

Anorexia Nervosa and Cannabis Abuse: A Case Report

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ÖZET:

Anoreksiya nervoza ve esrar kötüye kullanımı: Olgu sunumu

Alkol-madde bağımlılığı ile yeme bozukluğunun yüksek oranda komorbidite gösterdiği bilinmektedir. Esrarın tetrahidrokanabinol gibi aktif bileşenleri beyindeki endojen kanabinoid reseptörlerini (CB1 ve CB2 res.) etkinleştirir. CB1 reseptör stimülasyonunun iştah artışına yol açtığı ve antiemetik etki oluşturduğu bilinmekte olup, kanabinoidler bu etkileri nedeniyle tıbbi amaçlı kullanımda yer almaktadır. Bu vaka sunumunda esrar kullanan genç kadın hastada gelişen anoreksiya nervoza tablosu aktarılacaktır. 17 yaşındaki hastanın kilo kaybı şikayeti ve 3 yıldır esrar kullanma öyküsü vardı. Esrarın iştah artırıcı etkisine rağmen hastada anoreksiya nervoza gelişmiştir; vakanın kendini kusturma ve aşırı egzersiz davranışlarıyla kilo kaybını sağladığı tespit edildi. Literatür taramamızda ülkemizde daha önce anoreksiya nervoza ve esrar kötüye kullanım komorbiditesi olan vaka saptanmamıştır; bu açıdan vakanın ayrıntılı tartışılması önem arz etmektedir.

Anahtar sözcükler: Anoreksiya nervoza, esrar, madde kötüye kullanımı, yeme bozuklukları

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ABSTRACT:

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It is known that there is a high rate of comorbidity of alcohol-substance abuse and eating disorders. The compounds of cannabis, such as tetrahydrocannabinol, activate endogenous cannabinoid receptors (CB1 and CB2) in the brain. Stimulating the CB1 receptor is known to cause increased appetite and an antiemetic effect and because of these effects cannabinoids are used clinically. In this case report, a young girl diagnosed anorexia nervosa and using cannabis will be presented. The patient, a 17 year-old, had complaints of loss weight and had used cannabis for three years. It was found that, although cannabis caused increased appetite, she induced weight loss by self-induction of vomiting and excessive exercise. According to a scan of the literature in Turkey, such a case of using cannabis comorbid with anorexia nervosa has not previously been reported. In this respect, discussion of the case in detail is important.

Key words: Anorexia nervosa, cannabis, substance abuse, eating disorders

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INTRODUCTION

Eating disorders are defined as psychiatric disorders frequently observed in young women in particular, which develop with deterioration in eating behavior, and in formation of which biological, psychological and social factors, personality traits and trauma history are of substantial importance (1). Furthermore, comorbidity of eating disorders with other psychopathologies has been a subject of considerable interest in recent years. The most

common comorbid diseases are mood disorders, anxiety disorders, personality disorders and substance abuse disorders (2).

Eating disorders have a high level of comorbidity with alcohol/substance abuse disorders (abuse/addiction) (3). In spite of the fact that the majority of the studies in this field focus on alcohol use, there are also studies which have determined the comorbidity of illegal substance abuse and eating disorders. It has been determined in the studies conducted that the majority of alcohol/substance abuse was observed in women diagnosed with

bulimia nervosa (BN) and binge-eating/purging-type anorexia nervosa (AN) (4). Various studies show that lifelong substance abuse prevalence reached 55% in patients with bulimia nervosa and 23% in patients with anorexia nervosa and the most frequently used substances were alcohol and stimulants (4,5). In our country, there have not been adequate studies focusing on the comorbidity of substance abuse and eating disorders.

An anorexia nervosa case commencing with cannabis use is presented in this study. Since there has not hitherto been any cannabis use - anorexia nervosa comorbidity presented in our country according to our literature review, discussion of the case is of great importance.

CASE

DG was a 17 year-old student attending an open high school and living with her family. When she was brought for treatment of complaints such as not eating, weight loss and nervousity, she was found to have been using cannabis for 3 years.

Physical Examination

The general appearance of the patient showed that she demonstrated good self-care was weak looking, was 168 cm tall and weighed 44 kg (body-mass index (BMI)= 15.6). She was open and willing to communicate and cooperative. Her mood was euthymic; her speech was target-directed and the normal speed. Her attention and concentration were adequate; her reality testing skill was preserved; but her perception of her own body had deteriorated so that she considered her body to be normal. In spite of the fact that her BMI was 15.6, she could not consider herself thin. She had no delusions or hallucinations. Her content was related to her desire to quit substance use.

