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Case Report / Olgu Sunumu

A Little Known Topic Misophonia: Two Case Reports

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ABSTRACT

A little known topic misophonia: two case reports

Misophonia is defined as hate of sound. It is characterized with intense emotional reactions like anger, anxiety, or disgust to and avoidance behavior from special sounds such as mouth sounds while eating or chewing gum, nasal sounds like breathing, smelling or blowing or some other sounds done with fingers like playing with a pen, writing or drumming on the table, especially, made by other people. Misophonia has never been present in any of the psychiatric classification systems. Some authors suggest that misophonia should be regarded as a new mental disorder. There is limited information about misophonia. Only few cases of misophonia have been reported. The causes of misophonia, risk factors, the relationship between mental disorders and treatment of misophonia are not fully known. Misophonia is a recently described, poorly understood and neglected condition. Future studies will focus on investigating the epidemiology, phenomenology, neurophysiology, and treatment of the misophonia. Two cases of women who had complaints of misophonia are presented in this study. Principles of diagnosis and treatment in this kind of patients are discussed in our case report.

Keywords: Diagnosis, mental disorders, misophonia

ÖZ

Az bilinen bir konu misophonia: İki olgu sunumu

Misophonia sesten nefret etme olarak tanımlanır. Özellikle diğer insanlar tarafından yapılan ağız (yemek yerken çıkan sesler, çiklet çiğneme), burun sesleri (nefes alma, koklama, üfleme) ya da parmaklarla (kalemle oynama, yazı yazma, masaya vurma) gibi özel seslere yoğun duygusal reaksiyonlarla (örneğin öfke, kaygı, tiksinti) ve kaçınma davranışı ile karakterizedir. Mizofoni günümüzde psikiyatrik sınıflandırma sistemlerinden hiçbirinde yer almamıştır. Bazı yazarlar, mizofoninin yeni bir psikiyatrik bozukluk olarak görülmesi gerektiğini ileri sürmektedir. Mizofoni ile ilgili bilgiler sınırlıdır. Sadece birkaç mizofoni vakası bildirilmiştir. Mizofoni nedenleri, risk faktörleri, diğer ruhsal bozukluklarla ilişkisi ve tedavi yaklaşımları tam olarak bilinmemektedir. Yakın zamanda tanımlanan mizofoni, iyi anlaşılmayan ve ihmal edilen bir durumdur. Gelecekteki çalışmalar, mizofoninin epidemiyolojisi, fenomenolojisi, nörofizyolojisi ve tedavisinin araştırılması üzerine odaklanacaktır. Bu çalışmada mizofoni yakınmaları olan iki kadın olgu sunulmuştur. Olgu sunumumuzda bu tür hastalarda tanı ve tedavi ilkeleri tartışılmıştır.

Anahtar kelimeler: Tanı, ruhsal bozukluklar, mizofoni

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INTRODUCTION

Although it has been known for years, misophonia which is described as hate of sound, was first described by Jastreboff (1) in 2001 but, it has not been well recognized in the field of mental health up to now. Ordinary sounds such as nail cutting, tooth-brushing, eating, breathing, smelling, speaking, sneezing, stretching, walking, chewing gum, laughing, snoring, whistling, television sound or cough are the sounds which makes misophonia patients most uncomfortable or even angry (2,3). It has also been reported that some cases are affected by visual stimuli that can be noticed at a glance, such as foot and body movements, as well. Intense anxiety and avoidance behaviors may develop, and it may significantly affect functionality (4). The epidemiology, etiology, clinical presentation and treatment of misophonia are not fully known. It is thought to be common in the general population (5-7). In a study with a large sample of high school students found that misophonia symptoms were present in 20% of the sample (8).

