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Anatomy of paraesthesia in the facial region in a selected population of subjects with Craniomandibular Disorders and Occipital Neuralgia: A comparison study.

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Abstract:
Introduction: *Paraesthesia is a rare neuropathic phenomenon described in the orofacial region. However, in the presence of occipital neuralgia, pain and paraesthesia in the teeth and face respectively, are reported frequently. There is little information about these symptoms.* ***Goals:*** *Evaluate anatomic areas where paraesthesia is reported by Craniomandibular Disorders and Occipital Neuralgia subjects as compared to subjects with Migraine and Tension-Type Headache.* ***Methods:*** *Clinical examination, palpation of joint and muscles, questionnaires, self-report, clinical examination and history of the chief complaint were used in 80, 85 and 30 individuals with Craniomandibular Disorders and occipital neuralgia, Craniomandibular Disorders and tension-type headache and Craniomandibular disorders and migraine, respectively in order to assess the anatomic sites reported with paraesthesia and pain referred to the teeth. Data were analyzed using Kruskal-Wallis and Fisher´s exact test.* ***Outcome:*** *Most common sites reported with paraesthesia in subjects with Craniomandibular Disorders and occipital neuralgia were the upper or lower lip (5/80=6,3%), face (21/80=26,3%), tip of the tongue (9/80=11,3%), mandible, maxilla or nose (5/80=6,3%) vertex (80/80=100%), and inside the mouth (2/80=2,5%). Pain referred to the teeth was reported by 39/80=48,8% subjects with CMDs and occipital neuralgia, by 24/85=28,2% subjects with Craniomandibular disorders and tension-type headache and by 7/30=23,3% subjects with Craniomandibular disorders and migraine. Thus, pain referred to the teeth was observed much more frequently in the subgroup with Craniomandibular Disorders and Occipital Neuralgia.* ***Conclusion:*** *Paraesthesia was more frequently reported by subjects with Occipital Neuralgia. The frequency of pain referred to the teeth was higher in those with occipital neuralgia but was also reported by the subgroups presenting with Tension-Type Headache and Migraine.*

Key Words: *Occipital neuralgia, Tension-type headache. Migraine. Pain referred to the teeth.*

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I. Introduction

Occipital Neuralgia (ON) is a common and frequently unrecognized or misdiagnosed severe headache characterized by pain restricted to the sensory fields of the greater and/or lesser occipital nerves, usually manifesting pain radiating to distant areas innervated by the trigeminal nerve (TN)[1]. Pain in ON is usually described as very severe, lancinating, pulsating, shooting, burning, intermittent, shock-like, sudden, deep, and short-lasting (usually seconds or minutes) usually associated with paraesthesia in the region innervated by the greater and lesser occipital nerve[2]. The pain is not only rich in clinical descriptions but mysterious in the sense that it is usually associated not only with Craniomandibular Disorders (CMDs), for instance, intense pain in the temporomandibulares joints (TMJs), but with pain referred behind, below or in the upper region of the orbits.

CMDs are medical terms used to describe a set of signs and symptoms occurring in the TMJs and masticatory muscles usually of musculoskeletal origin. Patients usually describe a pain complaint, joint noises, difficulties to perform normal jaw movements and headache of musculoskeletal origin. On clinical palpation, the examiner observes tenderness to palpation of the masticatory muscles[3].

Paresthesia is considered a functional disorder affecting the sensory pathways somewhere between the peripheral sensory nervous system and the sensory cortex[4] usually associated with neuropathic pain. Paraesthesia is a common characteristic of ON. Patients report sensations of numbness behind the head, and they described pain as burning in the cervical region and a strange sensation in areas innervated by the fifth cranial nerve[4]. Paraesthesia in ON and in other neuropathic disorders, is currently considered as abnormal sensation including feelings of pins and needles, tingling, pricking or crawling under the skin[5]

In the last few years, scientist all over the world have recognized the complexities of pain in ON, its mechanisms and even the fact that pain and abnormal nerve sensations can be reported in areas very far from the origin of the greater and lesser occipital nerves (GON, LON). However, there is scarcity of data about epidemiological studies relating ON with abnormal sensations in the face and basic neurophysiological mechanism explaining the phenomenon of paraesthesia referred from the cervical region to distant areas in the face, jaws, mouth and teeth. There is an enormous gap between the clinical disorder described in the upper neck and those clinical manifestations reported in distant anatomic structures including pain referred to the face and abnormal sensations in the same anatomic area due to abnormal function of greater occipital nerve (GON) and or lesser occipital nerves (LON). Because there is paucity of clinical investigations, this study was develop to:

