

# Oral dysesthesia with a psychiatric perspective

## Psikiyatrik bakış açısı ile oral dizestezi

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### Abstract

Oral dysesthesia defines unusual sensation like inexplicable tingling sensation that could not be explained by organic causes, foreign body feeling, taste changes, oral burn, and pain in the oral area. Burning mouth syndrome, atypic odontalgia, persistent idiopathic facial pain are considered a variant of oral dysesthesia and they are characterized by pain in the orofacial area and abnormal sensation. Many of the oral dysesthesia and variants are idiopathic and the underlying pathogenesis is not yet clear. It has been shown that it can coexist with many psychiatric diseases, especially somatoform disorder. Despite the frequency of psychiatric comorbidity, patients with oral dysesthesia apply to non-psychiatric branches, especially dental clinics, and possible psychiatric diagnoses may be skipped. This can cause symptoms to become chronic. In this regard, patients with oral dysesthesia and their complaints also need to be handled psychiatricly.

**Key words:** oral dysesthesia, psychiatry, burning mouth syndrome, atypic odontalgia, persistent idiopathic facial pain

### Özet

Oral dizestezi, organik nedenlerle açıklanamayan karıncalanma, yabancı cisim hissi, tat değişiklikleri, ağrı ve yanma gibi oral bölgelerde hissedilen anormal duyumları tanımlar. Oral dizestezinin bir varyantı olarak kabul edilen yanan ağız sendromu, atipik odontalji ve persistan idiopatik yüz ağrısı orofasiyal bölgede ağrı hissi ve anormal duyumla karakterize sendromlardır. Oral dizestezinin ve varyantlarının birçoğu idiopatik olup altta yatan patogenezi henüz net değildir. Literatürde somatoform bozukluk başta olmak üzere birçok psikiyatrik hastalıkla birlikteliğinin olabileceği gösterilmiştir. Psikiyatrik eş tanının sıklığına rağmen oral dizestezi olan hastalar, başta diş klinikleri olmak üzere psikiyatri dışı branşlara başvurmakta olup olası psikiyatrik tanımlar atlanabilmekte ve semptomların kronikleşmesine neden olabilmektedir. Bu açıdan oral dizestezi yakınmaları olan hastaların psikiyatrik açıdan da ele alınması gerekli görünmektedir.

**Anahtar kelimeler:** oral dizestezi, psikiyatri, yanan ağız sendromu, atipik odontalji, persistanidiopatik yüz ağrısı

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## Introduction

Dysesthesia comes from the words 'dys' and 'esthesia' which means 'unordinary' and 'sensation' in Greek. Dysesthesia is defined as an unpleasant abnormal feeling. Dysesthesia can involve any unpleasant feelings in body tissue. Oral dysesthesia defines unusual sensation like inexplicable tingling sensation that could not be explained by organic causes, foreign body feeling, taste changes, oral burn, and pain in the oral area. Burning mouth syndrome (BMS), atypical odontalgia (AO), persistent idiopathic facial pain (PIFP) are considered a variant of oral dysesthesia and they are characterized by pain in the orofacial area and abnormal sensation. BMS is defined as an intraoral burning or dysesthetic sensation that recurs more than 2 hours a day for more than 3 months without clinically apparent causal lesions.<sup>1</sup> The incidence of BMS is estimated to be between 0.7-15%.<sup>2</sup> Although the mechanism underlying BMS is not yet known, central nervous system-induced neuropathy should be considered as the cause of pain. PIFP is defined as persistent facial and / or mouth pain that recurs more than 2 hours daily for more than 3 months.<sup>1</sup> AO affects women over the age of 40, and it can be seen in 3-6% of patients receiving root canal treatment.<sup>3</sup> The mechanism of this disease is not yet known like BMS. From a psychiatric perspective, the primary psychiatric diagnosis for both clinical conditions is somatic symptom disorder with predominant pain. These clinical conditions are idiopathic and tend to be resistant to treatment. Even worse still is the presence of permanent pain; it may be associated with psychiatric symptoms such as depression and anxiety.<sup>3,4</sup>