It has been suggested that a neurological disease may take part in the etiology (9). Kumar et al. (10) emphasized the abnormal activation of the anterior insula in cases diagnosed with misophonia. In another

study, it was reported that in misophonic subjects the measurable skin response and increased autonomic responses (increased heart rate and blood pressure) to auditory stimuli were significant; misophonia symptoms increased with caffeine, but decreased with alcohol intake (4). The findings of skin conductivity responses obtained from this study provided an objective confirmation of subjective reports that specific sounds intensively evoked emotional and physical reactions. The facts that misophonia is specific for certain sounds, emerges with psychosocial factors, causes significant anxiety and avoidance, adversely affects quality of life, support its psychiatric aspect. However, misophonia has not attracted enough attention from clinicians up to the present day. In this study, 2 cases of women who have been followed up at our psychiatric outpatient clinic with misophonia complaints are presented.

CASE 1

Mrs. S is 29-year-old, married, mother of one child, working as a research associate, was born in a town of Giresun, and still lives in Trabzon with her spouse and child. We separately interviewed the spouse and the patient who admitted to our psychiatry outpatient clinic with the recommendation of the spouse.

She reported her complaints as; 'I get mad easily, I cannot control my anger, I am dispirited, cheerless, I do not enjoy life, I cannot even tolerate my child then I feel sorry, I am really afraid of harming my child, I do not want to go to work, my sleep is irregular, I have no appetite.'

Her spouse reported as 'she misunderstands what I say, she is too meticulous, huffy, prescriptive, very irritable, always nervous, recently her irritability and anger have increased, she is affected by a tiniest sound, for a long time she has refused my suggestion to admit to a physician.

Mrs. S, who has been reported to have a rigorous, prescriptive, and punctual personality since adolescence, has never admitted for any psychiatric treatment until now. But, the attention of her family was attracted when she did not want to go to work, she was dispirited, impatient to the slightest sound, she had forgetfulness, irritability, loss of appetite, weight loss, and has been crying for no reason, in the last one or two months. Mrs. S, arguing with her mother who lived with them for the care of her child, asked her mother to leave home ten days ago. Despite all the persuasive efforts of her husband, her mother left home. Mrs. S said that her mother used wrong methods in growing her child and that she could not accept it, indeed she had made mistakes in growing themselves as well.

After her mother left, Mrs. S had to do the housework, but had difficulty in catching up with. Mrs. S, expressed that her husband was not helping her and that they often argued on it. A week ago her child was naughty and crying loudly, she could not stand more; she yelled at her child and shoved her. Seeing that her child was so scared and closed her ears with both hands, Mrs. S had a great regret and quickly left home to find a quiet place. After walking in the next street for a while, Mrs. S was found crying by her husband in an empty field three hours later.

The interview with Mrs. S revealed that she has been irritated by some sounds since her childhood therefore, she mostly used headphones on her way to school or work. For the first time it all started at the age of 7, after a dinner when her father got mad and yelled at her; then the patient was affected by the sound of her father eating or drinking tea, and then the sound of dentures of her grandmother who was living with them. For this reason, later on she ate alone in her room. She was especially affected by someone chewing gum or slurping his/her mouth next to her, so she has not been able to attend mass dinner parties and that she could not have dinner with her husband and child for the last two years.

Mrs. S, loathed someone chewing gum, thus she could not get on public transportation, indeed, once when she was traveling on the Giresun-Trabzon highway, she got angry at a passenger chewing gum, argued and got off the shuttle, continued for a while on foot. The spouse mentioned that, Mrs. S, who shared the room with her colleagues at work, argued with them because of the sounds of chewing gum or drinking tea/coffee and she had to leave the room. In addition, since adolescence she has been occupied

with excessive diligence and cleanliness, she could not use the sink and the toilet used by her grandmother, got crazy when her room stuff were moved, for this reason she could not stay at the hostel at college, she did not want to visit her husband's parents because 'they were not so clean', she could not eat the food that her mother-in-law cooked.

