Anesthesiologist Addicted to Propofol

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Substance abuse and addiction (dependence) among anesthesiologists is well documented,1–6 and addiction to virtually all opioids and hypnotic agents has been reported.1–4

Propofol is a short-acting intravenous induction and maintenance anesthetic agent introduced into clinical practice in this country in the past few years. Abuse of or dependence on propofol has not been reported in the literature. The company that markets this drug in the United States (Stuart Pharmaceuticals) indicates that they have received no reports of abuse or of “Dipirvan-seeking” behavior. § This is a case report of an anesthesiologist who abused and became dependent on propofol.

CASE REPORT

The patient was an anesthesiologist in his early 30s. Before April 1991, the patient’s experience with self-administration of drugs included some experimentation while in high school, college, and medical school with marijuana, cocaine, and other chemicals, but not much alcohol. In April 1991, a variety of stressors led him to consider self-administration of drugs to help cope with the stress. After consulting the Physicians’ Desk Reference to compare side effects of various drugs, he decided on fentanyl, midazolam, and propofol. He tried midazolam and fentanyl by intravenous injection but did not like the postuse sleepiness and prolonged action. He tried 100 mg propofol intravenously, slept for about 10 min, felt a little “fuzzy” for 30 s, and then became clear-headed with no other side effects. He listed the following reasons for settling on propofol: 1) the Physicians’ Desk Reference reported no known cases of addiction; 2) it was not controlled and therefore was easy to obtain; 3) it was ultra-short-acting; and 4) there were no side effects.

While keeping the amount of each intravenous injection constant, the frequency of injection increased to 10–15 times per day, and injections occurred both at work and at home. He stated that by this time he was no longer using propofol because of stress but because he had an overwhelming compulsion and craving to use the drug again. His performance at work started to deteriorate as he began to arrive late for cases or to not respond when paged in the operating room. His family expressed concern about changes in his personality.

In late September 1991, the anesthesiologist sought psychiatric help to deal with his problem but did not relate to the psychiatrist the extent of his drug use. A diagnosis of exogenous depression was made, and fluoxetine and trazodone were prescribed. Shortly thereafter, he asked for a leave of absence from work. At this time he did not describe the extent of his drug problem with his department chief. However, because of reports from nurses who had observed this anesthesiologist’s unusual behavior in the locker room and had found syringes with milky liquid residue in the bathroom, the department chief contacted the Medical Society of the State of New York’s Committee for Physicians’ Health in early October 1991.

The Committee for Physicians’ Health contacted the anesthesiologist, who agreed to cooperate with the committee but was not forthcoming in detailing his drug use. He gave the Committee consent to speak with his psychiatrist, who stated that the patient had reported only benzodiazepine and fentanyl use and considered that his depression was primary. The psychiatrist did not recommend that the patient enter a chemical dependency rehabilitation program or attend self-help groups. With this evaluation the anesthesiologist was allowed to return to work in early January 1992 after a contract with the Committee for Physicians’ Health to monitor urines and clinical performance had been established.

On February 6, 1992, the anesthesiologist took his third call after returning to work. He was found that night unconscious in the bathroom and was taken to the emergency room. He was found to have self-administered 100 mg propofol. After being confronted by his department chief, he agreed to enter an extended-care drug rehabilitation program.

DISCUSSION

Substance abuse is defined as “the use of a psychoactive substance in a manner detrimental to the individual or society but not meeting criteria for substance or drug dependence.”7 We know of two anesthesiologists currently in treatment who had abused propofol as part of a whole spectrum of drug use, but in neither case had propofol been the “drug of choice.” The case presented here, however, is very typical of drug dependence characterized by three cardinal signs and symptoms: 1) compulsion or craving; 2) loss of control over the amount or frequency of the drug used; and 3) continued use of the drug despite adverse consequences.
The abuse potential of propofol has not been defined, and the reasons why an individual would abuse any drug are complex. Among the 2,700 publications describing the effects of propofol, 30 articles at least mention that patients experienced euphoria during recovery from the anesthetic. For example, Brazzalotto estimated that 40% of 542 patients awoke with feelings described as pleasurable. Sunatra et al. reported euphoria in 1.25% of 80 patients. Recently in the British literature there have been reports of sexual disinhibition on awakening from short procedures in which propofol had been used. Phenomena such as this led Smyth and Collins-Howgill to comment (somewhat in jest) "We wonder whether aphrodisiac can now be added to the list of properties of the drug." Although the anesthesiologist described in the current case report did not report euphoria or disinhibition, there must have been some pleasurable effects, even if merely respite from stress, to encourage his repeated use.

Possible withdrawal phenomena have been suggested after use of propofol. Recent reports include 3 days of extreme "jitteriness" after a 2-week period of continuous infusion of propofol in an 18-month-old child and grand mal convulsions and other evidence of a "classical general depressant withdrawal syndrome" in a 41-year-old person after a 5-day infusion of propofol and papaveretum.

Although this anesthesiologist did not experience any overt withdrawal phenomena after his temporary cessation of use in October 1991, the possibility exists that he was experiencing some subclinical dysphoria that prompted his continuing use. Jaffe states:

> It is quite conceivable that individuals who use short-acting drugs to induce euphoria or reduce tensions can perceive a relative dysphoria or an exacerbation of those same tensions (rebound effects) as the drug effects wane. Such increases in unpleasant feelings might then contribute to the motivation to repeat the use of the drug, and the alleviation of the withdrawal phenomena might increase the effectiveness of the drug as a reinforcer of drug-using behavior.

In summary, this is the first reported case of an anesthesiologist who became dependent on propofol. This case demonstrates certain points that deserve final emphasis. Anesthesiologists are at risk of abusing drugs common in their workplace, and use of some of these drugs leads to rapid development of physical and psychological dependence. It is important that departments of anesthesia have a knowledge of the existence of the Committee for Physicians' Health in each state so that, as in this case, advice and assistance are readily available. This case typifies our experience that anesthesiologists who become addicted to injectable drugs may not do well with one-on-one, outpatient therapy; inpatient therapy, which includes peer confrontation, should probably be considered more appropriate.

Finally, because a monitoring program for a recovering anesthesiologist should include frequent urinalysis specific to the drug(s) of choice, it is important to know that there is a liquid chromatographic analysis for the presence of propofol and its metabolites in urine.

REFERENCES