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Persistent Depressive Disorder: the Clinical Approach of the Patient Associating Depression and Dental Pathology - Case Report and Clinical Considerations

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Abstract: *Growing research literature has documented an increased association between depression and dental problems. Patients with severe dental problems suffer from psychosocial consequences, distress and psychiatric problems.*
AIM: To emphasize the relationship between resistant depression and poor dental health.
METHOD: This case report demonstrates the association between resistant depression and poor dental health in a 46-year-old female patient. Scores on clinical assessment measures suggested clinically severe levels of anxiety, worry, stigmatization, depression, sleeping and eating disorders and decreased satisfaction in quality of life at the beginning of the intervention. The theoretical rationale and treatment implications are presented.
RESULTS: The scores on all these measures improved at the end of the dental interventions and no intense remaining depressive symptoms were reported afterward. Increased scores on life satisfaction and quality of life were documented as well. This case illustrates the potential benefit of dental treatment associating psychiatric treatment. A definitively positive association exists between poor dental health and depression. Once simultaneous treatment is initiated, there are chances for patients to have a positive evolution and social reinsertion.
CONCLUSION: The high occurrence of depression, anxiety and stress among patients with dental problems highlights the importance of providing support programs and implementing preventive measures to anticipate and help persons with this type of pathology, particularly those who are most susceptible to higher levels of these psychological conditions.

Keywords: *depression, anxiety, dental problems, stigmatization, serum serotonin.*

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1. Introduction

Both persistent depressive disorder and dental problems are topics of national and global interest, and nowadays there is a great openness of the population to the understanding and screening of these pathologies; the treatment is expensive and long lasting in both cases.

The current literature emphasizes the interdependence of oral health and psychological aspects in the patient's treatment and also place light upon the more important variables contributing to the various mental disorders that accompany dental problems such as temporomandibular disorders, periodontal disease, dental caries or pain having dental origin ([a]Lupu et al., 2016; [b]Lupu et al., 2016; [c]Lupu et al., 2016). Studies from literature suggest a close relationship between dental problems and depression, anxiety, different eating habits, personality traits or stress. Furthermore, anxiety-depressive disorders and somatization contribute to chronic dental problems because of the mental fear induced before arriving in a dental office. The relationship between depression, anxiety and dental problems is multidirectional. The current state of mentality is an effect, but also a cause of emergence, continuation or exacerbation of dental problems, which makes correct assessment difficult. Moreover, it is difficult to diagnose a patient with depression that has dental problems **(**Berger et al., 2015; Leary & Hoyle, 2013; Lupu et al., 2015)**.**

According to DSM V, persistent depressive disorder is defined as a chronic major depressive disorder and dysthymic disorder where are found the following criteria:

A. depressed mood for most of the day, for more days than not, as indicated by either subjective account or observation by others, for at least 2 years.

B. presence, while depressed, of two (or more) of the following: poor appetite or overeating, insomnia or hypersomnia, low energy or fatigue, low self-esteem, poor concentration or difficulty making decisions, feelings of hopelessness.

C. during the 2-year period of the disturbance, the individual has never been without the symptoms in the first two criteria for more than 2 months at a time.

D. criteria for a major depressive disorder exists continuously for 2 years.

E. There has never been a hypomanic episode or a manic episode, and criteria have never been met for cyclothymic disorder.

F. The psychical disorder is not better explained by a schizophrenic or schizoaffective disorder, delusional disorder or other psychotic disorders

G. The symptoms are not due to the physiological effects of a substance or another medical condition

H. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning (American Psychiatric Association, 2013).

Studies reported in the literature confirms that a high level of general anxiety indicates a higher risk of irregular dental care (Bernson et al., 2013). Furthermore, anxiety, depression and ADHD can result in poor oral hygiene, thereby having indirect, adverse effects on the periodontal health status of the affected individual (Alkan et al., 2015). Besides aesthetics, oral health plays an important role in many vital functions, such as speech and mastication. These are complementary elements of both psychological and physiological health. If they are lost, the personal, familial and social quality of life of the subject is adversely affected (Hugo et al., 2009). Also, in their study, Alkan revealed that individuals with high depression scores neglected their oral hygiene (Alkan et al., 2015).

Furthermore, not only depression has implications in oral health and vice versa. Studies confirm that there are a series of factors that influence the mental status of a patient (Damian et al., 2020; Galan, 2017; Huidu, 2020; Sandu & Nistor, 2020): chronic diseases such as end-stage renal disease, which has a big influence in the quality of life reported by patients (Cervino et al., 2019; Nițoi & Moroianu, 2020) and diabetes can also influence the mental status of patients (Moroianu, et al. 2020). In addition to, a biological marker is linked with some oral pathologies and could be taken into consideration as a screening factor: vitamin D. Moreover, for patients associating depression it could be taken into consideration the values of serum serotonin (Botelho et al., 2020; Saldanha, et al., 2009).