Medical and Family History: She was born as the second child of three children at a hospital via normal delivery. There was no problem in growth and development. Her mother is 61 year old, a retired teacher, alive, very fond of her children, has a quiet and calm personality. Mrs. S has a problematic relationship with her mother. Her father passed away due to a heart attack 12 years ago when he was 44. The father, who was a school principal, had an overly rigorous, prescriptive personality. Mrs. S's childhood and adolescence passed on two separate provinces due to her father's work. She was graduated from elementary, middle, and high schools in these provinces, and has been a successful student. Her 4 years older sister passed away 3 years ago on delivery. Mrs. S stated that she could not forget her mother's saying, "My most beloved is gone" during the funeral. The other sister is 25 years old, married, lives in Istanbul. She has a limited relation with her. Mrs. S has graduated from the university in Trabzon, and has met her spouse in this period. Mrs. S, who married five years ago, has a 3-year-old son. Mrs. S has not had a major health problem up to now. No history of psychiatric or neurological illnesses has been identified in the family.

Physical Examination and Laboratory: Non-contributory

Psychiatric Examination: Female patient, looks at her age, dressed in compliance with her socioeconomic level, has eye contact, self-care was moderate. Her speech was clear, fluent, understandable, goal-directed, with short sentences in normal volume. The affect was anxious, the mood was depressive. There was no pathological finding in the perception, intelligence level, memory, reality testing, and judgment. The associations were regular, her thoughts contained obsessive beliefs about cleaning, neatness, fear of harming others and symmetry, and thoughts about misophonia. Expressed behavior and self-esteem were decreased.

Psychometric Assessment: She scored 32 points on the Yale Brown Obsessive Compulsive Scale (Y-BOCS), especially on aggression, and 23 points on the Hamilton Depression Rating Scale (HDRS). The Minnesota Multiplex Personality Inventory (MMPI), yielded results in which the individual presented characteristics of disrespect from the society, did not accept her problems, her ego was weak, she could have a perfectionist attitude and minor issues could be regrettable.

Upon psychiatric evaluation, the patient was diagnosed with major depressive disorder and obsessive-compulsive disorder (OCD) according to Diagnostic and Statistical Manual of Mental Disorders 5th edition (DSM-5), and misophonia which is not included in DSM-5. The patient was prescribed fluoxetine 20mg/day and the dose was gradually increased to 40mg/day. Simultaneously, she also received psychoeducation and cognitive behavioral therapy (CBT) for misophonia. The spouse was informed about the patient's condition and the treatment via family interviews. CBT process started with evaluation and case formulation, then proceeded with psychoeducation, which contained CBT model for OCD diagnosis, and the symptoms and signs of the patient were evaluated in this context. By applying cognitive restructuring techniques about its current practice, the patient was given a clear rationale of Exposure-Response Prevention (ERP) treatment. In the 4th month of treatment, her complaints about getting irritated from sounds resolved, her communication with her spouse was restored and she continued to work.

CASE 2

Mrs. C is 20 years old, single, university student, was born in Trabzon, lives with her family in Trabzon.

She applied to our psychiatric outpatient clinic accompanied by her mother, with complaints of being

dispirited, cheerless, inability to study, difficulty in focusing, nervousness, and extreme rigorousness. The first complaints started in the middle school years as rigorousness, intense concerns about health, and the worry that something bad would happen to the family. She wanted to sleep in the same bed, in the same room with her mother, she did not want to leave her mother. She was admitted to child and adolescent psychiatry outpatient clinic by her mother then, has used a drug–which she does not know by name–for a while regularly, and her complaints decreased. During her high school years, when she was preparing for the university entrance exam she felt intense anxiety about the examination and had the worry that she would not succeed.

Having graduated from the high school with a degree, Mrs. C was not able to enroll her desired school in the first attempt and had a great disappointment. For a while she did not leave home and did not meet with her friends. In the second exam she entered the next year she was able to enter her desired school with a good score. Mrs. C started her university life at the city where her family lived. She had compliance problems in the first year and was able to pass the class with makeup exams. The second year she had difficulty in following her classes, her scores dropped. She always said that she would not be successful in exams. The patient became introverted, cheerless, had sleep problems and obsessive thoughts. She admitted to a psychiatrist with her mother, was diagnosed with OCD, and was prescribed 20mg/day fluoxetine. The drug dose was regulated as 60mg/day in the follow-up.

