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Psychiatric comorbidities in patients with Atypical Odontalgia

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ABSTRACT

Objective: Atypical Odontalgia (AO) is a condition characterized by tooth pain with no apparent cause. Although psychiatric comorbidity seems to be very common, it has rarely been studied. To clarify the influence of psychiatric comorbidity on the clinical features in patients with AO, we retrospectively evaluated their examination records.

Methods: Clinical features and psychiatric diagnoses of 383 patients with AO were investigated by reviewing patients' medical records and referral letters. Psychiatric diagnoses were categorized according to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). We also analyzed visual analogue scale (VAS), self-rating depression scale (SDS), and the short-form McGill pain questionnaire (SF-MPQ) scores.

Results: Of the 383 patients with AO, 177 (46.2%) had comorbid psychiatric disorders. The most common were depressive disorders (15.4%) and anxiety disorders (10.1%). Serious psychotic disorders such as bipolar disorder (3.0%) and schizophrenia (1.8%) were rare. Dental trigger of AO was reported in 217 (56.7%) patients. There were no significant correlations between psychiatric comorbidities and most of the demographic features. Higher VAS and SDS scores, higher frequency of sleep disturbance, and higher ratings of "Fearful" and "Punishing-cruel" descriptors of the SF-MPQ were found in patients with psychiatric comorbidity.

Conclusions: About half of AO patients had comorbid psychiatric disorders. Dental procedures are not necessarily causative factors of AO. In AO patients with comorbid psychiatric disorders, pain might have a larger emotional component than a sensory one. VAS, SDS, and SF-MPQ scores might aid in the noticing of underlying comorbid psychiatric disorders in AO patients.

1. Introduction

Atypical Odontalgia (AO) is a condition characterized by tooth pain with no apparent cause and hypersensitivity to stimuli in radiographically normal teeth [1,2]. AO is classified as a subtype of atypical facial pain or persistent idiopathic facial pain (PIFP) [3]. Although similar diseases were reported over 200 years ago [4], AO now seems to be considered as a "psychogenic" disorder, because dental procedures often worsen rather than ameliorate symptoms [1,5]. The efficacy of tricyclic antidepressants on AO symptoms was reported approximately 40–50 years ago, and depression was thus regarded as a causative factor [6,7]. Besides depression, latent psychological disturbances (emotional stress, anxiety or hypochondriac) and somatization have been implicated in orofacial pain, but the detailed etiological mechanisms are still unclear [8,9]. Several pain studies have proposed a new explanation for AO, describing it as a neuropathic syndrome similar to PIFP, which has now become mainstream [1,10,11].

While AO pathophysiology mechanisms are indeed likely to include neuropathic components, the high prevalence of psychiatric comorbidities often makes diagnosis confusing. At the same time, psychiatric comorbidities in patients with AO greatly influence the results of various perceptual examinations and treatments. This represents a significant barrier to the establishment of AO criteria and elucidation of its pathophysiology [8]. Understanding the associated psychological

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factors of AO may thus improve treatment approaches. For example, anti-depressants cannot be prescribed for pain control without psychiatric assessment, especially in bipolar disorder or schizophrenia patients. Nevertheless, there is surprisingly little evidence on the psychiatric comorbidities in patients with AO.

In our daily practice, we receive many AO patients who had psychiatric comorbidities and require psychosomatic pain management. Considering this, combined with the lack of knowledge on psychiatric comorbidities in patients with AO, we performed a retrospective study in our clinic to examine the psychiatric comorbidities of AO and its influences on the clinical manifestations of AO.

2. Methods

2.1. Subjects

We retrospectively analyzed data from 383 patients with localized pain of teeth and/or gingiva and who had been diagnosed with AO according to the PIFP criteria in the International Classification of Headache Disorders (ICHD)-3 beta. The definitive diagnosis was confirmed by the Chief Professor of our clinic. All patients had first been referred to the Psychosomatic Dentistry Clinic in Tokyo Medical and Dental University Hospital, Tokyo, Japan, between January 2013 and August 2016. Inclusion criteria for patients with AO were as follows: over 18 years old, tooth pain for more than six months, or persistent pain after tooth extraction with no abnormal findings of pathology in the clinical or radiographic examination [2,9,10,12,13]. Exclusion criteria were as follows: any topical or systemic causes for the pain, such as odontogenic pain, cluster headache and trigeminal neuralgia [13].

