Anxiety and panic disorders in the dental office

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ABSTRACT

Background: Panic attack is a frequent clinical situation that all physicians can face regardless of their specialty and that can raise special diagnostic problems because it may mimic other medical conditions, some of them life threatening. **Objective:** The purpose of this paper is to provide a summary of symptoms and signs and differential diagnosis problems of the panic attack. **Methods:** We present the clinical case of a 59-year-old hypertensive and previously treated by radiofrequency catheter ablation for paroxysmal supraventricular tachycardia who had a panic attack in the waiting room of a dental office. **Discussions:** Data on trigger factors (including dental procedure or situations), differential diagnosis and treatment implications are discussed. **Conclusions:** The diagnostic of the panic attack requires caution due to symptoms that may lead to confusion with other diseases and due to comorbidities that may accompany or predispose to it. Dentists should make the distinction between ordinary dental anxiety or fear and panic disorder in order to be able to provide appropriate treatment.

KEY WORDS:

Panic attack, dental anxiety, diagnostic

BACKGROUND

Anxiety and panic disorders are extremely common in dental office and represent a considerable source of stress for both dentist and patient. Treating this patients is very difficult because they are very sensitive at painful stimulus, they have an increased pain perception so they risk to be misdiagnosed. Also usually the patients will remain with an exaggerate memory of pain and unpleasant dental experience so they will present in the dental office only in emergency situations that will require difficult procedures leading to reinforcement of their anxiety.(1) These patients need to be identified by the dentist by interviews, anxiety scales and objective assessment in order to be able to distinguish ordinary dental anxiety or fear from panic disorder and to provide a previously appropriate treatment (psychotherapeutic, pharmacological or a combination of both) depending on the clinical situations and the patient characteristics.

Dental anxiety is a specific anxiety toward the dentist or dental procedures or even to the thought of visiting the dental office. (2) Dental phobia is an extremely severe, overwhelming and irrational fear leading to complete avoidance of going to the dentist. Dental anxiety may be the result of multiple factors, such as previous dental or other traumatic experience, especially in childhood (conditioning experiences), perception of the lying back in a dental chair as a vulnerable position, perception of accessing the mouth as a space invasion, fear of needles, sensory triggers (turbine drills, screams, specific smell, visualization of dental instruments or blood, vibrations).

The panic attack corresponds to an episode of extreme anxiety accompanied by symptoms and physical signs with a sudden onset and limited duration. Most often the attack occurs unexpected, in an unpredictable way, without a clear trigger factor. Typically the symptoms will reach a peak within 10 minutes and they last for about 20 to 30 minutes but the duration can vary from minutes to hours. The panic attack is marked by intense physical manifestations associated with psychic symptoms. It must be remembered that several signs may be associated but at least 4 of the following symptoms must occur brutal and paroxysmal for positive diagnosis. (3)

- cardiorespiratory complaints (palpitation, chest pain or discomfort, dyspnea).
- neurovegetative complaints (flushes, sweating, pallor, chills or heat sensation, trembling or shaking, tingling sensations, paresthesia, nausea, abdominal pain, [tunnel vision](#), flashing vision)
- vestibular complaints, less frequently (feeling dizzy, unsteady, light-headed or feeling of fainting)
- psychic symptoms (fear of losing control or "going crazy", fear of dying, a sense of things being unreal (derealization) or feeling detached from oneself (depersonalization)
- behavioral symptoms associated with panic attack (immobilization or hyperactivity with escape behavior, avoidance, aggressivity)

Panic disorder is characterized by recurrent attacks of severe anxiety (panic), which are not limited to any particular situation and are therefore unpredictable and unexpected. This

is why the patient worries about additional attacks and their consequences and adopt maladaptive change in behavior in order to avoid them.(4) The diagnosis of panic disorder implies that the attacks occurs unexpected and it cannot be attributable to toxic substance (drug abuse, medication – even withdrawal effect) or medical condition (hyperthyroidism, cardiopulmonary disorders)(5). In order to differentiate from other anxiety disorders we mention that the anxiety episodes do not occur only in response to feared situations (as in social anxiety disorder), to phobic objects (as in specific phobia) or to reminders of traumatic events (as in posttraumatic stress disorder).

CASE PRESENTATION

CA is an 59-year-old female patient hospitalized in emergency for sudden onset of palpitations, chest pain, dizziness, dyspnea, headache, paresthesia, tinnitus, extreme anxiety, sweating, abdominal pain, flushing. The crisis has started in the waiting room of the dental office before the dental check itself. The patient said she was hypertensive and ten years ago she was treated by radiofrequency catheter ablation for paroxysmal supraventricular tachycardia. For those diseases she is taking chronic medication: telmisartan 40 mg/day. After the ablation procedure the patient experienced more episodes of palpitation and anxiety but in the last year she is having one or two attacks a week with an unexpected and rapid onset. Every time during the crisis she has measured her blood pressure several times using automatic monitor and even though she is taking the sublingual captopril pills that doctor has recommended in those situations the blood pressure continues to increase as well as the panic degree which is why she was repeatedly admitted in the emergency services. The last time she presented in the emergency room she had very high blood

pressure with hand and face paresthesia and important dizziness and for this reason a stroke was suspected. Cerebral CT scan has invalidated this diagnosis. The patient was not a smoker, alcohol or coffee consumer and she comes from the rural environment therefore she usually gets to the hospital being driven by her husband. When we asked, she wasn't able to identify a clear trigger for her attacks except the periods when her husband was not home for several hours because she was always afraid that she will have another attack and she will be alone without the possibility to arrive in time at the hospital.

