitution of individuals reacting violently to AASs may yet shed light on this issue.

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Declaration of interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

Ethical approval

None declared.

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