

Sleep-Related Eating Disorder: A Case Report of a Progressed Night Eating Syndrome

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Received: 30 Dec. 2011; Received in revised form: 14 Apr. 2012; Accepted: 8 May 2012

Abstract- Night eating syndrome is a common disorder in eating behaviors that occurs in close relation to the night time sleep cycle. Although eating disorders are common in society, night eating syndrome has been left neglected by health care professionals. In this report we present a case of eating disorder that exhibits some novel features of night eating syndrome. Our case was a progressed type of eating disorder which may increase awareness among physicians about sleep-related eating disorders.

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Acta Medica Iranica, 2012; 50(7): 522-524.

Keywords: NES; Night eating syndrome; Sleep eating syndrome

Introduction

Since the first description in 1951 (1), night eating syndrome (NES) has received its own diagnostic criteria in which the consumption of at least one third of the daily calories after the last daily meal should be during the episodes of awakening from nocturnal sleep and this event happens more than three times a week (2). Now, after many years of neglect to this common eating and behavioral disorder, attentions are again returned to find out the association between this misbehavior, obesity, and the related coincidences (3). It is not wondering if we express that this term of NES is unknown to many clinicians and those primary health care physicians who are in the close attachments with the patients who seek nutritional and behavioral consults for their metabolic and eating disorders (3,4). This is more interesting when the syndrome has been reported to be most prevalent among obese individuals and increases in rate with increases in body mass index (BMI) and other comorbidities (2).

Among these neglects, there seems to be confusing terms too which could be misunderstood by clinicians. In contrast to NES which is happening at a full alertness, sleep related (nocturnal) eating disorder (SRED) is

another term which refers to the similar wakeful eating but with diminished level of consciousness (5). These two are mostly ignored when the term "evening hyperphagia" shows up as most of the physicians are not aware of those two terms and refers all the other night time eating disorders to the binge eating which happens when the sun sets.

Our case, as the first reports of its own, adds another confusing term to the aforementioned eating disorders and that is the disorder of eating behaviors which is due to sleep not the timing of the day. Besides, comparison of this case to the extensive literatures on eating misbehaviors will definitely raise the knowledge of clinicians and may play an alarming role in this regard.

Case Report

A 22-years old man with morbid obesity was referred to the clinic of surgery in Dr Shariati hospital affiliated to Tehran University of Medical Sciences in Tehran. He expressed a history of obesity from childhood which has continued to increase in severity so far. He had no history of other medical conditions including diabetes mellitus (DM), heart disease, hypertension, cigarette smoking, or other medical disorders, hadn't gone under

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any surgery before, but had a very strong family history of obesity and type 2 DM in his paternity and a less susceptibility in his maternity. The mood although did not reveal absolute major depressive disorder, but seemed to be depressed in some level.

The case had an almost completely sedentary life with no interest to exercise but high demands to high carbohydrate and saturated fat regimen. He also had an eating disorder at nights with an onset from 6 years prior to the presentation to us which makes him get up within the 1st hour of his night time sleep, force him to seek for foods. This may repeat two or three times during each night but it happens every night. Recently (two years ago), the disorder has progressed to a level that he gets up during the day time sleep too and repeat the same behavior of eating as he does at nights. Interestingly, this manner of digestion initiates in the first hour of his sleep. No such a related familial history was seen among his relatives and psychological consultation was unremarkable too. It is of note that his sleep related disorders was not associated with sleep walking or other sleep disorders and just food intake could get him back to sleep.

In physical examination, his weight and height were 286.60 lbs. (130 kg) and 68.89 inch (175 cm), respectively. His blood pressure was 140/85 mmHg with a pulse rate of 88 beats/min, respiratory rate of 16 breath/ min, and an oral temperature of 37.4 °C.

Ordering for some of the routine laboratory tests, we referred him for a nutritional consult and metabolism check- up to see how a low calorie (1200 Kcal daily) diet can work for this patient.