Clinical examination reveals a very anxious patient, facial flushing, sweat skin, normal pulmonary auscultation, a BP of 190/100mmHg, HR of 120 bpm, rhythmic heart sounds, diffuse abdominal pain on palpation. Our clinical diagnostic assumptions were hypertension (hypertensive urgency), panic attack, angina pectoris attack or even myocardial infarction, pheochromocytoma, paroxysmal supraventricular tachycardia, hyperthyroidism, spasmophilia.

An ECG performed during this admission showed sinus rhythm and no signs of ischemia with a heart rate of 104/min. Chest X-ray was normal without signs of pulmonary congestion, the echocardiography revealed slight left ventricular hypertrophy, a normal left ventricular ejection fraction (62%) without regional wall motion abnormalities and intact valves. Abdominal and thyroid ultrasound were normal. Repeated 24 hours Holter monitoring after the acute episode did not record arrhythmic episodes. Her laboratory results revealed a slight increase of serum cholesterol of 260 mg/dl (normal value, below 200 mg/dl) and LDL cholesterol of 140 mg/dl (normal value below 70mg/dl); and triglyceride level of 160 mg/dl (normal range, 40–150 mg/dl), with normal values of

glycaemia, calcium, CK – MB and troponin levels, The thyroid hormones were in normal limits so we excluded hyperthyroidism. In order to eliminate a pheocromocytoma we also performed a fractionated plasma free metanephrine level and a 24-hour urine metanephrines and they were in normal limits. We requested also a neurological consult that denied epilepsy and transient ischemic accident and a psychological consult which diagnosed panic disorder and recommended psychological counseling

After gathering all necessary data, we concluded on the following diagnoses: essential hypertension third degree with high additional risk, panic disorder, dyslipidemia. The patient was treated with a [benzodiazepine](#) (alprazolam 0,5 mg), sublingual captopril 25 mg repeated twice, amlodipine 10 mg. The patient had already taken telmisartan and betaxolol in the morning. She was discharged on dietary salt restriction, telmisartan 80 mg/day + betaxolol 20 mg, atorvastatin 10mg, escitalopram (an antidepressant of the selective serotonin reuptake inhibitor class-SSRI) and xanax 0,25 mg x3/day (benzodiazepines may also be used in combination with SSRI during the first weeks before the onset of efficacy of the antidepressants, psychological therapy. In acute panic attacks lorazepam melting tablets at a dose of 1.0 mg may be used. Also captopril 25 mg repeated if necessary and amlodipine will be used if the attack is associated with hypertensive urgency.

DISCUSSIONS

This case is illustrative for the panic attack because the patient showed a multitude of symptoms and physical signs associated with an episode of extreme anxiety with sudden onset. However the final diagnosis is panic disorder because the patient has recurrent panic attacks (2 to 3 times a week) which are

not limited to any particular situation and therefore are unpredictable (she is always afraid that she will have another attack). Our patient does not manifest anxiety about ordinary day-to-day situations as in generalized anxiety disorder (6). Other psychiatric disorders that may also manifest with panic attacks (bipolar disorder, depressive disorder, phobic disorders) must be ruled out in differential diagnosis. (7)

Although unexpected episodes are required for the diagnosis, many patients with panic disorder may also have expected panic attacks in response to a known trigger. The panic attack in our patient could not be attributed to drug abuse, caffeine, alcohol or tobacco consumption, medication (sympathomimetics, decongestants, corticoids, levothyroxine) or withdrawal syndrome (benzodiazepines, opiate drugs, alcohol, tobacco). However our patient developed a panic attack while she was waiting in a dental office, therefore, in our opinion, [psychological stress](#), dental fear and sensory stimulus (turbine drills, specific smell) might acted as triggers. Many evidence suggests that dental anxiety is frequently associated with other psychiatric disorders, the most common comorbid being anxiety-related disorders.(8) Also the patients with panic disorder may have a panic attack during de dental procedure due to pain stimulation and to the epinephrine added in dental anesthetics especially in the case of the accidental injection into a vein or if the patient has pre-existing medical conditions, such as high blood pressure and cardiac issues. (9)