1.Test the hypothesis that because ON is a severe neuropathic pain in which the GON makes connections with adjacent cranial nerves, subjects affected by this disorder present higher frequency and wider anatomic distribution of paraesthesia in the territory of the trigeminal nerve as compared to subjects demonstrating signs and symptoms of Tension-Type Headache (TTH) and Migraine (MIG);

2.Test the hypothesis that pain referred to the teeth occurs more frequently in subjects with ON as compared with those with TTH and MIG;

3.Discuss the mechanism of dental pains in ON, TTH and MIG.

II. Methods

Patients referred consecutively to UNIRG University, School of Dentistry, Orofacial Pain (OFP) Unit are usually evaluated using a comprehensive protocol described as follows: Taking the history and characteristics of the chief complaint, examination and palpation of muscles and joints, use of biomechanical tests to determine the type of internal derangement of the TMJs (TMJs-ID),for instance capsulitis, disk-attachment pain, use of questionnaires and clinical examination to assess presence and severity of bruxing behavior (BB) and other oral jaw behaviors, use of an additional questionnaire to assess headaches including referred myofascial headache, TTH, ON, and MIG. Once the comprehensive examination and data gathering are completed, data are immediately stored in a database for future research and exploration of a particular variable of interest. Patients are informed that their data may be used for future research and the benefits of doing so are also explained to the patient. Patients are also informed that anonymity is guaranteed to all subjects and that names are not used in the investigation. This approach may or may not involve conservative treatment at the institution as the decision to treat depends exclusively on the patient. In the last two months 80 medical and dental records of subjects presenting with ON, 85 with TTH and 30 with MIG were consecutively retrieved to form the subgroups ON (n=80), TTH (n=85) and MIG (n=30) for evaluation regarding the presence of paraesthesia and pain referred to the teeth.

Inclusion Criteria for CMDs: A complaint of pain in the masticatory system, presence of joint noises, tenderness to palpation of the masticatory muscles, difficulties to perform normal jaw movements and headaches of musculoskeletal origin, for instance, headache as a result of referred pain from the masseter, sternomastoid or trapezius muscle.

Inclusion Criteria for ON: Unilateral or bilateral headache located in the upper cervical area in the proximities of the occipital protuberance, described as paroxysmal, intermittent or not, shooting, stabbing and burning accompanied by numbness in the cervical and vertex areas. Cervical and intense pain referred behind and/or over the orbit, sometimes to the face and/or teeth presenting with a rapid onset and usually associated with dizziness and ear symptoms. Presence of a pain generating zone between the nuchal line and an area below and medial to the mastoid process.

Inclusion Criteria for referred dental pain: Referred pain to the teeth was considered as such when there was no demonstrable dental lesion at the time of examination, when one or more dentists had examined the patient previously reporting no dental lesion explaining the pain and if the patient reported that tooth pain occurred following headache.

Inclusion Criteria for MIG: The presence of migraine was accepted in any patient describing his or her pain as unilateral, throbbing, moderate to severe in intensity, aggravated by physical activity, patient´s report of nausea and vomiting, and sensitivity to light and sound.

Inclusion criteria for TTH: Headache described as bilateral, mild or moderate in intensity, occurring in the frontal and temporal areas and occasionally in the cervical areas, continuous, lasting hours, sometimes with nausea but without vomiting, described as dull, constant, pressure, construction or band-like

Exclusion criteria: Patients were not included in this investigation and their medical records were not stored in the database when their data was incomplete. Those demonstrating severe psychological and or psychiatric disorders, those unable to respond properly to questionnaires and finally, those with some form of epilepsy, for example, Parkinson disease were excluded from the current study

Statistical analysis

Age differences were analyzed using Kruskal-Wallis statistics. Fisher´s exact test was used to analyze statistical differences when a single variable was compared in two groups. Significance was accepted if $p<0,05$.

