Frontiers in Dentistry

Concurrent Occurrence of Obsessive-Compulsive Disorder and Myofascial Pain Dysfunction Syndrome: A Case Series

Sara Pourshahidi[1], Hooman Ebrahimi[2], Younes Ghoreyshi[2], Nafiseh Sheykhbahaei[1]*

1. Oral and Maxillofacial Medicine Department, School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran
2. Private practice

Article Info

Article type:
Case Report

Article History:
Received: 01 Apr 2024
Accepted: 01 Oct 2024
Published: 15 Apr 2025

**** Corresponding author:***
Oral and Maxillofacial Medicine Department, School of Dentistry, Tehran University of Medical Sciences, Tehran, Iran

Email: dsheykhbahaei@gmail.com

ABSTRACT

Objectives: Myofascial pain dysfunction syndrome (MPDS) is a musculoskeletal disorder with a multifactorial etiology. Some investigations suggest psychological disorders as a major risk factor for MPDS. This study is the first case series to report patients with obsessive-compulsive disorder (OCD) and MPDS comorbidity.

Case presentation: Sixteen patients suffering from both MPDS and OCD with the chief complaint of pain or limitation in jaw opening were evaluated. The patients were between 18 to 55 years, the majority were females, the masseter muscle was the most commonly involved muscle (40%), and some of the patients had a history or sign of bruxism.

Conclusion: OCD symptoms should be considered in MPDS patients. Bruxism due to psychological disorders can be the cause of MPDS. The findings of this case series study should be verified in clinical studies to assess the relationship between MPDS, OCD, and parafunctional habits.

Keywords: Obsessive-Compulsive Disorder; Myofascial Pain Syndromes; Temporomandibular Joint Dysfunction Syndrome; Bruxism; Case Reports

➢ **Cite this article as:** Pourshahidi S, Ebrahimi H, Ghoreyshi Y, Sheykhbahaei N Concurrent Occurrence of Obsessive-Compulsive Disorder and Myofascial Pain Dysfunction Syndrome: A Case Series. *Front Dent*. 2025:22:15. http://doi.org/10.18502/fid.v22i15.18471

INTRODUCTION

Myofascial pain dysfunction syndrome (MPDS) is one of the most common subtypes of temporomandibular disorders (TMDs) with a controversial etiology. It is classified as a musculoskeletal syndrome that can be acute or chronic, and localized or generalized. Active myofascial trigger points significantly contribute to MPDS. The trigger points are the spots in muscles that are hyperirritable and are mostly related to palpable nodules in the muscle fibers. Stimulating these nodules leads to pain accompanied by a visible local twitch response [1]. Patients may complain of headache or earache, asymmetry of the face due to hypertrophy of the masticatory muscles, or tooth wear. If the pain does not subside and becomes chronic, it results in loss of adaptive characteristics and creates significant emotional distress and other impairments [1].

Many psychiatric disorders affect oral structures, but remain unrecognized due to the uncommon and limited presenting signs and symptoms. A higher rate of gingivitis, periodontitis, and decayed, missed, and filled teeth has been reported in patients suffering from depression, psychosis, bipolarity, dementia, and other mental disorders [2]. On the other hand, patients with oral diseases such as aphthous ulcers, burning

mouth syndrome, oral lichen planus, and squamous cell carcinoma may encounter a higher rate of psychiatric disorders such as anxiety and depression [3, 4].

Thus, clinicians should have a good knowledge to deal with these conditions. Obsessive-compulsive disorder (OCD) is a psychiatric disorder characterized by compulsions (physical or mental rituals) and obsessions (intrusive thoughts). Compulsivity is a key symptom in OCD, which may be accompanied by other symptoms such as anxiety and depression [5]. Due to the diversity of OCD manifestations, the diagnosis is made with a delay of approximately 11 years. Primary care physicians can play an important role in early detection of OCD given that they become more familiar with its symptoms. Standard questionnaires such as the Diagnostic and Statistical Manual of Mental Disorders, 5th edition can be a great help for psychosocial status assessment of patients [6].

Although several etiologic factors have been proposed for MPDS, its etiology has not been fully understood. Psychological disorders, parafunctional habits such as bruxism, and TMDs have been suggested as the possible etiologic factors [7, 8]. OCD and psychological disorders are distinct entities, but they share several common features. Few studies have noted the simultaneous occurrence of OCD and parafunctional habits in different disorders [9-11]. To the best of the authors' knowledge, there is no study on the relationship of OCD and MPDS. Search of the literature by the authors yielded only one case report on the possibility of correlation of OCD with chronic facial pain after plastic surgery [12]. Thus, this case series study reports cases of OCD and MPDS comorbidity.

