Original Article

Differential diagnosis of orofacial pain I: associated with intracranial and extracranial structures and psychogenic disorders

Diagnóstico diferencial del dolor orofacial I: asociado a estructuras intracraneanas, extracraneanas y desórdenes sicogénicos

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ABSTRACT

Orofacial Pain (OFP) is a common problem among the general population and represents a condition that is potentially debilitating and deteriorating. The correct diagnosis is the principal base for an adequate management; in patients with DOF this may be a simple task or a very complex and frustrating experience for both, clinician, and patient. However, the clinician's knowledge of all possible pain condition that can affect the orofacial region can facilitate the diagnostic process. It is important to emphasize that is very difficult to diagnose something unknown for the clinician and even though "common things occur commonly", it is not strange to find patients with "rare" pathologies, of low occurrence, which the clinician has forgotten or do not know. The fact that the clinician does not consider all these aspects during the clinical evaluation could easily guide him/her to be confused, which finally ends up in an inadequate diagnosis, wrong management, and possible devastating consequences for the patients. This is a series of three articles that have the purpose to present a literature review of the conditions that have been considered to establish the differential diagnosis of OFP. Pain associated to intracraneal structures (brain tumor headache), extracraneal estructures (teeth, eyes, and paranasal sinuses, among others) and psichogenic pain will be discussed in this first article.

Keywords: *pain, orofacial pain, facial pain, differential diagnosis, headache, psychogenic headache, brain tumor.*

RESUMEN

El dolor orofacial (DOF) es un problema común en la población y representa una condición potencialmente deteriorante y debilitante. Un diagnóstico correcto es la base principal para un manejo adecuado; en pacientes con DOF esta tarea puede ser pequeña y simple, o bien, convertirse en una experiencia complicada y frustrante para ambos, clínico y paciente. Sin embargo, el conocimiento por parte del clínico de todas las posibles condiciones de dolor que pueden afectar la región orofacial facilitará el proceso diagnóstico. Es importante destacar que es muy difícil diagnosticar algo que no se conoce y aunque "las cosas comunes ocurren comúnmente" no es extraño encontrar pacientes con patologías "raras", de poca ocurrencia, que el clínico ha olvidado o no conoce. El hecho de que el clínico no considere todos estos aspectos durante la evaluación clínica puede llevarlo fácilmente a confundirse, lo que finalmente terminará en un diagnóstico incorrecto, mal manejo clínico y posiblemente consecuencias devastadoras para los pacientes. Esta es una serie de tres artículos que tienen como propósito presentar una revisión de la literatura de las condiciones que se han considerado para establecer el diagnóstico diferencial del dolor orofacial. Los dolores asociados a las estructuras intracraneales (cefaleas por tumores cerebrales), extracraneales (dientes, ojos, senos paranasales, entre otros) y el dolor sicogénico serán discutidos en este primer artículo.

Palabras clave: *dolor, dolor orofacial, dolor facial, diagnóstico diferencial, cefaleas, cefaleas sicogénicas, cefaleas por tumores cerebrales.*

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INTRODUCTION

Pain is a condition with high prevalence in general population and is the main reason to request medical attention[1]. Around 50% of the population displays some sign or symptom of pain and/or dysfunction in the orofacial region; nevertheless, only 5% to 10% experience problems severe enough to require treatment. Orofacial pain is responsible for 40% of all the pain syndromes that occur in the population, representing remarkably high expenses for the health system and thus being a public health issue.[4-5]

Pain represents a potentially deteriorating and debilitating condition that can affect any individual. This is especially true when it occurs in the orofacial region, because these structures are linked to everyday functions such as eating, speaking, seeing, hearing and they are also an important part of personal appearance, self-esteem, and body language.[6-8]

In general, pain has been classified as acute and chronic. Acute pain is characterized by its short duration, displaying an observable pathology. Its treatment is easy and predictable and in most of the cases it does not represent a permanent disability for the individual. Chronic pain, on the other hand, is more challenging to diagnose and treat; it is characterized by being persistent and of long duration (longer than six months by definition), presents a poorly defined pathology, a history of multiple treatments without much success, different contributing factors, and most of the times permanently disables the patient. [9-10]