Life History

DG was born in Sakarya in 1994 In a normal delivery and her psychomotor development followed a normal course. She was the first-born

child of a family with three children. She has twin siblings, one girl and one boy, 3 years younger than herself. Her mother was a housewife; her father was a civil servant at the municipality. She stated that she had gone to a vocational high school during the first semester of the 1st grade of high school after elementary school, but she had been dismissed from school due to non-attendance and smoking; she had the enrolled in an open high school after this one-year loss. She also indicated that most of her friends had been from outside the school and generally were older than her after she had started to go to high school; she had spent time with these people mostly after school; and they had used illegal substances.

Medical History

The patient stated that the first time she had used cannabis was in the summer of 2008 and, although she had been smoking one cigarette every 2-3 days at first, she was smoking almost every day after 4 months. The patient stated that she continued to use cannabis since she had felt happy with nothing in mind and felt nervous when she abstained. As for other side effects, she also noted that she could not think straight, calculate, or read a book after using cannabis and that she had had a headache and dizziness after taking a significant amount. She had decided to quit since she had not been able to stand the severity of the side effects the last time she had used cannabis.

The weight of our patient was 55 kg when she had started to use cannabis (height: 158 cm, BMI: 22.08). The patient, the subject of our case, told us that she had vomited excessively in the first 3-4 months after she had started to lose weight. Furthermore, she had an increased appetite for sugary foods 10-15 minutes after she had used cannabis and she had consumed sugary foods because of being aware of this fact. She also noted that she walked or sometimes ran for hours as a compensatory behavior. The patient indicated that this hyperactivity was not present in the early stages of weight loss and it had emerged subsequently.

The patient, who had lost weight by making

herself vomit and exercising excessively in spite of the appetite-increasing effect of cannabis, was generally adherent to treatment during her stay in hospital. She was discharged for outpatient follow-up after reaching her target weight in our clinic.

DISCUSSION

The comorbidity ratio of alcohol/substance addiction and eating disorder is approximately 17% (5,6). Related studies show that the most frequently observed in either of the two eating disorders (AN and BN) is alcohol addiction; and alcohol-substance use prevalence has the highest ratio in patients diagnosed with BN. Moreover; substance use prevalence is higher in patients with binge-eating/purging-type AN in comparison with patients with restricted type AN (3).

The study conducted by Wiederman and Pryor (1995) demonstrates that the use ratio of amphetamines, barbiturates, cannabis, tranquilizers and cocaine is significantly higher in BN patients in comparison with AN patients (6). According to this study, the amphetamine use ratio is only 3% in AN patients while it is 17.8% in BN patients. Similarly, the cannabis use ratio is 24.7% in BN patients and 5.2% in AN patients. Moreover; this study demonstrated that, independent of diagnosis, calorie restriction is more associated with amphetamine use, binge-eating is more associated with tranquiliser use and purging is more associated with alcohol use, cocaine use and smoking (6). In the study conducted by Herzog et al. (2006) it was shown that the most commonly used substances were amphetamine and cocaine which have appetite-diminishing effects the when comorbidity of illegal substance use disorder and eating disorder was evaluated (3).

Cannabis, obtained from cannabis sativa, has a number of short-term and long-term side effects. It is the most commonly used illegal substance in all societies, primarily among young people. The active components of cannabis, tetrahydrocannabinol (THC), cannabidiol and cannabitol, activate endogenous cannabinoid receptors (CB1 and CB2 receptors) in the brain. The CB1 receptor is found

in neurons in the hypothalamic nucleus that controls energy balance and body weight and in neurons of the mesolimbic system which are considered to mediate the emergence of the desire for food. Stimulating CB1 leads to secretion of both dopamine in the nucleus accumbens and some appetite-increasing and appetite-suppressing mediators in the hypothalamus (7). Stimulating hunger and food intake are among known characteristics of the plant cannabis sativa. When cannabis is inhaled, it is observed that calorie intake increases as a result of the increased consumption of snacks, such as sugary foods, biscuits and cake and similar effects are reported also for THC (7). THC, a medication used in USA as an appetite stimulant, is recommended for use in treating weight loss and appetite loss in patients with anorexia nervosa and AIDS (7,8). Another therapeutic feature of the cannabinoids is that they can prevent nausea and vomiting. This antiemetic effect is predominantly mediated through the CB1 receptor. THC and nabilone, which is an analogue of THC, are found to be effective in prevention of nausea and vomiting caused by cancer medications and their clinical use is recommended (8,9).

