Salvia Divinorum: A Case Report

Salvia Divinorum: Bir Olgu Sunumu

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ABSTRACT

Nowadays, narcotic and enjoyable substances threaten especially adolescents and young people. These substances are fairly common and various. This makes them easier to access. Their use is also closely associated with low socio-economic and socio-cultural conditions. It has been known psychoactive and hallucinogenic effects of Salvia divinorum for many years. It is abused for this purpose. In this study, we presented a patient who developed renal failure and rhabdomyolysis due to immobility after abuse of Salvia divinorum. It has been known that the patient remained immobility for four days after using Salvia divinorum and did not use any additional drugs. In this case report, we examined the effects of Salvia divinorum. Of course, we do not think that a single case report can explain clearly the effect potential of Salvia divinorum. Considering that there were only a few studies in the literature on this regard, we believe that this case can contribute to the literature. Furthermore, the psychosocial features of our case support that the risk of drug use may be higher in individuals with lower levels of income. It has been discussed accompanied to the literature that the duration of action of Salvia divinorum used at high doses may be longer than usual and substance dependence is associated with low socio-economic status.

Key Words: Salvia Divinorum, rhabdomyolysis, efficacy, socio-economic status.

ÖZET

Günümüzde uyuşturucu ve keyif veren maddeler özellikle genç ve adelosan yaş grubunu tehdit etmektedir. Bu maddelerin oldukça yaygın ve çeşitli olması ulaşımlarını da kolaylaştırmıştır. Kullanımları düşük sosyoekonomik ve sosyokültürel durum ile de yakından ilişkilidir. Psikoaktif ve halüsinojenik etkisi uzun yıllardır bilinen Salvia divinorum bitkisi de bu amaçla suistimal edilmektedir. Biz burada Salvia divinorum'un kötüye kullanılması sonrasında hareketsizliğe bağlı böbrek yetmezliği ve rabdomiyoliz gelişen bir olgu sunduk. Olgunun salvia kullanımı sonrası dört gün süre ile hareketsiz kaldığı ve ek başka uyuşturucu kullanmadığı bilinmektedir. Bu olgu sunumunda Salvia divinorum'un etkilerini araştırdık. Elbette, tek bir vaka raporunun Salvia divinorum'un potansiyel etkisini net olarak açıklayabileceğini düşünmüyoruz. Bu konuda literatürde sadece birkaç çalışma olduğunu düşünürsek, bu vakanın literatüre katkıda bulunabileceğine inanıyoruz. Ayrıca, olgumuzun psikososyal özellikleri, düşük gelir düzeyine sahip bireylerde uyuşturucu kullanma riskinin daha yüksek olabileceğini desteklemektedir. Yüksek dozda kullanılan salvia divinorumun etki süresinin bilinenden çok daha uzun olabileceği ve madde bağımlılığının düşük sosyoekonomik durumla ilişkisi literatür ışığında tartışılmıştır.

Anahtar Kelimeler: Salvia Divinorum, rabdomiyoliz, etkinlik, sosyoekonomik düzey.

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INTRODUCTION

Nowadays, narcotic and enjoyable substances threaten especially adolescents and young people. These substances are fairly common and various. This makes them easier to access. Their use is also closely associated with low socio-economic and socio-cultural conditions. It has been known psychoactive and hallucinogenic effects of Salvia divinorum for many years. It is abused for this purpose. In this study, we presented a patient who developed renal failure and rhabdomyolysis due to immobility after abuse of Salvia divinorum. It has been known that the patient remained immobility for four days after using Salvia divinorum and did not use any additional drugs. It has been discussed accompanyed to the literature that the duration of action of Salvia divinorum used at high doses may be longer than usual and substance dependence is associated with low socio-economic status.

It was endemic only to the Mazatec region of the Sierra Madre mountains in Oaxaca, Mexico. Its psychoactive properties have been known for a long time (1). Mazatec Indians have used it for shamanic rituals and spiritual experiences due to its hallucinogenic potential and as a traditional drug in the treatment of diseases such as migraine, rheumatism and diarrhea for centuries (2). It was known to be used in the treatment of Alzheimer's disease and schizophrenia (3). Epidemiological studies on the use of Salvia divinorum were limited to North America and Europe. Different findings were obtained from different populations. For example, it was found that it was 1.3% among adults in the U.S., 3.8% among adolescents in Canada and 11% in Italy (4-7). Nowadays, Salvia divinorum has great importance among addictive substances because it was easily used, and common among young people, and led to psychological and physical damage. In literature, the use rate of Salvia divinorum was similar to that of cocaine and ecstasy. The use rates of heroin and methamphetamine were lower than use rate of Salvia divinorum. The most common drug used among young people was marijuana (cannabis) (8). Life-long addictive effects of Salvia divinorum and synthetic cannabinoids were much lower than that of heroin and cocaine (9).