Classifying, diagnosing, and managing OFP, especially when it is chronic, is very complex. This is due to the dense number of structures in the orofacial region that derive from different embryological origins, its intricate vascularization and innervation, and the presence of organs of sensitivity. Although certain patients with painful conditions in the orofacial region are diagnosed and treated in a simple manner, in many cases it becomes a challenging task due to the complex anatomy, vague description of the pain, equivocal and inaccurate physical findings, psychosocial environment and a myriad of contributing factors involved[11-13]. During the clinical evaluation of OFP patients, it is also frequent to find together different signs and symptoms such as tooth sensitivity, tinnitus, paresthesia, nausea, vomiting, and lacrimation. These can suggest different diagnoses and thus can easily confuse the clinician. For this reason, it is not unusual that in many cases the differential diagnosis is characterized by multiple, imprecise, and overlapping diagnoses that resemble the way signs and symptoms appear.

It is important to emphasize that an inadequate diagnosis is one of the main causes of OFP treatment failure.[14-18] In many cases, this situation contributes to the development of chronic pain syndromes and to major crises accompanied by emotional and psychosocial problems such as depression, anxiety, sleep disturbances, alteration in the performance of certain daily activities and changes in lifestyle.[19-22] For this reason, the establishment of an accurate and prompt diagnosis is vital to provide adequate care to these patients.[25-18] For this purpose, factors such as the frequency of occurrence of the condition (prevalence), the most frequently affected sex and race, as well as the frequency of appearance of the different signs and symptoms that characterize the condition itself (type of pain, location and associated symptoms, among others) should be taken into account.[23,24] Similarly, the diagnostic aids that can be used to establish the presence of the pathology and the response to certain treatments should be known. In some cases, the response of

certain conditions is specific for certain therapies (drugs) and thus they can be used as diagnostic treatment.[23, 24]

The purpose of this article is to present to those interested in OFP management —especially benign chronic OFP— a literature review of the conditions that have been described and that should be taken into consideration during the clinical evaluation and diagnostic process of OFP patients.

Table 1 shows a practical, systematic, and clinically applicable way to classify OFP.[25,26]. This guide will be used to discuss the signs and symptoms that characterize each group, which will provide the clinician with the information needed to establish the differential diagnosis, and to understand the clinical profile of these patients.

Table 1. Orofacial pain classification system

Group	Presence	Type
Intracranial structures	Continuous	Variable
Extracranial structures	Continuous	Variable
Psychogenic disorders.	Variable	Variable, Descriptive
Neurovascular and vascular disorders	Intermittent	Throbbing
Musculoskeletal disorders	Continuous	Dull
Neurogenic disorders		
Peripheral	Intermittent	Sharp, electric
Autonomic	Continuous	Burning, dull

Source: by the authors

OROFACIAL PAIN ASSOCIATED WITH INTRACRANIAL STRUCTURES (IS)

Pain in the orofacial region can be the manifestation of intracranial problems caused by traction, inflammation, distension, pressure of pain-sensitive structures (venous sinuses, middle meningeal veins, large arteries of the skull base, pia mater, dura mater, intracranial arteries, cranial nerves) and syndromes of the central nervous system (CNS). [27-28] Around 40 and 60% of patients with a brain tumor (BT) exhibit headache (H) as the first symptom, and approximately 2 to 4% of patients with H presents a BT [29-32].

Referred IS pain is variable in type and intensity; however, its diagnosis is facilitated because it is usually accompanied by systemic or neurological signs/symptoms.[33,34] Given the serious consequences that can derive from the inadequate diagnosis of a painful condition associated with intracranial structures, these should be the first to be ruled out as the cause of pain. Therefore, any new and sudden orofacial pain (especially headache), which increases in intensity, frequency, and duration in a rapid and progressive manner, should be carefully analyzed and evaluated because of its potential for fatal consequences.[28,35] Although it is rare to find that pain from IS refers to the jaw, face, teeth, or other orofacial structures, the clinician should be alert and aware of this possibility because of the difficulty to differentiate certain conditions, especially in the absence of neurological or systemic signs and symptoms.[36-39] Table 2 displays the general characteristics that must be considered by the clinician to suspect a painful condition with IS as a source.