There was no improvement in the complaints of the patient who used this treatment for about 1 year; she had increased appetite and weight gain. The patient who did not attend to school one semester and did not take the exams, failed in class that year. The patient constantly stated to her family that she would leave the school and did not talk to her friends who called her. The patient was admitted to a different center by her family, fluoxetine treatment was discontinued and clomipramine 100mg/day was prescribed. The patient who used the medicine regularly had some improvement in symptoms of excessive diligence and cleanliness obsessions, but not all complaints have resolved. Upon being persuaded by her family and friends, the patient returned to school again and passed her class. She spent summer vacation out of Trabzon with her family and gradually stopped her medication. She started the third year of school and the same complaints resumed when she started to study for the first exam.

During the interview of Mrs. C, she said she has been irritated by some sounds since adolescence and that this issue has increased greatly over the last three years and has had a negative impact on her life. Mrs. C was irritated especially by the sounds of someone chewing gum, mouth slurping, message tone of the phone, writing with a pencil, counting beads, playing with keychain. She also stated that "any irregular sound affects me, therefore I don't want to leave home".

Mrs. C stated that she has not eaten with the family for the last 2 years because her father slurped his mouth, and she has been eating alone in her bedroom before sleeping; at school, she could only use certain places for studying or for the toilet; since the study room which was quieter was closed that year she could not study at school; she could not go to the canteen or to the restaurant because she would be affected by the sound of her friends gum chewing; she always wore headphones not to hear the annoying sounds, she listened to the music from the headphones loudly. Sometimes she participated in classes with headphones on, so she could not listen to the lecturer, and even once the lecturer kicked her out of the classroom because of the headset.

Mrs. C has been taking public shuttles for transportation between the school and home; many times she had to get off the shuttle earlier because of the sounds of coins, keys, beads counting. On one occasion, while she was travelling in her father's car, her father picked up a chewing gum from the glove-box and started chewing. Having traveled with her father for a while, Mrs. C was affected by her father's gum chewing, and had to get off the car in tears. Then thinking that she made her dad upset, she blamed herself. In the interview with the mother, she stated that Mrs. C has been a different child, she has behaved differently from her

peers and her 4 year older sister, she has been very angry and nervous lately, she had damaged her personal stuff in her room twice and felt regret later.

Medical and Family History: The patient was born with normal delivery at a hospital as the second child of a family with two children. There was no problem in her growth and development. Since the elementary school years, she has had the habit of nail-biting that increased especially during the examination periods. Her mother is a 55-year-old, retired teacher, alive, rigorous, prescriptive, very fond of her children, with an elaborative and perfectionist personality. The mother has received psychiatric treatment for a while upon sudden death of the older daughter 5 years ago. Her father is 58 years old, alive, a retired teacher. He is a quiet, calm, easygoing person, has a distant relationship with Mrs. C. At home, the mother calls the tune. Mrs. C was graduated from elementary, middle, and high schools in the same city and had a successful education life. Mrs. C has a 4 years older sister who is a college graduate and had had a degree in university entrance exam. She has been working outside the province for the last two years. Mrs. C, got very upset upon leave of her sister, she stated that her sister has been privy to everything and suddenly she became very lonely. Mrs. C has not had any major health problems other than allergic asthma in childhood and appendectomy at 17 years of age.

Physical Examination and Laboratory: Non-contributory

Psychiatric Examination: Female patient, looks at her age, dressed in compliance with her socioeconomic level, has eye contact. Her speech was clear, fluent, comprehensible, goal-directed, with short sentences, and in a low volume. Affect was anxious, mood was mildly depressive. There was no pathological finding in the perception, intelligence level, memory, reality testing, and judgment. The associations were regular, thoughts contained obsessive beliefs about cleaning, organizing, and fear of harming others and thoughts about misophonia. Expressed behavior and self-esteem were decreased.

Psychometric evaluation: She scored 28 points on the Y-BOCS, especially on aggression and symmetry, and 8 points on the HDRS. The MMPI revealed results that the individual had a tendency to somatization, her problem-solving skills and ego power was weak, she might have a perfectionist attitude and might get upset for minor issues.