2. Case report

We present the case of a patient, T.G. age 42, female, who initially presented to the dental office for a dental pain at the temporal-mandibular level. Following the dental consultation, a pericoronary process (pericoronaritis) was detected with pain radiating in the auricular-temporal-mandibular area. The fact that it presents an increased anxiety and an associated dental pathology determined the inclusion in this study respecting the rights and confidentiality of the patient as well as her personal data. Following the application of the individual response questionnaire to the patient, the problems that were marked included the appetite, a

dissatisfaction with the physical appearance and poor quality of life because she felt inferior to others (retired because of her illness and due to poor appearance, the patient did not seem to speak correct and also appeared to be ridiculed by people around although she did not present difficulties of social integration). From a dental perspective, the patient's treatment consisted of washing the inflammatory area with an antiseptic solution, received treatment with nonsteroidal anti-inflammatory and oral gastric protector and was referred to psychiatric service and after stabilizing the psychiatric pathology to return to dental office for consultation and treatment.

At the psychiatric hospital where she was referred, the patient was hospitalized in an emergency sector because she had a sad mood, apathy, increased anxiety, hypersomnia, developed easy crying and decreased appetite due to both depressive mood and dental problems.

From the hereditary-collateral antecedents, we note that the patient's sister is affected by recurrent depressive disorder for 20 years, but successfully kept under therapeutic control, and her father developed at the age of 78, mixed anxiety-depression disorder without a specific cause.

The personal pathological antecedents are represented by an appendectomy in adolescence, psychiatric history since 2005 (multiple psychiatric diagnoses after the death of a patient in the nursing home for older people where she worked (before retirement due to illness activated as a nurse), history of chronic diseases (from the age of 15 she was diagnosed with congenital platyspondylya and she had practiced vertebroplasty and hypothyroidism since 2005), having no history of infectious diseases.

Living and working conditions: the patient has post-secondary education, at that time being a disability pensioner, married (fusion relationship) with her husband and has a 16-year-old daughter (who declared herself as transgender).

She does not declare any addiction and the treatments administered currently at home were the one with ibandronic acid 1500mg/3 month, levothyroxinum 25 μg/day, benzodiazepines (alprazolamum 0.5mg/day) and antidepressant (venlafaxinum 75mg/1day).

The history of the disease: a 42-year-old patient with multiple hospitalizations in psychiatry, living in the urban area, hospitalized for sad mood, apathy increased anxiety, hypersomnia, easy crying and eating disorders, symptoms that began about 16 years ago and augmented about a week before hospitalization due to difficulty of chewing, inability to eat and an apparent delusional ideation of stigma.

From a clinical and paraclinical viewpoint (usual hemoleukogram type blood tests, lipid profile, renal) there were no pathological changes.

At the examination of the mental state, the patient was observed with a sad mood, easy crying, anxious, visibly preoccupied with dental problems (pain and future treatments to be performed), street attire, maintained hygiene. Spontaneous narrative discourse focused on the feeling of inner "emptiness," severe anhedonia accompanied by hypersomnia both day and night, mild bradypsychia and bradylalia. At the time of the examination, she denies perceptual disorders/suicidal, hypersomnia, decreased appetite is also due to dental problems. Decreased useful yield (currently retired because of her orthopedic illness for about 8 years), but the insight of the disease present.

During the hospitalization, the previous treatment was suspended (the patient states that "I have not felt anything for months, to be 8–9 months, no improvement"). Clomipraminum 25mg treatment is given up to 3cp/day in progressive doses without side effects, benzodiazepine (alprazolam 0.50 mg 1+1+0cp/day), infusion treatment with vitamins, and no hospitalization was not required a treatment switch, the evolution being slowly favorable. The patient is discharged on request 4 days after admission for personal reasons.

Two weeks after being discharged from the hospital, she returned to the dentist to continue the dental treatments she had planned. Immediately after solving them, there is an improvement in nutrition, which could not be corrected by the previously established psychiatric treatment, stating that she feels happier and socially no longer feels stigmatized due to poor pronunciation of certain words.