The nutritional consultant recommended the patient to use high fiber nutrients, low calorie and low fat foods to serve each meal at its own time and trying to exercise regularly for a total of 150 minutes during the week; but it didn't recommend him any solution regarding his sleep related eating disorder, as it seems that the consultant was not familiar with the issue and has thought that this may be the same with evening hyperphagia which is observed among many individuals especially those who are overweight and obese.

After 1 month, the patient referred to our clinic again with a success in losing 10 kg (22 pound), but he was still complaining of such unintentional eating disorder. He thought that this may interfere with his success in losing weight.

We recommended him to get some high fiber contained fruits ready for nights or other times of sleeping and put them near the bed as a rule and use them as he gets up, and even eat some before going to

bed as a prophylaxis. We encourage the patient to follow the program and set another appointment to visit him in about 4 weeks later.

One month later (two month after his first presentation), when we visited the patient for the third time, he was still complaining of sleep eating disorder, but fortunately it had been reduced to a frequency of 3 times or less in a week rather than happening every day and night. He stated that his misbehavior would exacerbate when he leaves one of his meals and is strongly associated with stress of his life and it evidently depressed his mood. The patient was then missed for further follow-up.

Discussion

Despite its widespread among global populations, NES has been obviously neglected whether in approaching to diagnose it or the effort to treat it. As mentioned earlier, this may occur due to the lack of knowledge regarding NES and other sleep related eating disorders. Howell *et al.* reviewed the definitions, diagnostic approaches, and treatment options about eating misbehaviors that happens as a result of sleep disorders and clarified the differences between variable terms and the possible confusion which is probable to take place (5).

This misunderstanding could be due to the constant advancements in definitions and diagnostic criteria of these disorders which consecutively have occurred. With introduction of NES in 1955 (1), the definitions of sleep eating disorders have expanded from just binge eating between the last meal at night and the time of sleep to the recently defined awakening episodes of seeking food during night time sleep in an absolute or decreased level of alertness (6). However, our case even expanded this definition and omitted the profile of night time sleep from the lists of diagnostic criteria. Our patient indeed revealed its own criteria which would be the more severe form of NES which happened at any episodes of sleeping whether at nights or during day time.

The priority association between NES and obesity is not well defined; however, there are reports declaring that NES has not developed in many individuals until they have been obese. On the other hand, patients with normal weight may be dealing with NES too (5). But those normal weight NES sufferers has not thought of their disorders as a problematic issue (7) while the story is inverse among overweight and obese individuals (5,7). This shows that unlike the general conception, sleep related eating disorders is not confined to obesity and may be the unresolved complaint of many

individuals which definitely evokes more diagnostic approaches and subtle scientific attentions.

NES may be underlined by hypothalamus eating behavioral center and serotonin systems (7,8) as there have been remission and control of binge eating behaviors by approaching from that aspect (9). Although there is evidence regarding decreased severity of awakening episodes, amount of food ingestion and calorie intake, no well-established trial has concluded the efficacy of long term cure of NES so far. Our therapeutic approach was indeed originated from our previous studies on natural treatment for dysfunction of serotonin system which has been seen among NES and depressive sufferers (10). It is known that some fruits such as banana and apple contain serotonin precursors and might be used as prophylactic remedy to improve brain serotonin level (10).

Unfortunately we initially misdiagnosed the patient and thought his story was the same as binge eating which occurs in obese patients but with more severity. As a matter of fact, that was neither the evening hyperphagia nor the conventionally proposed NES; and this shows the expansion of neglect which there is among physicians and other related primary care clinicians especially in the developing countries. It is of much more importance when coinciding depression, mental disorders, obesity development or treatment resistance have been reported to be associated with such an abnormal pattern of eating at night time; either as an nocturnal wakeful hyperphagia or as an awakening episodes of nighttime eating with less alertness (5).

Although our case had some profiles in common with Sleep-Related Eating Disorder and NES and seems to need the similar therapeutic approach, its expansion from the diagnostic criteria remains an unsolved question beyond. Do we need to treat this patient with the same serotonin reuptake inhibitory agents?

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