III. Outcome

This investigation evaluated an experimental subgroup of 80 ON subjects and two control comparison subgroups. One Control subgroup (n=85) was constituted by subjects presenting with TTH signs and symptoms and another Control subgroup was formed by 30 subjects demonstrating characteristics of migraine (MIG subgroup). Mean age in the ON subgroup was about 40,4 (SD=10,8, range=15—75), 29,7 (SD=11,0, range=14—60) in the TTH subgroup and 33,8 (SD=11,5, range=14-61) in the MIG subgroup. There was a statistically significant difference when age was compared among the experimental and the two control subgroups. Kruskal-Wallis statistics ($p<0,0001$), but a statistically significant difference was observed only when some pairs of subgroups were compared: ON subgroup versus TTH subgroup ($p<0,001$); ON subgroup versus MIG subgroup ($p<0,05$); TTH subgroup versus MIG subgroup ($p>0,05$). There were 78 females (97,5%) in the ON subgroup, 76 females (95%) in the TTH subgroup and 31 females (97%) in the MIG subgroup. Thus, females predominated in the experimental and control subgroups. See Table 1 for additional details.

The frequencies of some symptoms indicating paraesthesia are described as follows: Upper and/or lower lip 5=6,3%, 1=1,1% and 0=0% in the ON, TTH and MIG subgroups respectively; face 21=26,3%, 3=3,5% and 5=16,7% in the ON, TTH and MIG subgroups respectively; tip of the tongue 9=11,3%, 1=1,1%,and 2=6,7% in the ON, TTH and MIG subgroups, respectively; mandible, maxilla and/or nose 5=6.3%, 0=0%, 0=0% in the ON, TTH and MIG subgroups, respectively; vertex 80=100%, 1=1,1% and 0=0% in the ON, TTH and MIG subgroups, respectively; inside the mouth 2=2,5%, 0=0% and 2=6,7% in the ON, TTH and MIG subgroups, respectively; pain referred to the teeth was reported by 39=48,8%, 24=28,2% and 7=23,3% of the ON, TTH and MIG subgroups, respectively. See table 2 for further details.

The Fisher´s exact test was used to compare statistically significant differences in the frequencies of paresthesias and reported dental pains in pairs of subgroups with ON, TTH and MIG. Statistically significant differences were observed only in some subgroups with some symptoms, as follows: Facial paraesthesia subgroups ON and TTH ($p<0,0001$); facial paraesthesia TTH and MIG ($p<0,02$); paresthesia in the tip of the tongue ON and TTH ($p<0,007$), paraesthesia in the mandible maxilla or nose ON and TTH ($p<0,02$); vertex paraesthesia ON and TTH subgroups ($p<0,0001$), ON and MIG ($p<0,0001$); toothache ON and TTH ($p<0,01$), ON and MIG ($p<0,01$). See Table 3 for additional details.

IV. Discussion

1.Many and different **anatomic areas with paraesthesia** were reported by ON subjects in the current investigation. Anatomic areas with paraesthesia reported by ON subjects included the upper and lower lip, face, tip of the tongue, mandible/maxilla/nose, vertex and inside the mouth. Because paraesthesia was reported more frequently by ON subjects, it seems reasonable to infer that paraesthesia is more frequently associated with damage to neural structures resulting in neuropathic pain in ON. These observations and assumptions are in part in line with one investigation[6] indicating that damage to the mental nerve called "mental nerve neuropathy" may result in paraesthesia to the chin and lower lip. Further, neuropathic pain in ON is the result of injury or disease of sensory nerve fibers due to many causes including trauma and ischemia, infections and even compression. Symptoms in neuropathic disorders include the presence of a neuropathic area (for instance the pain generating area in ON), pain and altered sensations including paraesthesia[7].

In the current research, paraesthesia located in the left or right side of the face was reported very frequently in ON subjects as compared to those demonstrating signs and symptoms of TH and MIG. Thus, the outcome in the current investigation is endorsed by another study[8] reporting that cheek paraesthesias or subjective hypaesthesia occurs in subjects with ON and resolve with an occipital nerve block. Referred facial paraesthesia in ON subjects is explained by the convergence of the C2 afferents supplying the greater occipital nerve and trigeminal afferents on second order neurons located in the trigeminocervical complex[8]. Abnormal growth and proliferation in acoustic neuroma in the brainstem may cause toothache and numbness in the tongue and lip and a burning sensation laterally in the tongue[9]. ON is usually associated with hemifacial sensory changes including hypesthesia and paraesthesia[10]. Further, hemifacial pain involving all divisions of the trigeminal nerve and caused by pathological vascular contact on the greater occipital nerve has been reported recently[11]. It is very likely that chronic compression of the GON, LON or both may cause some degree of demielinization of such nerves. In this regard it has been reported that perioral facial numbness may be cause by such disorder such as demyelinating disease such as multiple sclerosis, tumor and infection[12].