After multiple psychiatric consultations performed monthly, within about 5 months, the patient notices an improvement in depressive symptoms, is hired as a nurse (position won through and admission exam), but does not feel completely satisfied, understood by the daughter, anhedonia persists, fact for which she decides to stop her medication. At a new consultation, she informs the psychiatrist that she is no longer taking the previously prescribed treatment and wants a change "I want to try to be well without medication, especially because I work." About 3 months after stopping the medication, she returns to the doctor, stationary in terms of evolution, treatment is instituted with duloxetinum 30mg, trazodonum 150mg, alprazolamum 0.5mg and modafilinum 100mg, aripiprzolum 5mg. With the doctor, it is decided to conduct in her own payment regime, serum serotonin, dosage of vitamin D and vitamin B12 before making any other changes regarding the medication and start the prescribed treatment. The

results of serum serotonin were 7.7 μg/L (minimum 80 μg/L), 1.25(OH) vitamin D 36.8pg/mL and vitamin B12 394pg/mL.

At 2 months after administration of the medication, serum serotonin increases to 34μg/L (the patient notices an improvement in mood, but requests an increase in duloxetine to 90mg/day) and after one month, serum serotonin reaches 56.2 μg/L, which indicates that the treatment is optimally administered, the dose is appropriate and the clinical outcome is favorable.

Evolution and prognosis: the symptoms remit in a proportion of 30%, being slowly favorable, which increases duloxetine to 90mg/day. The prognosis is easily reserved, woman, socio-familial support with difficulties, slow response to the established treatment, the "omniscient" patient. Serum serotonin after the new treatment had a positive and constant evolution. Her sleeping and eating habits improved, also her cognitive status and disposition.

3. Discussions

3.1. General discussions

The psychiatric disorders related to stress, anxiety and depression can intensify or exacerbate some somatic comorbidities (Berger et al., 2015) or vice versa, as it was demonstrated in this study. Dental pathology and psychiatric comorbidities appear to have a synergic effect and they also appear to be in a co-dependence when both pathologies are found in the same patient.

Also, from our case report, we can conclude that once one of these two pathologies is treated, also some symptoms from the other one descends in intensity. In contrast, that was demonstrated in the a 2013-study (Bernson et al., 2013**)** about dental coping, our patient presented at the dental cabinet for investigations and treatment even if there existed symptoms of a deep depression. Moreover, she agreed to receive psychiatric help even if she did not ask for it in advance.

From the same viewpoint as Alkan et al.'s study, our patient had parafunctional habits and lower income habits, but in contrast on their study, she had medical studies (Alkan et al., 2015)**.** It is also demonstrated, that symptoms of depression can lead to poor oral hygiene and poor oral hygiene can lead to poor alimentation which can be defined as a symptom of depression and not only a cause because of major dental problems. Both factors can lead to poorer quality of life (Hugo et al., 2009)**.**

This case report has brought to light that the complications due to dental and psychiatric pathologies affect the quality of life of one's patient as

it was demonstrated also for a patient with chronic diseases such as diabetes or end-stage renal disease (Cervino et al., 2019**;** Nițoi & Moroianu, 2020; Moroianu et al., 2020)**.**

It is well-known that vitamin D plays an important role in the teeth mineralization and protection, fact demonstrated in the study by Botelho et al. in 2020' study (Botelho et al., 2020). Even if the dosage of vitamin D was in the normal parameter, our patient developed severe dental problems that made her alimentation difficult. We can consider that all her dental problems can be connected to her congenital orthopedic condition even if she were under a rigorous medication for that.

Furthermore, we can consider, that her low level of serotonin and her depression symptoms have also been a factor for not taking care of her oral health in advance (Untu et al., 2015). The persistent depressive disorder can also be a factor for poor oral health, even if she had a family, a good relationship with her husband and medical studies.

3.2. Highlights

- Anxiety detected in the dental office is not always an anticipatory anxiety, but it can be associated with vast psychiatric pathology.

- Multidisciplinary consultation and teamwork patient-psychiatrist-dentist can be part of a screening process if the patient associates psychiatric and dental pathology.

4. Conclusions

Additionally, adult patients with a long psychiatric history show treatment-resistant psychiatric symptoms associated with dental pathology. Although the established psychiatric treatment quickly resolved some of the patient's functional and social disorders, consultation and dental treatment prevailed to resolve the appetite disorder and its perception of stigma toward others. After completing the individual response questionnaire, an increase in the quality of life and the patient's future perspectives were observed, existing a negative response to the item about suicidal thoughts/ideas and a positive response to the one about future plan.

Both psychiatric and dental pathology-screening programs are necessary because when they occur simultaneously, the adjacent symptoms have a synergistic effect, and it would be preferable for treating these associated pathologies to be performed at the same time and the patient regularly monitored.

Conflict of interest disclosure

There are no known conflicts of interest in the publication of this article. The manuscript was read and approved by all authors.

Compliance with ethical standards

Any aspect of the work covered in this manuscript has been conducted with the ethical approval of all relevant bodies and that such approvals are acknowledged within the manuscript.

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All authors have contributed equally to this paper.

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