Table 2. Characteristics of OFP associated with intracranial structures

1. Sudden OFP that does not respond to traditional medical treatment.
2. Persistent headache in the absence of familiar history of migraine.
3. Increase or worsening in severity and/or frequency of the pain.
4. Sleep interruption and/or disturbances caused by the pain.
5. Pain that is exacerbated and/or hastened by exercise, changes in position, coughing, defecation, sneezing.
6. Systemic and/or neurological associated symptoms such as weight loss, fever, weakness, confusion, disorientation, vomiting.
7. Neurological symptoms such as ataxia, paralysis, vertigo, tinnitus, or convulsions.
8. History of head trauma, associated with the date of pain onset.
9. History of conditions that may predispose to the onset of CNS lesions. History of cancer.

Source: by the authors

OROFACIAL PAIN ASSOCIATED WITH EXTRACRANIAL STRUCTURES (ES)

This group includes teeth (with their pulp and periodontal tissues), eyes, ears, nose, throat, paranasal sinuses, salivary glands, tongue, mucogingival tissues, lymph vessels and nodes, and skin (Table 3).

These structures can be affected by infectious, degenerative, edematous, neoplastic, or obstructive processes. In many cases pain is acute and it is common to find that the origin is referred pain between ES themselves or it is related to other chronic pain conditions (migraines, cluster headaches, among others). The clinician must be careful in the effective diagnosis of any pathology associated with ES due to the proximity of IS and its easy involvement[40]. Due to the diversity of tissues that engage in ES, pain can vary considerably and lead to a myriad of diagnoses.

In this paper we will review the general aspects relevant to establish a differential diagnosis, making easier for the clinician to do the propriate referral of the patient.

Table 3. Extracranial structures

1. Teeth (pulp and periodontal tissue)
2. Eyes
3. Ears
4. Nose
5. Throat
6. Paranasal sinuses
7. Salivary glands
8. Tongue and oral mucosa
9. Vessels and lymph nodes
10. Skin

Source: by the authors

OROFACIAL PAIN ASSOCIATED WITH TEETH

Toothache (TA) is the most common cause of orofacial pain [41] and is usually associated with pulp inflammation secondary to dental caries, which facilitates diagnosis. Once it has been established that the pain has its origin in dental structures, the clinician must differentiate between pulpal and periodontal problems. Dental pulp inflammation (pulpitis) is classified as reversible and irreversible [42-44]. Reversible pulpitis is characterized by poorly localized pain that is usually initiated by a hot or cold stimulus that disappears when the initiating stimulus is removed.[42] When the dental pulp does not adapt to aggressions, often bacterial, pulp inflammation becomes irreversible and pain can be initiated by a noxious stimulus or occur spontaneously: unlike reversible conditions, pain does NOT disappear when the initiating stimulus is suspended. [42]

The periodontal tissue can also be affected by microorganisms secondary to a pulp problem. Also, the pulp problem can be derived from an infection that started in the periodontium. In both cases, when the periapical region is involved, pain is caused by chewing, occlusion, percussion, and there is a sensation of dental extrusion in the affected area. It is generally accompanied by alterations in the periodontal tissues such as discoloration, inflammation, bone loss and unclear pulp responses, depending on the degree of pulpal involvement [42].

The clinician may use methods such as percussion, pulpal temperature tests or anesthetic blocks aiming to reproduce, alleviate or worsen the painful condition[42]. Periapical radiography can be particularly useful to corroborate the diagnosis of dental pathologies. If the diagnosis is not clear, it is preferable to follow up the patient and not to proceed with irreversible pulp therapy. [43,44]

TA is generally characterized as dull, throbbing, or sharp in the region on the same side of the involved tooth. However, the closer the tooth is to the midline, the greater the likelihood that the pain will be present on both sides. It is important to consider that when acute orofacial pain is present, TA should be ruled out: it is generally characterized by being throbbing, interrupting sleep, increasing when the patient lies down, as well as with the ingestion of hot or cold beverages. [45,46].