CASE REPORT

A 23-year-old male patient was found by emergency aid team and brought to our emergency department. According to the statement of the patient's relatives and emergency aid teams, the patient remained for about immobility four days in the place where he was found located. On the physical examination of the patient, he was conscious, oriented and cooperative. Blood pressure was 130/76 mm Hg, heart rate was 80/min, respiratory rate was 16/min and oxygen saturation was 98%. Heart sounds were rhythmic and respiratory sounds were normal. On the abdominal examination of the patient, there were no defense and rebound signs and bowel sounds were normal. The bilateral lower limbs were edematous and the lower limb dimensions increased three fold. It was seen in the patient that an ecchymotic, hyperemic, erythematous, hot and edematous area measured approximately 40 cm x 15 cm in dimensions was extended from the left gluteal region to the left lumber region. The laboratory results of our patient are shown in table 1.

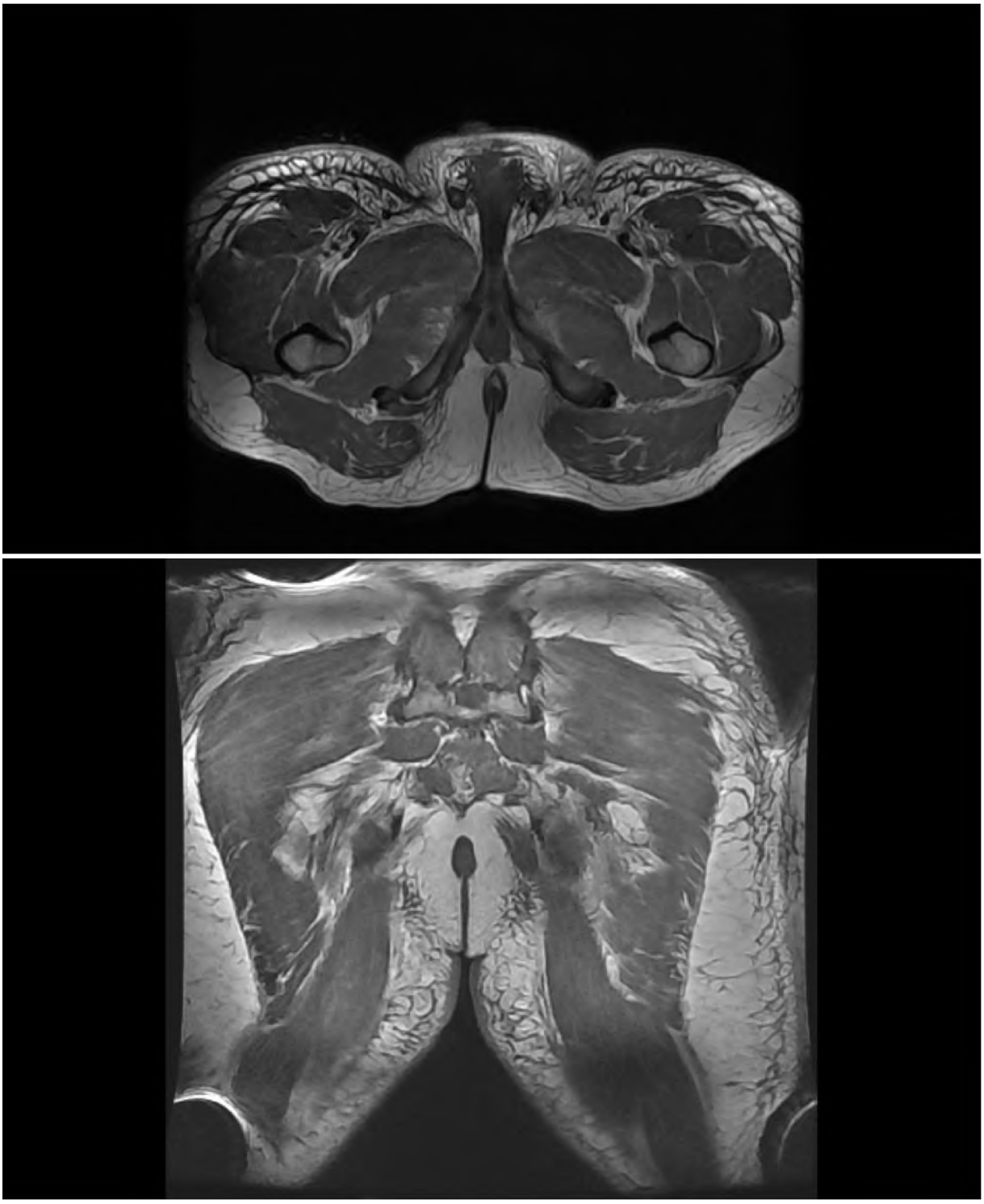
He was hospitalized to the intensive care unit with pre-diagnosis of rhabdomyolysis and acute renal failure and underwent hemodialysis. There were findings of compartment syndrome in the hip MRI but surgical intervention was not considered (Figure 1-2). Superficial ultrasound imaging was taken to evaluate gluteal and lumbar necrotizing fasciitis. The skin and subcutaneous tissues were edematous. The operation was not considered. Ampicillin sulbactam 4x1 gr and ciprofloxacin 2x200 mg were intravenously started for the patient with high CRP values. On the 3rd day of hospitalization, all abdominal ultrasonography was taken. Pleural effusion was observed on the right hemithorax. On the 4th day of hospitalization, peripheral blood smear was made to evaluate anemia. Hemolysis was detected. The patient was transfused with a red cell suspension during hemodialysis. On the 7th day of hospitalization, the urinary output was 320 cc/day in the patient with anuria who underwent hemodialysis and ultrafiltration treatment. Mannitol and furosemide were added to the treatment. After two days, the urinary output was 2500 cc/day. Diuretic therapy was discontinued in the patient who had polyuric phase. Liquid and electrolyte support therapy was given. The patient was consulted to the psychiatry department for psychological substance abuse. It was learned that the patient did not work in a regular job and never went to school. It was understood that the patient with a history of drug use sometimes exhibited aggressive behavior and had social cohesion issues. It was detected that the patient lived in a crowded family and in a low income area. After the discharge, the patient was referred to a psychological substance abuse treatment center.

