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PSYCHOLOGICAL FACTORS ASSOCIATED WITH CHRONIC OROFACIAL PAIN

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Abstract

Pain is one of the most common symptoms encountered in clinical practice and the head is a frequent site of pain. Chronic Orofacial Pain (COP) represents a complex pain condition with an etiology comprised of many factors including those falling within biological, psychological, and social domains. Psychogenic regional pain is a term used for "pain that patients feel in a region of the body where no peripheral cause can be found and is psychogenic in its evocation". Even in the field of psychology/psychiatry, many aetiologies and psychodynamics have been related to the development of psychogenic pain. This article deals with the treatment modalities to deal with the psychological repercussions of physical, orofacial pain.

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Introduction

Pain is a subjective and complex phenomenon with sensory, emotional, behavioral, and cognitive components, and the International Association for the Study of Pain defines pain as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage.[1] This definition includes not only sensory aspect of orofacial pain but also emotional and interpretive or cognitive aspect. [2] Pain is one of the most common symptoms encountered in clinical practice and the head is a frequent site of pain.[1]

Chronic Orofacial Pain (COP) represents a complex pain condition with an etiology comprised of many factors including those falling within biological, psychological, and social domains.[3] The term OFP consists of two parts: facial and oral. Facial pain comprises discomfort that initiates underneath the orbitomeatal line, directly above the neck, and anterior to the ears whereas oral pain includes pain inside the mouth. A heterogeneous group of disorders comes under chronic Orofacial Pain that is characterized by ongoing pain in the head and face region.[4] Four recognizable symptom complexes of chronic oro-facial pain may coexist: temporomandibular disorder (mayo-facial face pain); atypical facial pain (atypical facial neuralgia); atypical odontalgia (phantom tooth pain); and burning mouth (oral dysesthesia, glossodynia, glossopyrosis).[5] Epidemiological research has taken this evidence forward by 'lumping' these conditions together and collectively terming them as chronic orofacial pain, defined as pain in the face, mouth or jaws that has been present for a day or longer in the past month, and that has been present for 3 months or longer. [5] But It is now generally recognized that psychological factors also play an important role in chronic pain. For example, hypotheses have been proposed relating to the childhood origins of increased levels of psychological distress, to adult psychiatric illness.[5]

Psychogenic regional pain is a term used for "pain that patients feel in a region of the body where no peripheral cause can be found and is psychogenic in its evocation". Ruden, uses the terms "Complex Psychogenic Pain" to denote a puzzling pain picture that is not explained by standard pain models. Pain is often non-anatomical in distribution, is associated with somatosensory changes, is co-morbid with psychological problems, and presents difficulties for treatment. [1]

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Pathophysiology of pain

Pain has been described as experience with a multidimensional process with many modulating influences, given by Melzak and Wall through the Gate-Control Theory.

The neuron is capable of altering its structure and function in response to stimuli, which can be as follows:

1. Reduction in stimulation threshold that results in neurons no longer requiring stimulus to be activated.
2. Alteration in the temporal pattern of response so that transient stimuli evoke a sustained burst of activity
3. A general increase in responsiveness so that noxious stimuli produce a greater effect
4. Expansion of receptive fields, so that responses are evoked in a much wider area

These changes individually or cumulatively result in hyperalgesia, allodynia, and pain which is characteristically spontaneous, radiating, and referred.

Psychological pathogenesis

Even in the field of psychology/psychiatry, many aetiologies and psychodynamics have been related to the development of psychogenic pain. This psychoanalytical approach was first proposed by Engels in 1959 and reiterated in 1982 by Blumer and Heilbronn. [6]

In this regard, one investigation defends the point of view that patients with an increased tendency to react to stress, adverse life events, and psychopathological disorders are vulnerable to chronic idiopathic facial pain.

The family background is also important and illness in some families, and pain, in particular, tends to be regarded as of special emotional significance. The source of this may be an emotionally manipulative parent. It may be that whenever the mother, say, has a headache, her relatives are expected to pay her a great deal of attention with the result that the child soon learns to adopt the same approach. The child may have a familial tendency to a headache of some kind but will come to use the symptom emotionally and always feel that insufficient attention is given to it by others. [1]

Excluded children who experience pain and anguish wherein their parents take diminutive notice may then incline to complain unreasonably to gain consideration and for the distress of being overlooked.