CASE PRESENTATION

The present case series reports 16 patients suffering from MPDS referring to the Oral and Maxillofacial Medicine Department of Tehran University of Medical Sciences (TUMS). The protocol of this study was approved by the Medical Ethics committee of TUMS (IR.TUMS.VCR.REC.1399.075). Informed consent was obtained from all patients who took part in this study. All patients had presented with a chief complaint of pain or limitation in jaw opening. Other causes of pain such as dental problems had been ruled out by clinical examinations and related radiographic imaging. During the clinical examination, the masticatory muscles were examined in static and dynamic positions according to the Research Diagnostic Criteria for Temporomandibular Disorders protocol [13]. The Laskin's diagnostic criteria [14] were applied to confirm the diagnosis of MPDS. Unilateral pain, muscle tenderness, clicking or popping of the temporomandibular joint (TMJ), and restricted motion are the cardinal signs according to the Laskin's criteria. There are also some other criteria for MPDS, such as normal radiographic feature and non-painful palpation of the TMJ via the external auditory channel [14]. The patients did not receive any treatment for MPDS for 6 months.

The patients' age, sex, other systemic disorders, pain level according to a 10-point visual analog scale (VAS) in the first session, sleep bruxism/awake clenching, and the involved muscles are presented in Table 1. The recommendations of the American Academy of Sleep Medicine were followed for the clinical diagnosis of parafunctional habits [15]. Accordingly, patients who were aware of their sleep bruxism and someone sleeping next to them reported hearing a grinding sound were diagnosed with sleep bruxism. To confirm this condition, at least one of the following signs had to be present as well: abnormal wear of the incisal edges or cusps, masticatory muscles' fatigue, pain in the morning, masseter muscle hypertrophy, and hyperactivity of the masticatory muscles without any medical or neurological disorder, medication intake, or drug addiction.

The diagnosis of awake bruxism (clenching) was made based on clinical observation. For clenching, the patients were asked to close their mouth at rest and retract their lips after a while, and their occlusion and tooth contacts were checked. Scalloping of the tongue (crenation), which indicates tongue pressure on the teeth was also evaluated [16].

Table 1. Description of reported patients suffering from MPDS in two groups: patients who already knew they had OCD (group A), and those who found out they had OCD after being referred to a psychiatrist (group B)

Group	N	Sex	Age (yrs)	Other systemic disease	SSRI intake	Pain level (VAS)	Sleep Bruxism	Awake Bruxism	Involved muscles
Group A	1	F	32	-		6	-	-	Mr, Ml, Tr
	2	F	41	Type 2 diabetes (controlled)	+	7.5	-	+	Tr, Mr
	3	F	18	-		10	-	+	Mr, Ml, LTr, MTr, Tr, Tl, LTl, MTl
	4	M	23	Seasonal allergic rhinitis	+	8	+	+	Mr, Tr
	5	F	21	-	+	10	+	+	Ml, Tl, MTl
	6	M	37	Gastritis	+	8.5	-	+	Mr, Ml, Tr, Tl
	7	M	39	Hypertension		5	-	+	Mr, Tr, LTr
Group B	1	F	35	Allergies		7	-	+	Mr, Tr, Ml, Tl
	2	F	23	-	+	10	+	+	MTr, LTr, Mr
	3	M	41	-		5	-	+	Mr, Ml
	4	F	55	Hypertension		6.5	-	-	Tl, Ml
	5	M	32	Hyperthyroidism (controlled)		7	+	+	LTl, MTl, Ml, Tl
	6	F	28	-		6.5	-	+	Mr, LTr
	7	F	38	Reflux		5.5	-	-	Mr, Tr
	8	M	37	-	+	8	+	+	MTl, Ml
	9	F	25	Mitral valve prolapse		5	-	+	Mr, Tr, MTr, LTr

MPDS: Myofascial pain dysfunction syndrome, OCD: Obsessive compulsive disorder, F: Female, M: Male, SSRIs: Selective serotonin reuptake inhibitors, LT: Lateral pterygoid, MT: Medial pterygoid, T: Temporalis, M: Masseter, r: Right, l: Left

Out of a total of 16 patients, 13 had symptoms of parafunctional habits, 5 had both sleep and awake bruxism, and 8 had only awake bruxism based on clinical findings. In order to control bruxism and muscle pain symptoms, self-care instructions including chewing on both sides, opening the mouth within the patient's pain threshold, avoiding eating hard food, controlling yawning, using moist heat and ice compresses, controlling parafunctional habits to leave a few millimeters of space between the occluding surfaces of the maxillary and mandibular teeth in the resting position, and relaxing the facial muscles were instructed. Also, depending on the severity of the patient's pain, other treatments such as pharmaceutical therapy (3 patients), occlusal splints (3 patients), low-level laser therapy (1 patient), and physiotherapy with transcutaneous electrical nerve stimulation (1 patient) were prescribed to control and minimize the TMD symptoms.

All MPDS patients were also suffering from OCD. Some of them were aware of this psychological disorder, and their OCD had already been diagnosed (group A, 7 patients); while, others were suspected of having OCD and referred by an oral medicine specialist to a psychiatrist for a definite diagnosis, because they answered “yes” to some of the initial screening questions for OCD and had some symptoms of emotional distress (group B, 9 patients) (Table 2) [6]. The specialist differentiated OCD from other psychiatric disorders according to the Diagnostic and Statistical Manual of Mental Disorders, 5th edition [6]. The diagnosis of OCD was finally

confirmed for all 9 referred patients, and they were observed and treated by a psychiatrist for their OCD.