Upon the psychiatric evaluation, the patient was diagnosed with OCD according to DSM-5 and misophonia, which is not included in DSM-5. There were depressive signs and symptoms that did not meet DSM-5 diagnostic criteria. The patient was prescribed sertraline 50mg/day and the dose was gradually increased to 100mg/day. Concurrent CBT was started and the family was informed about the patient's condition and the treatment via family interviews. In the first therapy session, informing about the structure of therapy and the agenda, brief review of problems, determination of treatment goals, setting expectations, training of the patient about the illness and the cognitive model (psychoeducation), homework, summarization and feedback were emphasized.

In the first session the goals were determined with the patient as to reduce and eliminate the number of repetitive and avoidance thoughts and behaviors that interfere with daily activities. The patient was given homework to detail the treatment goals. Anything could be a trigger for our patient, and this could also occur during the therapy. The formulation was made based on the problems that arose during the session.

For our patient, any event (such as coin sound, position of the pen, the sound of pencil while writing, or sound of any other object that other people used, etc.) could serve as a trigger, then she had thoughts of aggression (opinion or image related with violence) or an accident of her beloved ones; and interpreted herself as responsible and sinful for these thoughts. At the 5th month of the therapy which contained CBT in addition to the psychopharmacologic treatment, the complaint of being irritated by sounds resolved and she was able to take shuttles without a headset on, her communication with her father was improved and she have been continuing to school.

DISCUSSION

Misophoniac reactions, which are defined as clinical manifestations different from tinnitus and hyperacusis, usually involve autonomic arousal and unpleasant emotional experiences, such as anxiety, as an overreaction to specific sounds (11,12). Despite the similar characteristics of misophonia and tinnitus–which is commonly present in differential diagnosis–, the clinical findings of misophonia are different. Misophonia symptoms are often triggered by human-generated sounds and situations, while individuals with tinnitus report difficulties with intrinsic, abstract sounds (12). Misophonia symptoms arise specifically in case of certain sounds. In studies conducted up to now, the subjects reported that the sounds they were irritated were of human origin (like from close family members) (2,4,7). In our case report, the irritating sounds are human generated and caused by close family members, as well. Studies have also noted that subjects are not affected by sounds generated by themselves (such as chewing gum) or by animal or baby sounds (13,14). Although case reports/series and more recently systematic studies on misophonia have been published, there is a need for large sampled studies in order to understand epidemiology, clinical presentation, genetic transmission, and pathophysiology of misophonia.

The first largest study (42 cases) performed up to now stated that misophonia started as a primary disorder, 52% of the cases were male, the mean onset age was 13 years, and the diagnosis was made in the fourth decade of life. In that study, researchers developed and used the Amsterdam Misophonia Scale, a six-item self-report questionnaire, to assess the nature and severity of the symptoms of misophonia (7). In our study, in both of our cases the fact that symptoms of misophonia initiated at adolescence and before the symptoms of OCD and the diagnosis was made at later ages, is consistent with the results of that study. The fact that the subjects in the case reports of misophonia are women (similar to our study) (8,9,15,16) suggests that misophonia is seen more frequently in women. However, the gender distribution in misophonia is not fully known. Relationships and co-morbidity between misophonia and other mental disorders have not been fully elucidated yet. A study mentioning the relationship between misophonia and eating disorders reported that misophonia symptoms of three subjects with eating disorders had started before the symptoms of eating disorders and misophonia did not resolve even when the symptoms of eating disorders improved (17). It is noteworthy that in addition to the fact that the subjects were anorexia nervosa-restrictive type, as in our study the symptoms of misophonia started at adolescence and most problematic sounds were those made by family members. A study investigating the relationship between misophonia and OCD, anxiety and depressive symptoms, reported strong associations and also emphasized the relationship between misophonia and anger outbursts. Misophonia was commented as a discharge of pent-up anger (8).