## Pathogenesis

Nerve injuries and some neurological disease have been presented with the dysesthesia. Oral dysesthesia and its variants seem like idiopathic but underlying pathogenesis is not clear yet. It has been suggested that neuroinflammation may play a specific role in the pathogenesis of chronic pain around the orofacial region.<sup>3,5,6</sup> Neuroinflammation occurs as a result of plastic changes on the peripheral and central nervous

systems of neuronal-glia interactions mediated by proinflammatory cytokines and chemokines. It has been suggested that this phenomenon of neuroinflammation may be the mechanism underlying the development and persistence of chronic pain.<sup>7</sup>

Several studies have evaluated proinflammatory and anti-inflammatory cytokine levels in the saliva and blood of patients with BMS.<sup>8-12</sup> These studies found contradictory results about neuroinflammatory mediator levels in saliva. The number of studies reporting the relationship between plasma cytokine levels and BMS is very low. Two studies have suggested that there is a relationship between interleukin (IL)-1 $\beta$  polymorphisms and the pathogenesis of BMS.<sup>13,14</sup>

Chemokines contribute to chronic pain processing.<sup>15</sup> However, few studies have examined the role of chemokines in chronic orofacial pain. Two studies evaluated IL-8 levels in saliva and plasma of patients with BMS.<sup>12,16</sup> Only one study reported changes in levels of molecules associated with treatment-induced neuroinflammation.<sup>17</sup> In a study, saliva IL-2 and IL-6 levels were found to be significantly higher in BMS patients than healthy controls.<sup>11</sup> On the other hand, in another study, no significant differences in saliva IL-6 and TNF- $\alpha$  levels were reported in BMS patients.<sup>8</sup>

Pekiner et al.<sup>10</sup> measured serum IL-2, IL-4, IL-6, IL-10, TNF- $\alpha$  and IFN levels in BMS patients and observed a decrease in IL-2 and TNF- $\alpha$  levels in these patients. Chen et al.<sup>9</sup> found that serum IL-6 levels decreased in BMS patients and were negatively correlated with the magnitude of pain.

In another study, it was shown that IL-8 plasma levels were higher in BMS patients compared to the controls, and IL-8 levels increased compared to the intensity of pain and depression.<sup>16</sup> Two genomic studies indicate that IL-1 $\beta$  polymorphisms are associated with BMS pathology.<sup>13,14</sup> There are also studies in the literature reporting changes at the levels of the molecules related to neuroinflammation in patients with chronic orofacial pain.<sup>17</sup>

These data indicate that neuroinflammation plays a

role in the pathogenesis of chronic orofacial pain.

### Related psychiatric diseases

To date, many studies have been conducted investigating the relationships between orofacial pain, discomfort and psychological factors. In a study based on 18-year follow-up of 1202 patients presenting with orofacial pain and discomfort, psychiatric disorders were detected as somatoform disorder in 77.7% (n=934), depressive disorder in 6.3% (n=76), and anxiety disorder in 3.5%. (n=42).<sup>18</sup>

Pain symptoms were found to be predominant in 56.4% (n=678) of patients with somatoform disorders. Also in this study, pain-dominated somatoform disease was detected as psychiatric co-diagnosis in 84.9% of BMS patients and 89.1% of PIFP patients. Among the psychiatric comorbid diagnoses in these patients, somatic symptoms and related disorders were the second most common subtype in the diagnosis category, which constituted 16.3% of patients as conversion disorder. While 74 of 76 patients with depressive disorder had a major depressive disorder, others were diagnosed as unspecified depressive disorder. Forty-two patients with anxiety disorders detected in this study; specific phobia was found in 19, panic disorder in 11, social anxiety disorder in 5, and an unspecified anxiety disorder in 1. In 6 patients, other anxiety disorders were diagnosed. Thirty-eight patients diagnosed with schizophrenia spectrum and other psychotic disorders; 24 had schizophrenia, 9 had delusional disorder, 4 had unspecified schizophrenia spectrum disorder and other psychotic disorder, 1 had schizophreniform disorder.<sup>18</sup>