Although the diagnosis of panic attack is essentially clinical it may raise important differential problems because the symptoms and physical signs may mimic other medical conditions especially cardiovascular diseases, some of them life threatening. Also many of

these conditions are common comorbidities. Our patient was repeatedly admitted in the emergency services. Palpitation, chest pain and shortness of breath are very common symptoms in the panic attack, therefore a [diagnosis of exclusion](#) of cardiovascular illnesses (including hypertensive emergency or urgency, [angina](#), [myocardial infarction](#), arrhythmia or acute heart failure) must be performed in emergency before diagnosing a panic attack. In our patient blood pressure was high but [electrocardiogram](#) show no signs of ischemia or arrhythmia, normal myocardial enzymes eliminated an acute coronary syndrome. Normal pulmonary auscultation and chest X-ray excluded pulmonary edema, pulmonary embolism, pneumothorax or asthma attack. We also evaluate our patient for endocrine pathologies (she had a normal hormonal profile) because her panic attacks were accompanied by significant neurovegetative complaints (flushes, sweating, trembling) that may mimic crisis of hyperthyroidism or pheochromocytoma (a [neuroendocrine tumor](#) that secretes high amounts of [catecholamine](#)). Neurological consult and CT scan invalidated the stroke.

In acute panic attacks the doctor must use reassuring measures: isolate the patient from trigger factors, adopt a calm attitude, inform about the lack of gravity of the crisis and its transitory nature, encourage slow abdominal breathing to avoid hyperventilation (breathing with the hand in front of the mouth or in a paper bag). In case of failure, a benzodiazepine with a short half-life will be

administrated oral or sublingual (alprazolam 0.25 mg or 0.5 mg for example). If the panic attack occurs on the dental chair the dentist must stop immediately any procedure, remove everything from the mouth, seat the patient up, check his pulse and blood pressure. It might be appropriate for the dentist to step away slightly because it can seem quite overpowering to have a dentist so close. Reassuring measures and anxiolytics will be administrated. (10)

The treatment for panic disorder combine common lifestyle recommendations (patient education, avoiding possible triggers, physical activity, improving sleep quality), psychotherapy (relaxation techniques, cognitive behavior therapy, join a support group) and medication. Selective serotonin reuptake inhibitors (SSRIs) are generally considered first-line therapy but they have a delay in onset of action. To prevent relapse the treatment should be used for 12 month after the improvement of the symptoms. Benzodiazepines are used in combination to reduce anxiety but only for a short-term basis because of their high risk of dependence. Dental treatment in patients with panic disorder implies several measures: establishing a trust-based relationship between the patient and dentist, administration of the routine medication including on the day of the dental procedure, psychotherapy and anxiolytic premedication, avoiding added epinephrine in dental anesthetics, quality analgesia.

CONCLUSIONS

The panic attack corresponds to a brutal episode of extremely intense anxiety, accompanied by symptoms and physical signs that evoke a medical or surgical emergency. Although the diagnosis is essentially clinical, it may raise important differential problems because symptoms may mimic other medical conditions some of them life threatening. The diagnosis may be even more complicated because many diseases in differential diagnosis may be present as comorbidities.

Dentists should make the distinction between ordinary dental anxiety or fear, panic attack and panic disorder in order to be able to provide an appropriate treatment.

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REFERENCES

1. Appukuttan D– Strategies to manage patients with dental anxiety and dental phobia: literature review [Clinical, Cosmetic and Investigational Dentistry](#). 2016, 8:35-50
2. Eitner S, Wichmann M, Paulsen A, Holst S. Dental anxiety – an epidemiological study on its clinical correlation and effects on oral health. *J Oral Rehabil*. 2006;33(8):588–593.
3. Dominique Servant, Émilie Walczak Crise d'angoisse aiguë et attaque de panique la revue du praticien. 2012, 62, 555-558
4. Amy B. Locke, Nell Kirst, Cameron G. Shultz - Diagnosis and Management of Generalized Anxiety Disorder and Panic Disorder in Adults *Am Fam Physician*. 2015. 1;91(9):617-624.
5. [Lydiard RB](#). Recognition and treatment of panic disorder. *J Clin Psychiatry*. 2007;68(11):e26.
6. Hoge EA, Iivkovic A, Fricchione GL. Generalized anxiety disorder: diagnosis and treatment. *BMJ*. 2012;345:e7500.
7. [Harri Halonen](#), [Jenna Nissinen](#), [Heli Lehtiniemi](#), [Tuula Salo](#), [Pirkko Riipinen](#), and [Jouko Miettunen](#) The Association Between Dental Anxiety And Psychiatric Disorders And Symptoms: A Systematic Review *Clin Pract Epidemiol Ment Health*. 2018; 14: 207–222
8. Halonen H., Salo T., Hakko H., Räsänen P. The association between dental anxiety, general clinical anxiety and depression among finnish university students. *Oral Health Dent. Manag*. 2014;13(2):320–325
9. [Caroline Menzies](#). Epinephrine in Dental Anesthetics Can Cause Panic Attack [Health](#), 2010
10. Craske MG, Kircanski K, Epstein A, et al.; DSM V Anxiety; OC Spectrum; Posttraumatic and Dissociative Disorder Work Group. Panic disorder: a review of DSM-IV panic disorder and proposals for DSM-V. *Depress Anxiety*. 2010;27(2):93-112.

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