Ipsilateral hemifacial sensory changes associated with ON reach the V1, V2 and even V3 divisions of the trigeminal nerve[11]. ON is thus characterized by sharp paroxysmal severe pain, associated tenderness and sensory disturbances manifested far from the original source of pain and in many anatomical areas in the

territory of the trigeminal nerve[13]. Additional support to findings the current investigation, comes from a previous study[14], indicating that numbness was a descriptor used with some frequency by patients presenting with signs and symptoms of ON.

Because in the current investigation subjects reported paraesthesia in the upper and/or lower lip, face, tip of the tongue, mandible, maxilla or nose, vertex and inside the mouth, it seems that paresthesia in damaged neural structures of the GON and/or LON is referred to a wide anatomic zone innervated by the trigeminal nerve. Thus, this outcome is echoed by the investigation carried out by Son and Choi[11] indicating that hemifacial sensory changes in ON may affect the V1, V2, and V3 divisions of the trigeminal nerve. However, this neurophysiological disorder is not reported by all individuals presenting with ON and does not manifest exactly in the same anatomical region innervated by the trigeminal nerve. The selective anatomic presentation of paraesthesia in the facial region of ON individuals, should be investigated in the near future.

2. Referred dental pain was reported more frequency by ON subjects as compared to TTH and MIG ones. It may be that **damage to the nerve, more severe pain**, and **central/peripheral sensitization** associated with intense, intermittent pain operating in ON, may be responsible for pain referred to dental structures. Based on patients report, in the current study pain occurred in teeth innervated by both the second and third divisions of the trigeminal nerve. Neuropathic toothache as a result of ON can be described as episodic and continuous. The outcome in the current investigations is in line with one study, asserting that episodic and continuous toothache are pain disorders having an origin in complex neural structures which manifest as constant, ongoing and unremitting pain than can be felt in the teeth[15] Even thought ON patients are not aware of some mechanical processes associated with compression of the greater or lesser occipital nerve, some of them report a history of traumatic events in the cervical area that occurred some years ago. Such report confirms the general opinion that trauma and or compression to the GON or LON may be an etiological factor for the neuropathic manifestations including referred toothache in ON.

These observations are congruent with one study informing that patients reporting continuous neuropathic pain usually report a history of overt trauma[16] to the teeth and / or to the cervical structures. Even though ON occurs in an anatomic area very distant from the masticatory system, there are many manifestations including nondental pain, paraesthesia and dental pains as a consequence of some neurophysiological mechanisms in ON. These observations are endorsed by one investigation[17] reporting that toothaches of non-dental origin is not dental pathology, rather it is the pain referred to the dentition from distant anatomic locations. Because in the current investigation it was found that pain referred to the teeth in ON subjects was reported together with paraesthesia, such observation is congruent with one investigation[17] reporting that in neuropathic pain, toothache may occur together with abnormal sensations including paraesthesia, dysaesthesia and/or anaesthesia. These observations are also consonant with another investigation[18] reporting that neuropathic tooth pain can be reported exclusively into the mouth with no other obvious pathology of disorder. Thus, tooth pain cannot be attributed to local pathology, infection, extraction or loss of dental substance. Toothache and numbness may be observed in disorders (for instance, acoustic neuroma) in which there is abnormal proliferation of neural tissue which may compress another neural structures[9].