Psychogenic pain is encoded during a traumatizing event where the individual cannot behaviourally express the emotional content of the event. Such encoding occurs during the emotional experience of defensive fury or fear. The situation is perceived as inescapable, hopeless, and traumatizing and is associated with the inability to take responsive action. [1]

Some psychiatrists consider conscious conflict and the patient´s difficulties to cope with aggressive drives to be the main cause in individuals with psychogenic migraine. Anxiety in many patients can be converted into a somatic symptom such as headache and when the conversion is complete, anxiety is not observed clinically. Thus, anxiety and tension states have been proposed as the basis of psychogenic headache and conflict which centers on the inability of the patient to adequately express feelings of resentment and hostility. Such feelings are turned inward and may appear as depression and or a muscle contraction headache. [1]

Adler and colleagues [1] based on the review of Engel´s studies and analysis of subgroups with and without pain, concluded that histories of child sexual abuse, important object loss, presence of a submissive parent and deflection of aggression into the self were important etiologic factors in the development of psychogenic pain.

Violon [1], assessed individuals with intractable facial pain and observed that psychogenic pain started during or after depression, most patients had been affectively deprived in infancy and frequent previous emotional stresses had preceded the onset of psychogenic pain.

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There are three ways whereby psychological factors can evoke pain:

1. By psychogenic magnification of physical pain
2. By emotional stress creating muscle tension and producing muscular pain, and
3. More specific regional pain produced by hysterical mechanisms or by anxiety.

Engels [1], a prominent psychiatrist, researcher and pioneer in the field of psychogenic pain described most mechanisms associated to psychogenic pain in the "pain prone patient" and summarized the character of the individual which is prone to suffer from psychogenic pain:

1. A prominence of conscious or unconscious guilt in which pain serves as a relatively satisfactory means of atonement. When guilt predominates, aggressive impulses are not expressed.
2. The patient has a history of suffering, of many defeats and intolerance for success.
3. Presence of a strong aggressive drive which is not fulfilled, pain being experienced instead.
4. Development of pain as a replacement for a loss at times when a relationship is threatened or lost. In such individual the location of the pain is determined by unconscious identification with a love object;
5. He or she reports stressful life events at the time the pain develops. Such stresses seem to involve an actual or threatened object loss which mobilizes feelings of helplessness and hopelessness.
6. Presence of a range of depressive effects varying from feeling helpless to cope with pain/aggression to feelings of loss and grief after deaths or separations of significant others.

Behavioral association

Pain behaviors influence and are influenced by the patient's social environment. Thus, treatment or therapy should modify pain behavior even when pain cannot be treated directly to improve function.

The prevalence of depression is higher in chronic pain patients. Theories proposed to explain this include:

1. Depression causes hypersensitivity to pain
2. Pain is a ‘masked’ form of depression.
3. Depression is caused by the stress of chronic pain.

Measurement of Pain

The intensity of pain is rather difficult to assess due to several factors. Verbal communication of pain is often difficult and two individuals may have completely different ways in which they may describe the same pain. Also, there is no direct correlation between the severity of pain and the magnitude of physiological or anatomic changes as described by clinical diagnosis. Moreover, children & infants and patients with cognitive impairment have an even greater challenge in describing their pain.

There are a few different scales available for pain assessment. One such scale to measure the intensity is the Visual Assessment Scale (VAS) – which consists of a 10 cm line which ranges from 'no pain' at 0 cm to 'pain as bad as it could be' at 10cm. Such a scale is extremely quantitative and sensitive to treatment effects, can be recorded in treatment files, and are effectively helpful in the case of children.

The McGill Pain Questionnaire (MPQ) helps to measures the sensory experience (groups 1-10), motivational-affective (groups11-15), and cognitive-evaluative (groups 16-20) qualities thereby recording the multifaceted nature of pain. The patient has to describe pain by choosing from 78 adjectives organized in 20 groups. The scale also describes the pain intensity and location.

The Multiaxial Assessment of Pain (MAP) includes the West Haven- Yale Multidimensional Pain Inventory (WHYMPI) with a 61 item questionnaire that measures pain adjustment from a cognitive-behavioral perspective. Three distinct groups of patients emerged after analysis: Dysfunctional, Interpersonally Distressed, and Adaptive Copers. Thus, evaluating the psychosocial and behavioral aspects of pain.

Quantitative Sensory Testing (QST) is a set of sensory tests based on normal and non-normal responses to various non-invasive stimuli. The QST modalities include thermal, mechanical, and electrical stimuli which selectively activate different

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sensory nerve fibers. Three major levels of sensation can describe the response to external sensory stimuli: detection threshold, pain threshold, and pain tolerance. This helps in sensory and pain evaluation done during the orofacial pain examination.