Cracked tooth syndrome is a relatively common condition[47] that occurs more often in teeth weakened by previous restorations or in people with a history of fractures in other teeth[48]. The diagnosis in many cases is confusing due to the difficulty in identifying the fracture, especially if it is vertical. Bite tests (squeezing), use of dyes or transillumination are commonly used to locate the fracture[49]. Bite tests are the most used ones and consist in having the patient bite down with each cusp on a firm instrument. Biting on the involved cusp is expected to reproduce the symptomatology. It is important to note that in many cases the pain appears once the pressure on the tooth is released[48]. Pain when chewing, sensitivity to cold, hot, and sweet foods, sensitivity to percussion and discomfort on wedging with wooden wedges are symptoms of this condition[48].

The clinician confronted with confusing symptomatology should be alerted to rule out other conditions or involved structures (including other teeth) that may be the primary source of the pain. On many occasions when TA is referred to other teeth or tissues, diagnosis can be very challenging because toothache can vary widely and is the only type of pain that can mimic any known pain in the orofacial region. Likewise, there are certain characteristics that can make the clinician suspect there are toothaches of non-dental origin (Table 4). These can be originally caused by conditions such as myofascial pain, migraines, trigeminal neuralgia, heart conditions, sinusitis,

and psychogenic disorders[43,44]. These clinical situations make even more complex to determine the true source of pain, which makes the picture confusing for the professional, thus requiring knowledge of the general characteristics of these conditions (Table 5). When this situation arises, a reevaluation of the diagnosis should be considered, as well as therapeutic options for treatment continuation or timely referral[50]. Other than pain referred to the orofacial region for heart conditions, we will review the other conditions below.

Odontalgia and/or jaw pain may be the only symptoms of a manifestation secondary to heart conditions[51]. Fortunately, diagnosis is facilitated in most cases because the pain coming from the heart displays certain characteristics that are common in heart conditions (pain in the chest and left side of the neck and arm)[52,53]. Pain referred to the teeth or jaw is generally dull, cyclical, increases with exercise (climbing stairs or walking for long periods) and decreases with rest (watching television or sleeping)[54]. Local provocation (percussion or pressure on the teeth) does not alter the pain and the use of nitroglycerin tablets is associated with periods of pain relief.

Table 4. Characteristics of non-dental origin odontalgia

1. Multiple and spontaneous toothache
2. Inadequate or unidentified local cause of pain
3. Stimulating, burning, non-throbbing toothache
4. Constant, non-remitting and invariable toothache
5. Persistent and/or recurrent toothache
6. Inadequate response to reasonable dental therapy (including diagnostic anesthetic blocks)

Source: by the authors

OROFACIAL PAIN ASSOCIATED WITH EYES

Eye pain (periocular, ocular, retro-ocular or poorly localized) may be caused by a local disease or referred pain that may or may not have signs in the eyeball[55]. Referred pain must come from lesions of adjacent structures such as: teeth, jaw, paranasal sinuses or being associated with intracranial (cerebrovascular), neurogenic (occipital neuralgia) or neurovascular disorders (migraines or cluster H). These disorders should be ruled out by careful evaluation of the patient. Eye pain with or without the presence of minimal signs occurs with some regularity and common conditions such as myofascial pain of the periorbital musculature (caused by eyestrain, brow furrowing or forehead wrinkling) should be ruled out. Other causes such as medications, chemotherapeutic agents, exposure to poisons or certain pesticides, and conditions such as retrobulbar neuritis, dryness, recurrent erosions, aneurysms, or infections (herpes zoster before the onset of rashes) can be easily overlooked when a careful and thorough assessment is not performed.[56]. The patient with pain in the eye area should be promptly referred to the ophthalmologist to avoid delays in the timely diagnosis of certain pathologic conditions (temporal arteritis), thus preventing serious ocular consequences, which could lead to irreversible visual problems[57-59].