Schröder et al. (7) mentioned that in misophonia cases the presence of OCD is 2.4% whereas obsessive-compulsive personality disorder (OCPD) is 52% and suggested that OCPD may be a predisposing factor for misophonia. Because, OCPD cases with solid moral features have difficulty coping with rude eating sounds, which can lead to avoidance behavior. In addition, the presence of OCPD symptoms may also lead to impulsive violent behaviors. From a phenomenological point of view, to focus on a certain sound, to be constantly busy with it and the impulse to perform an aggressive action can be defined as an obsession. The fact that both of the subjects in our study had similar personality traits and co-morbid OCD, is consistent with these conclusions. Misophonia symptoms may cause nervousness, marked anxiety, disgust, anger, hatred, physical violence, loss of control, avoidance behavior, or even suicidal thoughts (1,2). In our case study, similar behaviors such as anger, aggressive behaviors, avoidance from crowded places, inability to bear up long bus travels, and using headphones to avoid sounds, were observed due to misophonia. Misophonia is part of the syndrome of general hyper-reactivity to sensory stimuli. Misophonia can sometimes start with visual stimuli and visual stimuli

are perceived as auditory stimuli (misokinesia). Synesthesia (combined sense), can lead to seeing sounds, hearing images, and sometimes auditory stimuli causes tactile perception (7).

The investigation of the neurobiological bases of misophonia is still in its infancy and there are still a number of unanswered questions about the clinical characterization of this condition. The onset time of misophonia appears to largely depend on life conditions and the extent of exposure to triggering sounds. It is also unclear which factors contribute to individual differences in response severity. Both internal and external factors, including family relationships and typically exposure to visual stimuli associated with sound (eg, eating habits of someone), play a role in determining inter-individual variability in clinical presentation and may reflect heterogeneous pathophysiological characteristics (2). The relationship of misophonia with trauma and genetic transmission is not fully known. Rouw and Erfanian (18) found in their study of 300 patients diagnosed with misophonia that symptoms started in the childhood, misophonia was present in the relatives of the two thirds of the cases, posttraumatic stress disorder was the most common co-morbid psychiatric disorder, and that there was a relationship between the presence of trauma and misophonia symptom severity. The findings in the studies that misophonia has a chronic course and its relationship with family problems are striking (2,4,5,19). It is remarkable that in both cases in our study the symptoms of misophonia had a chronic behavior and they had similar family characteristics. In the studies so far, researchers have suggested that misophonia has a different clinical presentation than other psychiatric disorders and should be considered as a unique diagnosis (2,3,6). Therefore, Schröder et al. (7) have proposed the following criteria for the diagnosis of misophonia: a) The subject should not have tinnitus, b) The subjects are aware that their response is abnormal, extreme c) It causes significant anxiety, panic, anger, hatred, disgust and aggressive behavior d) avoidance behavior e) affects family social and professional life. In our study, we can say that both of our cases meet these diagnostic criteria and can be considered as primary misophonia. However, our knowledge is still not sufficient to consider misophonia within obsessive-compulsive and related disorders or impulse control disorders or as a standalone diagnosis within neuropsychiatric disorders. The knowledge on the treatment of misophonia is also limited. It has been pointed out that coping strategies with CBT, exposure and response prevention, cognitive restructuring, awareness and acceptance based therapy methods may have positive results in the treatment (20-24). In our study, we tried to manage stimuli and impulse control of cases with CBT. The knowledge about psychopharmacological treatment is not available. In our case study, selective serotonin reuptake inhibitors (SSRIs) were preferred in the treatment of the cases. Another remarkable issue is the doses of antidepressant were the same as doses used in OCD treatment. To better understand Medical treatment of misophonia, this issue should be supplemented with placebo-controlled large-sample studies.

In conclusion; it is necessary to investigate the causes, clinical presentation, course, and treatment approaches of misophonia, which can lead to significant individual and social disruption. In this way it will be better understood whether misophonia is a physiological condition, a neuropsychiatric disorder, a psychological symptom or a primary psychiatric disorder. We think that our study is important in terms of initiating awareness and increasing the sensitivity of clinicians about misophonia.

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Follow up of the case	C.H.
Literature review	C.H.
Manuscript writing	C.H.
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