Management

Various treatment modalities tried out are [7]:

1. ***Psychotherapy or the remedial influence of mind:***

a. Cognitive-behavioral therapy - The most commonly used approach is cognitive-behavioural therapy - integration of cognitive, affective, and behavioral factors into an overall clinical picture. This includes not only actual responses but also learned responses to evoke an appropriate reaction to actual or anticipated events. How a person perceives a situation and what they expect from it are thought to be important. Cognitive-behavioral therapy -'self-management of pain' [8]

b. Self-observation Activation of self-observation is proposed as a core psychotherapy process. Self-observation entails an active scan of one's inner landscape (intentions, expectations, feelings, cognitions, and behaviors), the ability to introspect on one's thoughts, and the realization of the relation of self to one's social and cultural environment. [10]

c. Relaxation training Relaxation therapy has been suggested for many conditions. Early scientific evidence suggests that relaxation may play a role in treating anxiety, although better studies are needed that identify which approaches are most effective. Research also reports possible effectiveness for anxiety, depression, pain, insomnia, premenstrual syndrome, and headache, although this evidence is early and better studies are needed to form clear conclusions. Relaxation is generally believed to be safe when practiced appropriately, but it should not be used as the sole treatment for severe illnesses.

d. Hypnotherapy - Hypnosis interventions consistently produce significant decreases in pain associated with a variety of chronic-pain problems. Also, hypnosis was generally found to be more effective than nonhypnotic interventions such as attention, physical therapy, and education. Most of the hypnosis interventions for chronic pain include instructions in self-hypnosis. [11]

e. Biofeedback is a self-regulation technique through which patients learn to voluntarily control what were once thought to be involuntary body processes. This intervention requires specialized equipment to convert physiological signals into meaningful visual and auditory cues, as well as a trained biofeedback practitioner to guide the therapy. Using a screen such as a computer monitor, patients get feedback that helps them develop control over their physiology. Just as looking into a mirror allows one to see and change positions, expressions, etc., biofeedback allows patients to see inside their bodies, with a trained practitioner serving as a guide directing them to use the feedback to regulate their physiology in a healthy direction. [12]

Other strategies include:

1. Motivation enhancement therapy (MET) helps a patient to get more motivated. Empathy, avoiding judgmental attitudes, and not pressurizing the patient to change are most important here. Therapists should help patients become aware of their tendency for negative cognitive patterns or emotions like polarizing pattern, overgeneralization, catastrophizing, filtering or emotional reasoning pattern and motivate longterm compliance [8]

2. Pain Management Programmes (PMPs) based on cognitive and behavioral principals are the treatment of choice for people whose persistent pain adversely affects their quality of life (The British Pain Society, 2007).

A PMP aims to improve the physical, psychological, emotional, and social dimensions of a person's quality of life, working towards achieving optimal functioning and self-reliance in managing persistent pain. Pain relief is not a primary goal, although improvements in pain have been reported (Morley, 1999; Van Tulder, 2000; Guzman, 2001).

PMPs consist of education and guided practice. Education includes information on the principles and rationales of treatment, pain physiology, the psychological aspects of pain, exercise and improving function, and self-management of pain problems. The importance is of controlled practice in the use of physical, psychological and real-world methods to recover the quality of life like with exercise to improve fitness and mobility, a gradual return to goal-defined activities, cognitive therapeutic

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methods to identify and challenge appraisals, beliefs and processing biases, relaxation and distraction techniques, and communication skills.

PMPs are delivered by a multidisciplinary team of healthcare professionals working in an interdisciplinary way (Turk, 1987).

Key staff includes:
A medically qualified person with a special interest in pain management (usually a pain clinic consultant).
A chartered clinical psychologist or BABCP registered cognitive-behavioral therapist.
A physiotherapist (state registered).
Other health professionals, such as occupational therapists, nurses, and pharmacists, have skills which are extremely useful for the delivery of PMPs. [9]

2. Pharmacotherapy

a. Antidepressants – Tricyclics appear to be effective in the control of chronic orofacial pain of non-inflammatory origin and include amitriptyline, doxepin, nortriptyline, and desipramine. Tricyclics are just one therapeutic modality that can be considered in the management and treatment of chronic refractory orofacial pain that is suspected to arise from neurogenic or myofascial aetiologies. [13]
b. Antianxiety drugs – Anxiolytics and sedatives may be used for symptomatic intervention triggered in response to chronic orofacial pain. These include alprazolam, diazepam, clonazepam, chlordiazepoxide, etc.
c. Antipsychotic drugs – Maybe prescribed in pain patients with positive symptoms of psychosis during or after controlling all sensory components. [14]

Conclusion

Pain management in the orofacial region is multidimensional and anything that can relieve the pain is encouraged as a possible therapy. Improvement of quality of life is essential and the physical, as well as the psychological aspects of it, must be dealt with. The modalities mentioned in this article help to deal with this subjective issue. Pain should be dealt with as a pathology in itself and must be dealt with as such. The psychological pathophysiology of pain must be taken into consideration while treating the physical part of it.

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