When our patient applied to our clinic, she had been using cannabis for 3 years. Cannabis use in our case was determined to be a comorbid condition with anorexia nervosa. Our patient stated that she had vomited excessively in the early months when her weight loss started and that hyperactivity had commenced subsequently. This kind of weight loss occurred in our case in spite of the known effects (appetite-increasing, and antiemetic) of cannabis use on eating.

A study conducted in young people has shown that cannabis use is associated with binge-eating rather than staying hungry, using diet products or purging(10). In another study, consistent with the aforementioned study, it was suggested that although cannabis use among female students is less, it is significantly associated with inappropriate compensatory behaviors (11).

While comorbidity of cannabis use and binge-eating-type or compensatory-type eating disorder is determined as an isolated condition in the

previously mentioned studies, our case had both of these two indications. Our patient met the features of binge-eating/compensatory AN with an increase in sugary food consumption caused by increased appetite (in parallel with literature knowledge) after cannabis use and subsequent hours of walking for exercise. In a study by Maner et al. (2004) in Turkey, that investigated eating disorders in women addicted to alcohol and any substance other than alcohol, it was determined

that bulimia nervosa and binge-eating-type eating disorder were observed in patients with alcohol-substance abuse, while AN was not observed in any of the groups.

Since cannabis use and anorexia comorbidity is a rare condition, considering the appetite-increasing and nausea-relieving effects of cannabis, it is highly likely to be ignored. Therefore, our study draws attention to the fact that anorectic patients should be questioned about cannabis use.

References:

1. Jacobi C, Morns L, Zwaan M. Risk factors, etiology and comorbidity: In Brewerton TD (editor). *Clinical Handbook of Eating Disorders*. South Carolina, USA: Marcel Dekker, 2004, 117-231.
2. Hantas Y, Maner F, Erkiran M, Turan F, Gokalp P. Characteristics of eating behavior and eating disorders in women with alcohol and substance abuse disorders. *Düşünen Adam* 2003;16(1):24-7. (Turkish)
3. Herzog DB, Franko DL, Dorer DJ, Keel PK, Jackson S, Manzo MP. Drug abuse in women with eating disorders. *Int J Eating Disord* 2006;39(5):364-8.
4. Holderness CC, Brooks-Gunn J, Warren MP. Co-morbidity of eating disorders and substance abuse review of the literature. *Int J Eat Disord* 1994;16(1):1-34.
5. Franko DL, Dorer DJ, Keel PK, Jackson S, Manzo MP, Herzog DB. Interactions Between Eating Disorders and Drug Abuse. *J Nerv Ment Dis* 2008;196(7):556-61.
6. Weideman MW, Pryor T. Substance use among women with eating disorders. *Int J Eat Disord* 1996;20(2):163-8.
7. Alphan ET, Yilmaz N. Effects of endocannabinoid system on energy metabolism and obesity. *Marmara Medical Journal* 2007;20(3):202-14. (Turkish)
8. DiMarzo V, Bifulco M, De Petrocellis L. The endocannabinoid system and its therapeutic exploitation. *Nat Rev Drug Discov* 2004;3(9):771-84.
9. Machado Rocha FC, Stefano SC, De Cassia Haiek R, Rosa Oliveira LMQ, Da Silveira DX. Therapeutic Use of Cannabis Sativa on Chemotherapy-Induced Nausea and Vomiting Among Cancer Patients: Systematic Review and Meta-Analysis. *Eur J Cancer Care* 2008;17(5):431-43.
10. Ross HE, Ivis F. Binge eating and substance use among male and female adolescents. *Int J Eat Disord* 1999;26(3):245-60.
11. Pisetsky EM, Chao YM, Dierker LC, May AM, Striegel-Moore RH. Disordered eating and substance use in high-school students: results from the Youth Risk Behavior Surveillance System. *Int J Eat Disord* 2008;41(5):464-70.
12. Maner F, Erkiran M, Hantas Y. Alcohol and non-alcohol substance abuse eating disorders in women: a controlled study. *Bağlılık Dergisi* 2004;5(1):12-5. (Turkish)