2.2. Ethics approval

All patients agreed to participate in this study and signed a written informed consent. The study protocol was approved by the Ethical Committee of Tokyo Medical and Dental University (D2013–005).

2.3. Clinical characteristics

Clinical characteristics were obtained from the patients' medical charts, including demographic information (sex, age, duration of illness), history of headache, onset event (especially dental treatment), and other comorbid oral psychosomatic disorders. The examiners in this study were all experienced trained clinicians and researchers in psychosomatic dentistry.

2.4. Comorbid psychiatric disorders

Comorbid psychiatric disorders were examined by reviewing referral letters from patients' psychiatrists. All the patients were required to submit referral forms if they had experienced any history of psychiatric disorders. None of the patients had been newly referred to a psychiatrist after confirmative diagnosis of AO. The psychiatric diagnoses in the referral forms were categorized according to The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) [14]. Specifically, patients presenting with any of a few mood/depressive disorders (e.g., major depressive disorder, dysthymic disorder) were categorized as having a “depressive disorders”, those with any of a few anxiety disorders (e.g., generalized anxiety disorder, panic disorder) were categorized as having an “anxiety disorders”, and those with any of a few bipolar disorders (e.g., bipolar I disorder, bipolar II disorder) were categorized as having a “bipolar and related disorders”. Instead of basing diagnoses on structured clinical interview results, we adopted the diagnosis given by the attending psychiatrist who had examined the patient because information that relied only on patient's memories may be lacking in accuracy.

2.5. Depression scale

Depression was clinically accessed using Zung's self-rating depression scale (SDS) [15]. This form contains 20 items (10 symptomatically negative items and 10 symptomatically positive items), each of which is scored from 0 to 4. Patients completed the SDS by themselves and their depressive state was reviewed at the initial examination. Zung's SDS scores are interpreted as follows: < 50, within normal range; 50–59, a tendency for minimal to mild depression; 60–69, a tendency for moderate to severe depression; > 70, a trend towards severe depression [16].

2.6. Sleep disturbance

We evaluated sleep disturbance using our semi-structured interview. Our questionnaire assessed the following: trouble falling asleep or staying asleep, frequently waking up at night several times, and waking up too early in the morning for at least two weeks. We also recorded the use of sleep medicine and patients' sleep history if available. In the present study, instead of recording the patients' sleep disorders in detail, we only focused on determining whether the patients experienced sleep disturbance.

2.7. Pain scale

The characteristics of pain were examined using the short-form McGill pain questionnaire (SF-MPQ) at the initial visit [17]. The SF-MPQ contains 15 descriptors (11 sensory and 4 affective). The 11 sensory descriptors are as follows: throbbing, shooting, stabbing, sharp, cramping, gnawing, hot-burning, aching, heavy, tender, and splitting. The 4 affective are as follows: tiring–exhausting, sickening, fearful, and punishing–cruel. These descriptors are rated on an intensity scale as follows: 0 = none, 1 = mild, 2 = moderate, or 3 = severe.

The SF-MPQ also included the visual analogue scale (VAS) and Present Pain Intensity (PPI) test. The severity of pain was evaluated with the VAS, on which 0 represents no pain and 100 represents the worst pain ever experienced, by asking patients to mark where on the VAS they considered their pain to be. The PPI score measures six degrees of pain intensity using a 1–5 intensity scale, whereby 0 = no pain, 1 = mild, 2 = discomforting, 3 = distressing, 4 = horrible, and 5 = excruciating. (Range: 0–5).

2.8. Pain regions

Pain regions were examined by reviewing patients' medical charts. The oral cavity was divided into eight regions in this study, and included the maxillary posterior tooth, maxillary anterior tooth, mandibular posterior tooth, and mandibular anterior tooth (right and left sides for all regions). When pain regions overlapped, we marked this as pain present in both regions. All eight regions were marked as pain regions in patients that complained of entire intraoral pain.

2.9. Statistical analysis

Data were analyzed using Mann-Whitney U tests and Chi-square tests using PASW for Windows version 17.0. (SPSS, Inc., Chicago, IL). Results are expressed as the mean ($\pm$ standard deviation, SD) or the number of patients (%). A p value of < 0.05 was considered as statistically significant.

3. Results

3.1. Clinical characteristics of patients with AO

In total, 383 patients with AO were recruited (325 female and 58 male; age range of 18 to 86 years, Table 1). The mean age of AO onset

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