Table 5. General characteristics of non-dental origin conditions that can be displayed as odontalgia

Condition	Pain onset factors	Pain type	Response to anesthetic block	Drugs used as diagnostic treatment
Myofascial pain	Palpation of trigger points	Dull	Positive	Muscle relaxants
Sinusitis	Environmental changes (pressure, temperature)	Dull, pressure	Negative	Antibiotics
Headaches			Negative	
Migraine	Wines, cheeses	Throbbing, palpitating		Imitrex (sumatriptan), ergotamine
In clusters	Sleep	Piercing		Antimigraine, 100% oxygen
Paroxysmal hemicrania	Neck movement	Sharp, throbbing		Indole (indomethacin)
Trigeminal neuralgia	Friction of the trigger zone	Electric, sharp	Positive	Tegretol (carbamazepine)
Traumatic neuromas	Pressure in the neuroma	Sharp	Positive	Capsaicin
Atypical odontalgia	Confusing	Dull, uncomfortable	Confusing	Antidepressants
Heart diseases	Exercises, tension	Dull	Negative	Nitroglycerin
Brain tumors	Sneezing, efforts	Variable, descriptive	Negative	None
Psychogenic disorders	Confusing	Variable	Confusing	Variable

Source: by the authors

OROFACIAL PAIN ASSOCIATED WITH THE EARS

Otalgia is a common symptom in the orofacial region and when the origin is in the ears, it is generally caused by otitis externa, otitis media, cerumen or foreign body impaction, mastoiditis or neoplasms[60-62]. Symptoms associated with decreased hearing, tinnitus, balance problems and/or a feeling of fullness or pressure in the ears lead the clinician to suspect or corroborate that the pain is originating in the ear[63]. However, due to the varied innervation of the ear (including cranial nerves V, VII, IX, X and cervical nerves C2, C3), there are many structures and conditions that refer pain to this area. Around 50% of the otalgia are referred (secondary)[64-68], and half of these are of dental origin (TA) and/or caused by temporomandibular disorders (TMD). Other conditions such as pathologies in tonsils, pharynx, larynx, neuralgias (glossopharyngeal, occipital), Eagle syndrome and even conditions such as lung cancer should be ruled out in the differential diagnosis of otalgia [69-71].

OROFACIAL PAIN ASSOCIATED WITH THE NOSE

Localized pain in the nasal region may be caused by the septal contact with the mucosa (lateral nasal wall), allergies, vasomotor rhinitis, polyps, trauma, neoplasms, or septal hematomas. Pain may be referred to the frontal, posterior and temporal areas of the head, which requires careful evaluation by the clinician[72]. Although nonspecific, some associated symptoms such as rhinorrhea, fever, nasal obstruction, or epistaxis corroborate the nose being the primary source of pain. This is particularly true when other adjacent structures such as teeth or paranasal sinuses have been ruled out as the cause of the patient's complaint. A more objective way to confirm rhinogenic pain is by palpation of points in areas of the nasal cavity or paranasal series that replicate the patient's

complaint of pain[73-75]. The application of local anesthesia without vasoconstrictors on the painful spot should alleviate the patient's symptomatology and ultimately be a guide toward the pain genesis[73-75].

OROFACIAL PAIN ASSOCIATED WITH THE THROAT

Sore throats are often caused by secondary inflammatory processes, infections, or other local problems such as tumors. Due to the innervation of the throat, pain may be referred by disorders in the mediastinum, upper gastrointestinal system, and ears. Differential diagnosis should rule out conditions such as Eagle syndrome, carotid artery disease and glossopharyngeal neuralgia, which frequently refer pain in this area. [76.] These last two conditions will be discussed later in the sections about neurovascular and neuropathic pain, respectively. Eagle syndrome[77,78] is a disorder characterized by the calcification of the stylohyoid ligament, resulting in irritation or compression of the glossopharyngeal nerve. The painful symptomatology is similar to that of glossopharyngeal neuralgia and its triggering factors are head rotation, swallowing and mastication, along with persistent discomfort in the throat. Radiographic images are used to confirm the calcification of the stylohyoid ligament and corroborate the diagnosis.

