

Incidence of 'headache attributed to temporomandibular disease' in patients with clicking sound in the region temporomandibular joint

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Introduction

We aimed to investigate the headache complaint and features in patients referred to ear nose throat clinics with pain in the temporomandibular joint (TMJ) region.

Materials and methods

Forty-seven patients with complaints of a clicking sound in the TMJ region and pain were included in our study. Patients completed a questionnaire on the headache and the nature of the pain. The patients were asked to mark the level of pain on a visual analogue scale.

Results

Of a total of 47 patients, 28 were women (59.6%) and 19 were men (40.4%); their age ranged from 19 to 56 years (mean=30.5±9.8 years). There were 33/47 patients with cephalalgia in the head region, except TMJ disorders (70.2%); 12 of these were bilateral and 21 were unilateral. In all, 14/47 patients described pain only in the TMJ region (29.8%). Four patients described at least one experience of jaw locking in their life time (4/47). Visual analogue scale scores of the patients were 3.9±1.7. The nature of the pain was also analyzed.

Conclusion

TMJ 2014 consortium network showed that headache attributed to TMD may be associated with cephalalgia. The rate of headache is higher in patients with TMJ disorders. TMJ disorders should also be kept in mind in the differential diagnosis of cephalalgia considering the quality of life of patients.

Keywords:

cephalalgia, quality of life, temporomandibular joint

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Introduction

Temporomandibular joint (TMJ) is a joint located in the front of the external ear that allows movement of the lower jaw joint. TMJ consists of dense fibrous tissue and an articular disk between condyles of the mandible and the mandibular fossa of temporal bone [1]. The joint is surrounded by ligaments and muscles. Disorders of TMJ can arise from joint to chewing muscles.

TMJ disorders are observed at a frequency of 5–16% in the community. The incidence of the disease is more common in women and increases with age [2].

Disorders of TMJ may be related to intra-articular diseases or extra-articular diseases. A clicking sound can be heard over the joint during palpation because of disorders of the joint. There is a certain degree of disk displacement with patients with a clicking sound in the joint.

Disorders of TMJ can lead to complaints and different symptoms in clinical practice. Headache is one complaint. A description of the subheader of 'headache

attributed to temporomandibular disease' is provided in the 2014 pressed TMJ diseases research committee report [3]. We aimed to investigate the headache complaint and specialties in patients referred to ear nose throat clinics with a clicking sound and pain in the TMJ region.

Materials and methods

Patients with complaints of a clicking sound in the TMJ region and pain around the head were included in our study. Ear nose throat, neurological, and dental examinations were performed in all patients. Patients with a history of any neuropsychological, chronic ear, and dental problems were excluded from the study. Patients with chronic otitis media, tympanic membrane perforation, and external otitis were excluded from

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the study. Patients with connective tissue rheumatic disease (rheumatoid arthritis) and a history of any ear/TMJ surgery were excluded from the study. TMJ was investigated radiologically by transcranio-oblique lateral graphy. Assessments of sedimentation, C-reactive protein, and hemoglobin were carried out. We included a total of 47 patients in our study.

Written informed consent was obtained from each patient following a detailed explanation of the objectives and protocol of the study, which was carried out in accordance with the ethical principles stated in the Declaration of Helsinki and approved by the institutional ethics committee. Patients completed a questionnaire on their headache and the nature of the pain.

Patients was asked to score the level of pain on a visual analogue scale (VAS) during pack removal. VAS was created as a column of 10 cm in length on the directives has not been made. The lower end of the column represented no lack of pain and the upper end of the column represented the most severe pain as reported. The patients were instructed on how to use a VAS. The values marked on the scale were measured in millimeters.

Results

Of a total of 47 patients, 28 were women (59.6%) and 19 were men (40.4%); their ages ranged from 19 to 56 years (mean=30.5±9.8 years).

Laboratory tests, blood biochemistry tests, sedimentation, and C-reactive protein tests were normal.

Durations of symptoms in patients are shown in Table 1. In our study, in 42/47 patients (89%), symptoms lasted more than 1 month. The nature of the pain was also analyzed. The nature of pain also varied with region. We have described the nature and localization of pain in Tables 2 and 3.

VAS scores of the patients were 3.9±1.7.

Four patients described at least one experience of jaw locking in their life time (4/47) (8%). Two of these patients were treated successfully with muscle relaxants and anti-inflammatory medications. Reduction therapy of the jaw in hospital was performed in the other two patients. None of the patients had limited opening in TMJ.

