

# Unilateral Orofacial Pain Type of Article - Review Article

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## ABSTRACT

Orofacial pain is a classical symptom which is representing various spectrum of disorders which includes disorders of central nervous system, musculoskeletal disorders, psychological disorders or referred pain from other sources such as brain pathologies or conditions which involving neck. By proper physical examination, accurate investigations of laboratory studies and imaging modalities, etiology of pain is identified and managed precisely with dental and medical professional as an interdisciplinary approach. This article discusses about various pain affecting orofacial region.

**KEYWORDS:** Pain, Nerve, Impulse, sensation, Headache

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## INTRODUCTION

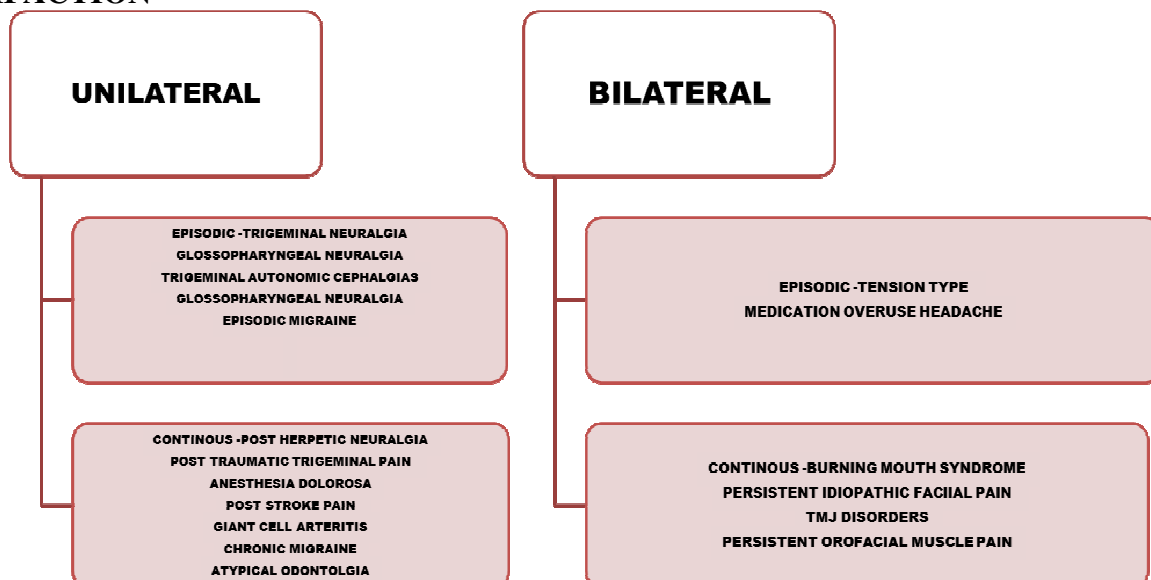
According to International Association for the Study of Pain (IASP) pain is defined as. "An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage". But many people reports pain in absence of actual pathology or tissue damage which purely of psychological pain. Nowadays providing a precise diagnosis and effective treatment in orofacial is less changing because of advent in

super imaging modalities and multiple treatment modalities.

## OROFACIAL PAIN

In the year of 1999, Zakrzewska & Hamlyn defined Orofacial pain (OFP) is defined as pain whose origin is below the orbito-meatal line, above the neck and anterior to the ears, including pain within the mouth.[1]