OROFACIAL PAIN ASSOCIATED TO PARANASAL SINUSES (PS)

Pain is not the first symptom to occur in pathologic PS conditions, but its presence usually indicates that the pathologic PS process has extended beyond the boundaries of the sinuses, is in an acute phase, or has led to common complications such as abscesses, mucoceles, and/or meningitis [79-84]. In a similar way to nose-related factors, pathological factors in the PS are infectious, inflammatory, or neoplastic processes. These conditions may start asymptomatically, symptomatically, or manifest as nonspecific reactions such as dizziness in the absence of otologic causes[85]. It is rare to reach a diagnosis without the presence of abnormal findings on nasal examination (thickening of the comets, edema, nasal polyps, or generalized erythema), and the use of conventional radiographs helps to corroborate the diagnosis[36]. The pain generated by PS is generally dull, non-throbbing, increases with head movements, coughing, and sneezing as well as with body inclination, and can be modified by weather changes, allergies, and barometric changes[83-85]. Symptoms and signs such as nasal congestion, olfactory changes, changes in nasal discharge density or color, fever, halitosis, coughing, irritability, swelling, and erythema are also common. However, it should be taken into consideration that these signs are not pathognomonic for sinusitis, which is why certain cases are difficult to diagnose, especially when conditions associated with branches I and II of the trigeminal nerve are involved, because these can mimic PS pathologies [79, 81, 83]. Differential diagnosis in this type of disorders should rule out problems in adjacent structures such as teeth, salivary glands, neuralgic conditions (sphenopalatine ganglion), TMD and tension headaches[87].

The maxillary sinus is the most affected one. The patient reports dull and continuous tooth pain, and a sensation of tooth extrusion; this condition may be accompanied by nasal congestion, pain on pressure in the maxillary area, fever, retroorbital discomfort, general discomfort, and purulent nose discharge. Due to the proximity of the maxillary sinus to the teeth, these can be affected, and pain

can be referred reciprocally. However, when the primary problem is in the PS, these are affected bilaterally and teeth —although they remain vital to pulpal electric testing— are usually prone to percussion pain, but without signs of infection at the intraoral level.

Referred pain from the paranasal sinuses is also quite common and should always be taken into consideration[73]. Pain in the frontal region may be caused by frontal sinusitis, ethmoiditis refers pain to the orbits, maxillary sinusitis is usually associated with pain or tenderness in the maxilla and/or posterosuperior teeth, and sphenoid sinuses refer pain to the vertex or other parts of the skull[73].

OROFACIAL PAIN ASSOCIATED WITH SALIVARY GLANDS

Pain originating from salivary glands may be caused by inflammatory, infectious, hormonal, tumor or autoimmune diseases that generally cause diminution or obstruction of the glandular duct[15]. Pain and inflammation may be accompanied by difficulty or impossibility to chew and/or swallow, favoring the creation of an oral environment for bacterial growth, increasing the possibility of the formation of infectious processes such as caries or osteomyelitis. These conditions may become painful, glandular pathology being the primary source[26,79]. The patient usually reports pain and a feeling of pressure around the affected gland, and the thought of eating is usually associated with increased pain. However, pain relief is commonly accompanied by a sudden increase in salivation, which is caused by the drainage of saliva from the obstructed gland. Additionally, distension and/or compression of the affected gland may exacerbate pain[26,79].

OROFACIAL PAIN ASSOCIATED WITH THE TONGUE AND ORAL MUCOSA

The most frequent reasons for intraoral mucosal pain are infection, trauma, or systemic disorders[88]. Once a lesion is found (changes in color, size, etc.), it is advisable to make a prompt referral to a specialist in oral medicine as this type of condition may be the clinical manifestation of a local or systemic problem.[89] Symptomatology control (especially pain) without prior consultation may lead the patient and the clinician to mistakenly think that the condition may be benign and self-limiting, delaying the detection of serious pathologies.