In all, 33/47 patients described cephalgia in the head region, except TMJ disorders (70.2%). Twelve of

Table 1 Duration of pain and the disease

Duration	Number (n)
Less than 1 month	4
1–6 months	13
6–12 months	13
1–3 years	12
More than 3 years	5
Total	47

Table 2 Location and side preference of the unilateral pain

Region	Unilateral cephalgia	Nature of pain
Temporal region	19	17 sharp, 2 blunt
Parietal region	9	6 sharp, 2 blunt, 1 generalized
Frontal region	4	2 sharp, 2 blunt
Occipital region	3	3 generalized
Total	21	

Table 3 Location and side preference of the bilateral pain

Region	Bilateral cephalgia	Nature of pain
Temporal region	11	9 sharp, 2 blunt
Parietal region	6	5 sharp, 1 blunt
Frontal region	2	2 sharp
Occipital region	2	2 generalized
Total	12	

these were bilateral and 21 were unilateral. Regions of cephalgia are described in Table 2. A total of 14/47 patients described pain only in the TMJ region (29.8%). We found that headache in the temporal region has higher rates in TMJ disorders. In all, 19/21 (90%) of unilateral headaches and 11/12 (91%) of bilateral headaches involved headache in the temporal region. A total of 9/21 (42%) patients had headache in the parietal region unilaterally and 6/12 (50%) patients had bilateral headache in the parietal region. Frontal region headaches were present in 4/21 (19%) unilateral and 2/12 (16%) in bilateral headaches. Occipital region headaches were present 3/21 (14%) in unilateral patients and 2/12 (16%) in bilateral headaches.

Discussion

Diseases of TMJ are chronic disorders. Pathology in the joint and disk can progress over the years. With progression of the disease, painful joint/jaw movements may increase and a clicking sound can be heard by the patient. Joint and jaw immobility can develop in later stages of the disease.

In all, 42/47 (89%) patients with symptoms for more than 1 month were included in our study.

TMJ disorders may occur in five different ways in clinical practice [3].

- (1) Local myalgia.
- (2) Myofacial pain.
- (3) Myofacial pain with referral.
- (4) Arthralgia.
- (5) Headache attributed to TMD.

One of these disorders can be found in 40–60% of individuals in the community [2]. A total of 3–7% of patients in this population require treatment. We investigated the ‘headache attributed to TMD’ group in our study.

TMJ disorders are classified into six pathways in the consortium network [3].

- (1) Disk displacement without reduction.
- (2) Disk displacement with reduction with intermittent locking.
- (3) Disk displacement without reduction with limited opening.
- (4) Disk displacement without reduction without limited opening.
- (5) Degenerative joint disease.
- (6) Subluxation.

TMJ disorders can lead to complaints and signs in daily clinical practice. Cephalgia, ear pain, tinnitus, vertigo, swallowing disorders, Eustachian tube dysfunction, and hearing loss have been described in the literature [4,5]. Toller and Juniper [6] described 40% ear pain, 26% hearing loss, 18% tinnitus, 8% vertigo, 5% ear fullness, and 1.7% ear pressure in patients with TMJ disease.

Assessment of medical history and a physical examination are essential in the diagnosis of disease. Clicking sound in the joint, TMJ disorder in the medical history, and a history of reduction contribute toward a high rate of diagnosis. Disk displacement with reduction with intermittent locking has 97% specificity and 80% sensitivity in the diagnosis of the disease [7]. The diagnosis of disk displacement without reduction is more difficult. There is a need for advanced methods of examination such as computed tomography and magnetic resonance of TMJ. We need advanced methods for determining treatment and prognosis.

Different hypotheses have been suggested in the literature on the pain in TMJ disorders. Some authors claimed that tensor veli palatini muscle stimulation because of Eustachian tube dysfunction may cause ear pain [8]. Costen [9] claimed that posterior displacement of the condyles may compress the auriculotemporal branch of the trigeminal nerve. This may lead to neuropathic pain. Stress on the joint capsule and spasm

caused by chewing muscles may also cause pain around the TMJ region.

Cephalgia is a multifactorial and subjective symptom. The TMJ 2014 consortium network showed that headache attributed to TMD may occur in association with tension-type headache and migraine [3]. Although the pathophysiologies of the diseases are different, the prevalence of headache is higher in TMJ disorders. Treatment of the temporomasticator system may decrease headache in patients [10,11]. This is a new area in the study of TMJ disorders. Therefore, we cannot clearly discuss the rates of headaches in TMJ in conjunction with our study. Further prospective studies should be carried out on this topic.

TMJ disorders can also occur in association with myofascial pain syndrome [12]. Myofascial pain syndrome can occur with clenching of the masticatory muscles, bruxism, headaches, and back pain caused by the disease. Anxiety and psychological disturbances such as depression may occur in patients with myofascial pain syndrome [13]. Patients need further neuropsychological diagnosis because of higher rates of headache when inquired.

We found incidences of different unilateral/bilateral headaches in TMD in the patients in our study. Although there is an association between tension-type headache and migraine, there is a mischallenge in diagnosis. The medical history of the patient is more crucial than imaging methods in diagnosis [14]. Challenges in the differential diagnosis and association of the diseases make cephalgia a complex complaint. This is a weakness of our study.

Conclusion

In this study, 33/47 patients had cephalgia in the head region, except TMJ disorders (70.2%). The rate of headache is higher in patients. The ache is importantly observed in temporal region regardless of other sides of cranium. Patients with TMJ disorders should be assessed for a history of cephalgia and neuropsychological disorders. Cephalgia is a complex and multifactorial issue and we cannot explain cephalgia basically. TMJ disorders are one of the causes of cephalgia and ear nose throat specialists, dentists, and neuropsychological teams must be aware of this disease.

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Conflicts of interest

There are no conflicts of interest.

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