TABLE 1: Laboratory results of our patient

	Glucose	Ürea	Cr	AST	ALT	CK	LDH	Ca	Na	K	P	Hgb	WBC	Plt	CKMB	CRP	Sedimentation
First Day	145	83	7.5	1606	709	264193	3963	6.2	124	5.1	6	7.5	12400	121000	300<	162	60
Last Day	93	27	1.2	30	32	193	234	10.3	140	3.9	3	11.2	8200	243500	45	47	48

FIGURES: Figure 1-2 Hip MRI

The signal of the proximal part of the thigh and of all muscle groups around the hip is increased due to edema. At the same level, the signal and thickness of the skin and subcutaneous fat planes are increased. A fluid collection in the form of plaster is found within the fat planes.



DISCUSSION

In this case report, we examined the effects of Salvia divinorum. Of course, we do not think that a single case report can clearly the effect potential of Salvia divinorum. Considering that there were only a few studies in the literature on this regard, we believe that this case can contribute to the literature. Furthermore, the psychosocial features of our case support that the risk of drug use may be higher in individuals with lower levels of income.

The psychoactive compound of Salvia divinorum was Salvinorin A. Salvinorin A was a potent agonist of the dopamine D2 receptor and the selective kappa opioid receptor. Its psychomimetic effects were found to be similar that effects of seratoninergic agonists and N methyl D aspartate glutamate receptor antagonists such as mescaline and lysergic acid diethylamide (3). Its duration of effects was short and rapidly convert to the inactive metabolite salvinorin B (10).

When its leaves were taken by chewing, it was rapidly absorbed directly from the oral cavity for half an hour to one hour (11). It was excreted by the urine and saliva. If its dried leaves were used in the form of cigarettes, a stronger doze was reached within 15 minutes and led to loss of control of the body similarly to ketamine and phencyclidine (12). Our patient said that he used dried leaves through inhalation accompanied with cigarette. He could not give reliable information about the dosage. Immobilization of the patient was stayed for a long time suggests that the duration effect of Salvia divinorum might increased in a dose-dependent manner. There were few studies published in the literature about effects and duration of action of Salvia divinorum. It was seen in the literature that the sensory and cognitive effects of Salvia divinorum were deep but short and that its potential was lower than that of other drugs, including alcohol in terms of risks such as injury, interpersonal conflict and property damage. However, there were also studies that investigated the exposure to high doses (13). It was emphasized in these studies that unusual mystical hallucinations characterized with orientation changes were seen and the pressure feeling in the body was significantly increased in a dose-dependent manner in participants taking high dose of Salvia divinorum (14).

A study conducted in Canada has also noted that the use of Salvia divinorum is more common among those who have lost their self-esteem and who have low ties with the school. In the same study, it was reported that use of Salvia divinorum showed regional differences (5). Our patient came from low socio-cultural and economic region of the city we live in. It was noted that that the patient was depressed and anxious in bilateral talks. Our patient was not trained and was unemployed. In a study conducted in our province of Bursa, it has been determined that the majority of drug crime cases consisted of young and middle-aged men with lower socio-cultural and economic status and the majority of drug-related crimes were associated with cannabis (15).

Synthetic cannabinoids are known to cause rhabdomyolysis and renal failure (16). However, some animal experiments have shown that salvinorin A, which is main active ingredient of Salvia divinorum, caused almost no histological changes in the spleen, blood, brain, liver, kidney, and bone marrow (17). In our case, there were rhabdomyolysis and renal failure due to prolonged immobility after the use of Salvia divinorum. In the current studies the psychogenic and hallucinogenic effects of Salvia divinorum were more mentioned in the literature. It has been learned that the patient did not take any other substance or medication in addition to the use of Salvia divinorum on the day of the event. This issue was especially emphasized in interviews performed with the patient and his family.

Consequently, the use of Salvia divinorum was led to deterioration in visual perception, mood and somatic sensations and even more importantly, to a very high rate of change in the external reality and self-perception. Our knowledge especially about complications developed after high doses was not enough. The reduction in interaction with ourselves or around us, depending on social, cultural and economic reasons, was both the cause

and the consequence of substance dependence.

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