Scalding, burning pain sensations in the intraoral mucosa in the absence of identifiable lesions are diagnosed as glossodynia or burning mouth syndrome (BMS). Literature analysis is inconclusive on several aspects of BMS, due to the varied diagnostic criteria used in different studies. However, BMS symptoms are estimated to have a prevalence of 707 in 100.000 people with a higher tendency to occur in women (especially postmenopausal women) than in men with a ratio of 5:1. The onset age is after the fifth decade[90,91]. BMS can be associated with other symptoms such as dry mouth, taste disturbances, thirst and other general symptoms (headache, insomnia, lethargy, decreased libido and emotional changes such as irritability and depression). BMS generally manifests in one or more oral structures, including the upper alveolar region, palate, lips, lower alveolar region and tongue, the latter being the most frequently affected, which is why this disorder has been commonly referred to as glossodynia or burning tongue syndrome[92,93].

Local (candidiasis, geographic tongue, allergies, irritation from partial dentures, infections), systemic (diabetes, anemia, menopause, vitamin and/or mineral deficiencies) and psychological

factors have been associated as possible etiologies[92,93]. Therefore, a careful evaluation of each of these factors is crucial for the diagnosis and management of this condition.

OROFACIAL PAIN ASSOCIATED TO LYMPHATIC VESSELS AND NODES (LN)

The orofacial region has an intricate irrigation with important vessels such as the internal carotid or superficial temporal arteries. These arteries can be sensitive to palpation when affected by painful conditions such as carotid artery disease and temporal arteritis[26]. LN are generally not visible, palpable, or sensitive under normal conditions: when they are painful on palpation, they are generally associated with infectious processes. Lymphadenopathies on the neck or axilla may be present in the early stages of Lyme disease. This is a bacterial infection displaying with toothache and facial pain, headaches, and facial nerve paralysis. Pain in the temporomandibular joints and masticatory muscles is also common[94].

OROFACIAL PAIN ASSOCIATED WITH THE SKIN

Pain or hyperalgesia in the skin may be a consequence of infectious conditions such as herpes zoster. Similarly, other neuropathic conditions such as traumatic neuralgia and/or trigeminal neuralgia may be associated with hyperalgesia or trigger zones found in the involved nerve branch[26].

PSYCHOGENIC DISORDERS

It is considered that these disorders could have their origin in the mind, and the general concept is that the physical symptoms reported by the patient have emotional or psychological factors as their primary source[95-97]. The category of psychogenic disorders includes somatization, conversion disorder, somatic delusion, and hypochondriasis, among others. Discussion of the diagnostic criteria for each of the above conditions is beyond the scope of this section. The reader is recommended to refer to texts that discuss this topic more extensively. However, the clinician must understand the general idea to identify this type of patient, but not necessarily to establish a specific diagnosis. Hence, it is recommended that whenever psychogenic disorders are suspected, diagnosis should be established with the help of a clinician specialized in mental health[95]. This avoids diagnosing many patients within this group, which is frequent, especially when the clinician uses the traditional biomedical system to establish his diagnosis and does not have an adequate answer to explain the patient's condition. If this is the case, it is more advisable to categorize the painful condition as idiopathic and not to classify it as a psychogenic disorder[96].

Patients suffering from pain, especially chronic syndromes, usually have a long list of previous visits to health care professionals and countless failed treatments[14]. This situation can cause frustration, despair, anxiety, disgust, belligerence, fear, stress, and depression[6,7,13,97]. These emotions are concomitant or secondary to the patient's situation. In many cases, they are due to the poor understanding offered by other clinicians, friends and/or family members regarding the actual pain

complaint. Moreover, these factors will perpetuate the condition from which the patient is suffering without being the primary source of the problem[98].