Because in the current investigation, pain referred to the teeth was observed very frequently in ON and with some frequency in **TTH and MIG,** this outcome is in agreement with one investigation[7] reporting that dental pains can present in many guises replicating signs and symptoms observed in some types of headaches and other common disorders. Migraine may also occur in the maxillary (V2) and in the mandibular (V3) teeth, base of the nose and medial wall of orbit and neck[7] Alonso[19] published a clinical case of a 43-year-old white man describing a dull, aching, throbbing deep pain in the left maxillary molar region with a history of previous root canal, extraction and occlusal splint treatment. The case was finally diagnosed as a clinical case of migraine with referred pain to an upper tooth. There are reasons to believe that pain referred to the teeth occurs more frequently in cases of myofascial pain and vascular headaches including migraine, cluster headache and paroxysmal hemicranias. Migraine headaches may be associated with referred pain to multiple anatomic sites including temporal, supraorbital, frontal, parietal, auricular, occipital, upper and lower teeth[20]. Facial pain with the characteristics of a migraine including nausea, vomiting, photofobia and burning referred to the maxillary regions for which many dental treatment may be attempted, has been reported recently[21]. This is a more rare type of headache which generates confusion in the dentist and even the specialist in orofacial pain. Some migraine patients are usually referred to a dental clinic for professional evaluation associated with episodic dental pain but in whom the diagnosis of facial migraine may be established[22]. Migraine symptoms may be reported in the midface region without involvement of the first division of the trigeminal cranial nerve[15].

3. **Mechanisms** of referred toothache. Even though ON, TTH and MIG are very different types of headaches, various mechanisms may lower the pain threshold in all these types of headaches, rendering teeth more vulnerable to pain of non dental origin. However, damage to the nerve, central and peripheral sensitization, severer pain and referral mechanisms are more important in the case of ON. On the other hand, severer pain,

central and peripheral sensitization seems to be more important in the case of MIG whereas toothache in TTH subjects is influenced mostly by the mechanism of referral from trigger points (myofascial pain), severer pain and central and peripheral sensitization as many TTH subjects describe their pain as moderate and severe. The highest frequency of referred toothache (48,8%) was observed in the ON subgroup and the lowest in the MIG one (23,8%). Essential to such a disparity is the concept that "different and similar mechanisms" operate in the three types of headaches to lower the nociceptive threshold for pain and for the mechanism of referral to distant anatomic areas in the masticatory system.

In the case of TTH, various mechanism of pain in a distant anatomic zone from the original source of pain may be responsible for producing non-odontogenic toothache. Excitable trigger points with nociceptors presenting a lower pain threshold, more intense pain and thus, central and peripheral sensitization are certainly implicated in the mechanisms of pain referred to the teeth in the case of TTH. Most likely, trigger points in the masseter, temporal, sternomastoid and trapezius in TTH subjects with susceptible or excitable nociceptors may cause local and referred pain to the teeth.

Even though TTH is described as mild and moderate, some patients describe it as intense thus, increasing the likelihood of central excitatory effects and of pain referred to the teeth. Supporting this point of view, one study[**15]** indicates that skeletal muscle trigger points are well recognized in the literature and that the trigger point is a localized hyperexcitable, firm, nodule that is capable of to causing pain distant from the original source including the face, head and teeth. A previous investigation[3] also reported a high prevalence of pain referred to the teeth in a subgroup of 102 subjects presenting with signs and symptoms of TTH. The outcome in the current investigation is also echoed by another study[23] reporting that TTH may also cause pain referred to the teeth. Subjects with muscular disorders including those with myofascial characteristics, TTH and or with neck disorders and others with trigger points in the temporal and/or masseter muscle usually complain of referred pain to single and/or multiple teeth. Even though the origin of TTH is the presence of trigger points and or other cervical musculoskeletal disorders, TTH may also occur together with multiple trigger points in the masticatory muscles thus, increasing the likelihood of pain referred to the teeth. The presence of trigger points in the masticatory muscles concomitant with TTH increases the likelihood of pain referred to the teeth and thus, contributes to a history of single or multiple failed endodontic treatments. Myofascial pain may occur concomitantly with TTH and patients presenting characteristics of both TTH and myofascial disorders frequently present a history of dental pain and sometimes seek endodontic treatment[23].

Referred pain to the teeth is associated with a variety of neurophysiological mechanism including more intense pain, presence of multiple trigger points, damage to the nerve and central and peripheral sensitization. Severer pain may or may not be associated with tissue damage, inflammation and plastic changes in the neural tissues. More severe and chronic pain is more likely to cause pain in distant anatomic areas even when they are innervated by a different nerve. Pain referral is more likely to be observed in patients with chronic musculoskeletal disorders including CMDs, fibromyalgia and myofascial pain. One type of common pain referral is when severe pain and inflammation causes ipsilateral headache. When multiple trigger points are found in the masseter, temporal, sternomastoid and trapezius muscles, the information from these trigger points constantly bombard the SNC causing pain referred to the head, face and even teeth. Regarding tissue damage and inflammation, the most common cause of ON is chronic and persistent compression of the greater and/or lesser occipital nerves. Such damage may cause nerve demyelinization, excessive signal convergence and activation of alternative pain pathways and subnuclei. Thus, resulting in referred pain to the frontal, temporal, face, areas including the teeth. This phenomenon is frequently observed in cases of ON. More intense and chronic ON is more likely to sensitize second order trigeminovascular neurons located in the medullary dorsal horn and thus, cause referred pain to areas innervated by the trigeminal nerve[24] in this case, the central trigeminovascular neurons develop hypersensitivity in areas representing the periorbital skin[24]. Because migraine is a very intense headache, usually chronic, the same process occurs in this type of headache. Thus, it is very common to observe migraine associated referred pain to the maxilla and to the upper teeth. .