## CLASSIFICATION



## UNILATERAL EPISODIC PAIN TRIGEMINAL NEURALGIA

Trigeminal neuralgia is archetype of orofacial pain, in which pain follows the areas of distribution of trigeminal nerve. it is classified as classical trigeminal, secondary and idiopathic. classical trigeminal neuralgias due to vascular compression on nerve root and secondary TN is due to multiple sclerosis and idiopathic is due to unknown cause. The pathogenesis of TN is by demyelination of nerve fibres which leads to abnormal pain pathway and results in episodic pain. The pain is usually unilateral which is sharp, stabbing or electric shock like pain which lasts about 1seconds -120 seconds which is provoked by touching the trigger zones which present extraorally (ala of nose. Cheeks, area around the orbit, lips) ang aggravating by shaving, washing the face, blowing a wind.it has property of refractory period that is triggered period of attacks in minutes during which further attacks are not provoked. the latency is time period between stimulation and pain onset. The condition is diagnosed by physical examination, sensory test like corneal reflex test, by diagnostic nerve blocks using LA to differentiate from phantom pain and electrophysiologic testing and diagnostic criteria proposed by ICHD -3 included as figure -1. The management using drugs like carbamazepine, oxycarbamazepine, gabapentin, baclofen, etc. The surgical procedures include central and peripheral procedures. the peripheral procedures include peripheral neurectomy, cryotherapy, glycerol injections, at central level -radiofrequency rhizolysis, balloon compression, gamma knife surgery and microvascular decompression is performed. [2]

**Figure: ICHD3 criteria for trigeminal neuralgia**

Classical trigeminal neuralgia (CTN) ICHD-3 beta diagnostic for CTN	
A.	At least 3 attacks of unilateral facial pain fulfilling criteria B and C
B.	Occurring in one or more divisions of the trigeminal nerve with no radiation beyond the trigeminal distribution.
C.	Pain has at least 3 of the following 4 characteristics: <ul style="list-style-type: none"> <li>• Recurring in paroxysmal attacks lasting from a fraction of a second to 2 minutes.</li> <li>• Severe in intensity</li> <li>• Electric shock like shooting, stabbing, or sharp in quality</li> <li>• Precipitated by innocuous stimuli to the affected side of the face</li> </ul>
D)	No clinically evident neurologic deficit
E)	Not better accounted for by another ICHD-3 diagnosis

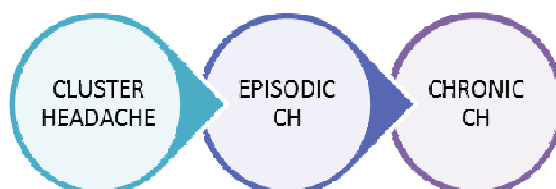
## GLOSSOPHARYNGEAL NEURALGIA

The pain in the area where glossopharyngeal nerve supplies, pain in similar to that of trigeminal neuralgia but its site is different. type of pain is sharp shooting or excruciating which common in the ear, posterior pharynx, nasopharynx, tonsil or posterior portion of tongue which is aggravating on swallowing, talking, yawning or coughing drinking both hot and cold water. Pain episodes can occur within minutes of each other and then stop entirely for days at a time. is associated with dysesthesias and/or hyperalgesia in the affected area. The common etiology of glossopharyngeal neuralgias includes vascular compression, eagle syndrome, intraoral and peritonsillar infections, sjogren syndrome. cough or gag reflex is absent. A thorough ENT examination is necessary, including a throat exam and neck palpation. All the patients should have basic laboratory evaluations include complete blood count, basic metabolic panel and erythrocyte sedimentation rate, anti-nuclear antibodies to rule out any underlying infection, inflammation, malignancy, or temporal arteritis. [3,4]

## TRIGEMINAL AUTONOMIC CEPHALGIAS

Trigeminal autonomic cephalgias are group of disorders characterized by unilateral head pain that occurs in association with ipsilateral cranial autonomic hemicrania, SUNCT, SUNA

- Cluster headache is strictly unilateral common in female after childbirth condition get worsens The pain is stabbing, excruciating in type and found in orbital and temple region which often present 1per alternate day to 8 per day in the duration of 15 -180 minutes. the condition is treated by sumatriptan injection, nasal spray, oxygen, verapamil and lithium.