Psychogenic patients should be treated within a comprehensive model, regardless of whether emotional or psychological symptoms are playing a primary or secondary role (this should be determined by the specialist)[99]. However, the treating clinician must be able to recognize common disorders such as depression and anxiety[23,24]. Depression is characterized by sleep problems, changes in appetite, fatigue, impaired memory and concentration, agitation or psychomotor retardation, loss of interest in daily and recreational activities, hopelessness, and suicide attempts. On the other hand, anxiety manifests with sweating, tachycardia, accelerated breathing, headaches, restlessness, weakness, urinary and gastrointestinal changes[23, 24]. Other conditions such as Munchausen's syndrome[100] have been reported in patients with orofacial pain and should be considered during evaluation. In this pathology the patient reports false symptoms in a very elaborate manner and lies to gain attention, medical care, obtain prescription drugs, escape legal problems, and even obtain medical or hospital care for free. It appears that in some situations the patient may be seeking to satisfy a certain dislike of medical personnel, so the clinician should be alert to these cases, which are characterized by eccentric and dramatic reports and a detailed description of symptoms, which may suggest a tendency toward "fantasy and falsehood"[100].

Table 6. Main characteristics of a patient with psychogenic-origin OFP

1. They have multiple pain complaints.
2. They are more interested in convincing others that their complaint of pain is real and special than in being cured.
3. They deny the presence of emotional problems and its relationship to pain intensity.
4. They respond with pain or crying in the presence of a particular individual (wife, mother).
5. They always place themselves in a special category, claiming to have a unique and unusual condition.
6. They get to the consultation using the phrase "doctor, you are the only one who can help me".

Source: by the authors

The presence of significant emotional and psychological factors does not guarantee the existence of a psychogenic condition. [6,7,97] However, it is important to consider that, greater the number of these characteristics, greater the probability that emotional or psychological factors are influencing the pain experience. Therefore, it becomes urgent to seek specialized psychiatric or psychological help. It should be remembered that an adequate referral is always more appropriate than the establishment of a bad diagnosis and even a worse treatment [101,103].

General characteristics for identifying patients with psychogenic disorders are summarized in Table 6 and described in more detail below [101, 103].

1. The patient complains of different types of pain, which may be diffuse and in multiple sites; when one pain disappears, another similar or different pain appears. It is inconsistent with the anatomical distribution of the nervous system and is characterized by the absence of organic pathologies or pathophysiological mechanisms that explain the pain.

2. The reported severity of pain does not correspond to the patient's attitude or expressions: "The patient reports that the pain is severe but smiles gladly".
3. Inconsistency in the pain severity reported to different individuals, e.g. the patient tells the clinician that the pain is "killing them", but reports to the assistant or a friend that it's no big deal.
4. The patient is more interested in convincing others that their complaint of pain is real and special than in being cured.
5. The patient often denies the presence of emotional problems and its relationship to pain intensity. Pain with organic causes fluctuates in intensity and can be influenced by emotions such as fear, anger, sadness, and tranquility.
6. During evaluation, the patient may respond with pain to the mention a particular individual or factor.
7. The patient seeks to impress their audience by claiming that they have a unique and unusual condition, categorizing themselves within a special situation.
8. It is common for the patient to use the phrase: "Doctor, you're the only one who can help me."
9. The patient takes drugs (psychotropics) without a specific prescription.
10. The patient requests a prescription for medication at the first consultation.
11. Adult patient with crying or despair crisis and/or requesting another individual (spouse, child) to be present during the evaluation (not applicable in children or disabled people).
12. The pain does not cease or change: this makes the ailment constant and refractory to any kind of influence or intervention. In the absence of changes, the origin of pain is probably psychogenic and not physical.
13. The patient reports that their problem is unbearable and insists on requiring immediate attention, which may trigger a false emergency.
14. The patient becomes dependent on medications/drugs, family members and/or health professionals to relieve or overcome pain.
15. The patient refuses to be treated with conservative therapies, requesting special and aggressive treatments for their current circumstances.
16. Patients involved in litigation problems because of their pain condition always seek some type of compensation.
17. Symptoms are temporally related to certain psychological conflicts (stimuli from the social environment) that can onset or exacerbate the painful condition.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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