V. **Conclusion**

Based on data on paraesthesia and pain referred to the teeth in three different headache types, and considering the limitations of a cross – sectional retrospective investigation, the following conclusions are inherent in this study:

1. Referred paraesthesia in ON cases was reported to occur in a wide anatomic area innervated by the fifth cranial nerve, including the lip, face, tip of the tongue, mandible, maxilla or nose and inside the mouth;

2.Paraesthesia was reported more frequently by ON subjects, but TTH and MIH subjects also reported this disorder;

3.Paraesthesia was more frequently reported in the face by ON, TTH and MIG subjects

4.Pain referred to the teeth was reported much more frequently by ON subjects, but many TTH and MIG subjects also reported this pattern of pain.

5.More refined questionnaires and use of a larger samples, will assist the researcher in determining more precisely the anatomy of referred paraesthesias and pain referred to the teeth. Thus, new studies are mandatory in this field to better illuminate the true nature and mechanisms of referred paraesthesia and pain referred to the teeth,

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Table 1: Social and Demographic data in subjects with ON (n=80), TTH (n=80) and MIG (n=30).

	ON=80	TTH=85	MIG=30
AGE			
Mean	40,4	29,7	33,8*
SD	10,8	11,0	11,5
Range	15-75	14—60	14—61
GENRE			
Females	78=97,5%	78=92%	29=96,7%
Males	2= 2.5%	7=8%	1= 3,3%
Totals	80=100%	85=100%	30=100%

*Kruskal-Wallis statistics with Dunn´s test ($p<0,0001$): ON versus TTH ($p<0,001$): ON versus MIG ($p<0,05$); TTH versus MIG ($p>0,05$).

Table 2: Data on paraesthesia and toothache in different anatomic areas in the subgroups with ON (n=80), TTH (n=85) and MIG (n=30).

ANATOMIC AREA	SUBGROUPS					
	ON=80		TTH=85		MIG=30	
	n	%	n	%	n	%
Upper/lower lip	5	6,3	1	1,1	0	0
Face	21	26,3	3	3,5	5	16,7
Tip of the tongue	9	11,3	1	1,1	2	6,7
Mandible/maxilla/nose	5	6,3	0	0	0	0

Vertex	80	100	1	1,1	0	0
Inside the mouth	2	2,5	0	0	2	6,7
Dental pain	39	48,8	24	28,2	7	23,3

Table 3: Results comparing different frequencies of paraesthesia and dental pains in different headache subgroups using Fisher´s exact test.

PARAESTHETIC ZONE	SUBGROUPS	Fisher´s exact test	Significant?
Upper/lower lip	ON and TTH	p=0,10	No
	ON and MIG	p=0,32	No
	TTH and MIG	p=1,000	No
Face	ON and TTH	p<0,0001	Yes
	ON and MIG	p=0,32	No
	TTH and MIG	p<0,02	Yes
Tip of the tongue	ON and TTH	p<0,007	Yes
	ON and MIG	p=0,72	No
	TTH and MIG	p=0,16	No
Mandible/maxilla/nose	ON and TTH	p<0,02	Yes
	ON and MIG	p=0,32	No
	TTH and MIG	*	*
Vertex	ON and TTH	p<0,0001	Yes
	ON and MIG	p<0,0001	Yes
	TTH and MIG	p=1,000	No
Inside the mouth	ON and TTH	p=0,23	No
	ON and MIG	p=0,29	No
	TTH and MIG	p=0,06	No
Toothache	ON and TTH	p<0,01	Yes
	ON and MIG	p<0,01	Yes
	TTH and MIG	P=0,81	No

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