Table 2. Initial screening questions for Obsessive compulsive disorder [6]

Do you wash or clean a lot?
Do you check things a lot?
Is there any thought that keeps bothering you that you would like to get rid of but cannot?
Do your daily activities take a long time to finish?
Are you concerned about putting things in a special order, or are you very upset by mess?
Do these problems trouble you?

After one month, the patients were followed-up to examine the intensity of their muscle pain. In 9 patients, the mean intensity of muscle pain had decreased to a VAS ≤ 3. But in the remaining 7 patients, the VAS score was still above 4 although they experienced a significant reduction in pain; thus, they were scheduled for adjuvant treatments. Also, all patients were requested to continue self-care.

DISCUSSION

The present study reported 16 MPDS patients concurrently suffering from OCD. Consistent with the present findings, Velly et al. [17] found a correlation between chronic masticatory myofascial pain and psychiatric factors such that of 83 patients, 55 had OCD. In another study, Zach and Andreasen [18] found that TMD patients had a higher frequency of OCD than others but the difference was not statistically significant.

In the present study, most of the patients were females between 20 to 40 years. A previous study on TMDs consistently reported a higher prevalence in females than males, with different ratios [19]. A polymorphism in the estrogen receptor gene may be involved in development of TMDs [20]. However, another study reported that males between 31-40 years experienced MPDS more than others [21].

Psychological stress results in a series of chemical events. It misbalances the homeostatic, metabolic, immunological, and/or endocrine systems, and alters the physiological function of the body. Schwartz [22] was the first to relate MPDS to stress as a predisposing factor. Stress may lead to parafunctional habits, which may cause dental attrition and abnormal positioning of the jaws, and can consequently affect the masticatory muscles leading to bruxism and MPDS-like symptoms. Psychological disorders such as anxiety and depression, and maladaptive behaviors such as clenching have been reported in MPDS patients [23]. Bruxism related to psychological disorders can be the cause of MPDS. Kaur et al. [21] found a higher prevalence of bruxism in psychiatric patients compared with normal controls.

Out of a total of 16 patients evaluated in the present study, 13 had symptoms of parafunctional habits, 5 had both sleep and awake bruxism, and 8 had only awake bruxism. This finding indicates the high incidence of bruxism in OCD patients. OCD patients experience high levels of stress and sometimes depression [6]. An adaptive reaction of the body against these stressful conditions can be in the form of nervous habits such as bruxism, which occurs mostly when a person is nervous or anxious. Clenching may result in blood flow disturbances and edema due to increased intra-muscular pressure, continuous activation, and additional tolerance by several low-threshold motor units in the muscle, and cause destruction of muscle fibers and connective tissue, leading to inflammation and ultimately muscle pain and tenderness [2,15]. Most of the patients reported in this study experienced partial recovery in the first month follow-up after self-care training and conservative treatments. Longer follow-ups are required to assess the effect of OCD treatmenton MPDS symptoms.

Medications prescribed for OCD and depressive disorder such as selective serotonin reuptake inhibitors (SSRIs) may cause bruxism as a side effect [24]. Dopaminergic neurons control the motor activity of mastication by inhibiting spontaneous movements. Serotonin inhibits this dopaminergic activity and thus, causes muscle contraction in bruxism [25]. In the present case series, 4 patients from group A were taking SSRIs; of which 2 had sleep-awake bruxism and 2 had awake bruxism. Also, in

group B, 2 patients were taking fluoxetine for depressive symptoms, and not for the treatment of OCD, which had not been prescribed by a psychiatrist, and both patients had sleep-awake bruxism. Thus, we consulted a psychiatrist to stop or reduce the dosage of SSRIs, if possible. Oulis et al. [26] reported a 40-year-old woman suffering from severe OCD who was managed by fluoxetine and escitalopram, and subsequently developed bruxism. They managed her bruxism by adding aripiprazole to her medications. Since SSRIs are the main category of drugs prescribed for treatment of OCD, in many cases it is not possible to stop or change the medication; therefore, dentists play an important role in controlling the medication side effects such as bruxism with methods such as self-care and occlusal splints. It is important for dentists to consider the OCD symptoms similar to other psychological disorders in MPDS patients. Stress management may have a positive therapeutic effect on TMDs and MPDS. Chronic painful conditions are multifactorial, and their management needs a multidisciplinary approach; thus, clinicians should be aware of any repeated findings in patients. Finding any related factor may help better control the disease. An accurate diagnosis of MPDS is highly important since it can even mimic dental problems, and misdiagnosis can lead to mismanagement.

CONCLUSION

This study reported patients with concurrent MPDS and OCD, most of whom had parafunctional habits of sleep and/or awake bruxism. The findings of this case series study should be verified in clinical studies to assess the relationship of MPDS, OCD, and parafunctional habits.

CONFLICT OF INTEREST STATEMENT

None declared.

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