In this study, it was also reported that the female/male ratio of patients who are considered to be diagnosed with BMS is high in favor of women. Among women in the menopause period, those with oral symptoms were found to have higher follicle-stimulating hormone levels and lower estradiol levels, which were interpreted as hormonal changes in the menopause period may contribute to the emergence of BMS.<sup>18</sup> In another study, it was shown that there is a relationship between oral discomfort and psychological symptoms in

menopausal women.<sup>19</sup> In another pilot study conducted on only 14 patients, approximately half of BMS patients suffered from some kind of psychiatric illness.<sup>20</sup> In another study, it was reported that 46.7% of BMS patients developed additional depressive disorder.<sup>21</sup>

In the study conducted on the Japanese population between 2002 and 2003, the rates of major depressive disorder in individuals with a history of orofacial pain and discomfort were found to be 2.2% per year and 6.1% for lifetime prevalence. The study revealed that a person with any history of orofacial pain and discomfort in the general population has a high risk of developing major depressive disorder.<sup>22</sup>

A study reported in 2004 concluded that significant psychiatric disorders are common in patients suffering from pain in the temporomandibular joint. In this study, it was also revealed that psychosocial variables were associated with symptom severity and psychosocial dysfunction indicators were associated with worse treatment results.<sup>23</sup>

In another study, chronic anxiety was frequently associated with dysesthesia, and it was stated that patients with chronic anxiety may experience numbness or tingling in their faces.<sup>20</sup> In another study, there is also an abnormal tightening or pulling sensation in the oral areas without organic basis; also associated with autistic features and oral dysesthesia as a result of a specific abnormality in sensory processing in autism spectrum disorder has been suggested.<sup>24</sup>

### Treatment

There have been studies reporting that antidepressants are effective on chronic pain around the orofacial region.<sup>17,25</sup> However, it was also noted that this effect was not related to the plasma concentration of the drug.<sup>26</sup>

A study examining the effectiveness of duloxetine has found positive effects.<sup>27</sup> Indeed, in a study, GM-BOS plasma levels in BMS/AO patients were higher than controls and decreased after duloxetine treatment.<sup>27</sup>

In BMS/AO patients, plasma levels of eotaxin, MCP-1 and VEGF have been shown to significantly decrease

after duloxetine treatment.<sup>27</sup> Although eotaxin levels differ between reports on different diseases<sup>28,29</sup> some reports suggest that eotaxin levels increase in individuals with neuropathic pain.<sup>30,31</sup>

In addition, various studies have identified pain relieving effects of milnacipran<sup>32,33</sup> and duloxetine<sup>25,26</sup> in BMS patients and their relationship with plasma levels in patients with BMS and persistent idiopathic facial pain.

## Conclusion

As a result, the pathogenesis of oral dysesthesia is not clearly understood and it can be associated with many psychiatric diseases, especially the somatoform disease and patients with oral dysesthesia may become susceptible to psychiatric diseases as a result of chronic pain. Patients with complaints of pain and discomfort in orofacial region apply to other branches, especially dental clinics, and possible psychiatric diagnoses can be skipped. Considering all these data, patients with oral dysesthesia complaints also need to be handled psychiatrically.

In chronic cases, a detailed psychiatric evaluation of the patient should be made and it should be kept in mind that their present complaints may be the result of a psychiatric illness, especially somatoform disorder. Treatment protocols for psychiatric diagnosis should be implemented in the presence of psychiatric comorbidity.

Duloxetine treatment can be tried in patients with idiopathic and chronic oral dysesthesia if the symptoms persist despite the treatment. However, in patients whose complaints do not decrease despite using duloxetine treatment for sufficient time and at an appropriate dose, the treatment should be reviewed and new treatment strategies should be considered. New studies on pathophysiology will contribute to the development of new treatment strategies.

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