- paroxysmal hemicrania, the condition is purely unilateral pain with severe attacks of pain with duration with 3 to 46 minutes along with migranious symptoms, photophobia and condition of well treated by indomethacin, cox -2 inhibitors, local nerve injections.
- SUNCT is condition which is rare unilateral headache which is evident orbital and temporal region, pain is severe stabbing and present along with conjunctival injection and tearing it lacks refractory period. the secondary (symptomatic ) SUNCT is due to lesions in pituitary lesions. the condition is treated by Jannetta procedure, Greater occipital nerve injections and Hypothalamic deep brain stimulation.

**EPISODIC MIGRAINE** Episodic migraine (EM) is characterized by those with migraine who have 0 to 14 headache days per month. [5]

### **UNILATERAL CONTINOUS PAIN POST HERPETIC NEURALGIA**

Postherpetic neuralgia is a debilitating complication of Herpes zoster. The risk of PHN increases with age. HSV-1 which is dormant in the trigeminal ganglia gets reactivated by stress, UV light or menstruation, HSV -1 usually affects the area supplied by trigeminal nerve. Paradoxically, areas of the skin that lack normal sensitivity to touch may be associated with increased pain. Light touch is perceived as pain, a phenomenon called *allodynia*. It is not uncommon for the pain of PHN to interfere with sleep and recreational activities and to be associated with clinical depression. Acyclovir and famicyclovir is treatment of choice [6]

### **POST TRAUMATIC TRIGEMINAL PAIN**

Painful post-traumatic trigeminal neuropathy (PTTN) may be uni- or bilateral condition affecting oral or facial pain occurs secondary to peripheral injury of the trigeminal nerve, following orthognathic surgery, facial trauma, avulsion of tooth or endodontic treatments. Pain is classically continuous fluctuating in intensity, presenting as burning, pricking, crushing or electric-shock-like pain, often associated with neurological signs.

### **ANESTHESIA DOLOROSA**

Anesthesia dolorosa is an uncommon deafferentation pain that can occur after injury to the trigeminal nerve due to trauma or surgery. The pain is spontaneous signals without nociceptive stimuli. Anesthesia dolorosa is a chronic pain condition where patients experience numbness in facial areas but at the same time also have constant severe pain. This injury arises from injuries to the first order trigeminal nerve, thus causing second-order neurons on the trigeminal pain pathway to spontaneously fire, producing pain signals without nociceptive stimulus. Anesthesia dolorosa is characterized by persistent neuropathic pain with numbness along the territory of the respected nerve damage. The causes for nerve damage and the traumatic event can be mechanical, thermal, chemically induced, or from radiation

### **POST STROKE PAIN**

Pain after stroke is a common symptom that is poorly understood by many practitioners. Central Post-Stroke Pain (CPSP) is a term used to describe the symptom of pain arising after a stroke that is secondary to a lesion within the central nervous system. The pain is aching, dull, and throbbing to sharp, stabbing, shooting, or burning pain. The onset of CPSP can be quite variable as well, most commonly beginning 1 to 3 months after stroke, with the majority of affected patients developing symptoms by 6 months<sup>5</sup>. Additionally, CPSP can be particularly difficult to evaluate since it can be accompanied by other pain syndromes including those resulting from pathology outside of the central nervous system. The classic theory holds that CRPS is the result of local hyperactivity of the sympathetic nervous system, pain also associated with spas city. The treatment includes baclofen, botolinium neurotoxin and nerve blocks.[7]

### **GIANT CELL ARTERITIS**

Temporal arteritis (TA), also called giant cell arteritis (GCA) or cranial arteritis, is a systemic inflammatory vasculitis of medium and large-sized arteries occurring most frequently in adults. Giant cell arteritis results from immune-mediated inflammatory changes in the vessel wall. Inflammation of medium-large-sized arteries originating from the arch of the aorta is the hallmark of the disease. GCA is characterized by innate and adaptive immune system dysregulation, and the pathophysiology is thought to involve the body's inappropriate response to vascular endothelial injury. The American College of Rheumatology (ACR) has

developed a set of criteria for diagnosing temporal arteritis Three of the five criteria must be present to make the diagnosis. These include:

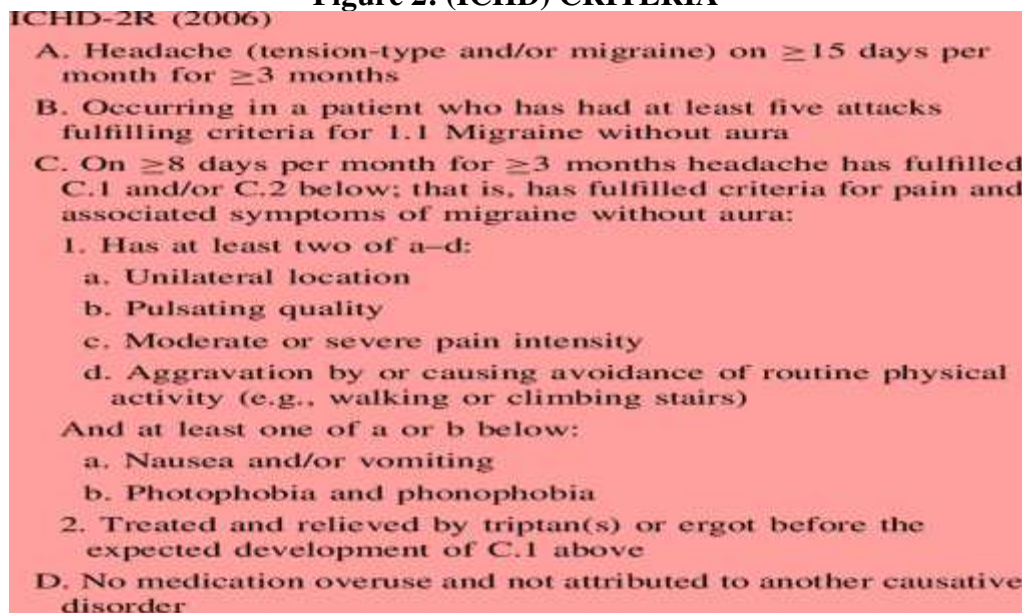
- Age greater than or equal to 50 at the onset of symptoms
- New headache

- Temporal artery abnormalities such as tenderness of the superficial artery or decreased pulsation
- ESR greater than or equal to 50 mm/hr
- Abnormal artery biopsy, including vasculitis, a predominance of mononuclear cell infiltration or granulomatous inflammation, or multinucleated giant cells.
- Corticosteroid is treatment of choice [8]

## CHRONIC MIGRAINE

Chronic migraine, a condition characterized by the experience of migrainous headache on at least 15 days per month, is highly disabling.

**Figure 2: (ICHD) CRITERIA**



The pathophysiology includes the early vascular theory of migraine stemmed from the hypothesis that initiation of migraine attacks occurred via activation of perivascular nerves innervating major cerebral vessels currently available pharmacotherapies that have demonstrated efficacy in chronic migraine prophylaxis are onabotulinumtoxinA (BoNT-A), topiramate and newly approved CGRP targeted monoclonal antibodies

## ATYPICAL ODONTOLGIA

This is purely psychological in origin. This form of deafferentation or phantom tooth pain. the pain usually starts after the dental procedures like endodontic treatment or extraction. the AO is form of vascular, neuropathic or sympathetically maintained pain. some suggested that it is strongly associated with depressive, somatization and conversion disorders. the pain is constant, dull aching without apparent cause, laboratory studies and radiographic studies remain normal. The most frequent affects the women in fourth and fifth decades of life. the tricyclic antidepressants like amitriptyline, nortriptyline, desipramine, gabapentin and pregabalin in moderate doses eliminates the pain.

## CONCLUSION

Orofacial pain has now become more problematic among the general population. The anatomic complexity of the orofacial region contributes to

challenging diagnosis and treatment for many clinicians. A better understanding of underlying physiological mechanisms on orofacial pain may support to improve a clinician's clarification and perception in the aspect of non-odontogenic or dental pain origin.

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