

Vertigine ATM

Costen JB.: A syndrome of ear and sinus symptoms dependent upon disturbed function of the temporomandibular joint. 1934. Ann Otol Rhinol Laryngol 1997 Oct;106(10 Pt 1):805-19

N.B. Questo articolo del 1934 ha valore storico: da qui nasce la “Sindrome di Costen” nota a qualunque medico, che pone in relazione Articolazione Temporo Mandibolare (ATMo o TmJ) e Orecchio. L'importanza di questa intuizione pionieristica è tale che Ann Otol Rhinol Laryngol ha ritenuto di ripubblicare l'articolo nel 1997.

Chole RA1, Parker WS. : Tinnitus and vertigo in patients with temporomandibular disorder. Arch Otolaryngol Head Neck Surg. 1992 Aug;118(8):817-21.

The association of tinnitus and vertigo with temporomandibular disorder (TMD) has been debated for many years. The observation that patients with TMD have otologic symptoms is confounded because tinnitus and vertigo are common symptoms in the normal population. The present study was conducted to determine if tinnitus and vertigo are actually more prevalent in patients with TMD than in appropriate age-matched controls. One control group was recruited from patients seeking care for health maintenance and the other from patients seeking routine dental care. We surveyed 1032 patients: 338 had TMD and 694 served as two age-matched control groups. Tinnitus and vertigo symptoms were significantly more prevalent in the TMD group than in either of the control groups. The mechanism of the association of TMD and otologic symptoms is unknown.

Ferendiuk E1, Zajdel K2, Pihut M1. Incidence of otolaryngological symptoms in patients with temporomandibular joint dysfunctions. Biomed Res Int. 2014;2014:824684. doi: 10.1155/2014/824684. Epub 2014 Jun 24

Free PMC Article <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4094732/>

The functional disorders of the masticatory organ are the third stomatological disease to be considered a populational disease due to its chronicity and widespread prevalence. Otolaryngological symptoms are a less common group of dysfunction symptoms, including sudden hearing impairment or loss, ear plugging sensation and earache, sore and burning throat, difficulties in swallowing, tinnitus, and vertigo. The diagnostic and therapeutic problems encountered in patients with the functional disorders of the masticatory organ triggered our interest in conducting retrospective studies with the objective of assessing the incidence of otolaryngological symptoms in patients subjected to prosthetic treatment of the functional disorders of masticatory organ on the basis of the analysis of medical documentation containing data collected in medical interviews.

MATERIAL AND METHODS: Retrospective study was conducted by analyzing the results of medical interviews of 1208 patients, who had reported for prosthetic treatment at the Functional Disorders Clinic of the Department of Dental Prosthetics of Jagiellonian University Medical College in Cracow between 2008 and March 14, 2014.

RESULTS: Otolaryngological symptoms were observed in 141 patients. The most common symptoms in the study group were earache and sudden hearing impairment; no cases of sudden hearing loss were experienced.

Marchiori LL1, Oltramari-Navarro PV1, Meneses-Barrivieira CL1, Melo JJ1, Macedo J2, Bruniera JR1, Gorres VC1, Navarro Rde L1. Probable Correlation between Temporomandibular Dysfunction and Vertigo in the Elderly. *Int Arch Otorhinolaryngol*. 2014 Jan;18(1):49-53. doi: 10.1055/s-0033-1358583. Epub 2013 Nov 14.

Introduction Temporomandibular disorder (TMD) covers a variety of clinical problems, and some epidemiologic studies have tried to indicate mechanisms of interaction and association between vertigo and TMD, but this topic still is controversial. **Objective** To assess the presence of vertigo in elderly patients associated with TMD. **Methods** A cross-sectional study was conducted with the inclusion of elderly individuals who lived independently. TMD was assessed by dental evaluation and vertigo was verified by medical history. Statistical analysis was performed using the chi-square and relative risk. **Results** **There was a significant association ($p=0.0256$) between the TMD and vertigo** (odds ratio=2.3793). **Conclusion** These results highlighted the importance of identifying risk factors for vertigo that can be modified through specific interventions, which is essential to prevent future episodes, as well as managing the process of rehabilitation of elderly patients in general

Badel T1, Savić-Pavicin I, Zadavec D, Marotti M, Krolo I, Grbesa D. Temporomandibular joint development and functional disorders related to clinical otologic symptomatology. *Acta Clin Croat*. 2011 Mar;50(1):51-60.

Temporomandibular disorders (TMDs) are a form of musculoskeletal pain of the temporomandibular joint (TMJ) and/or masticatory muscles of nonspecific etiology. In this study, the relationship between embryonic and anatomic-topographic similarities of the TMJ and the ear was analyzed, i.e. secondary otologic symptoms that can be closely connected to TMJ disorder. Nonspecific otologic symptoms are not primary diagnostic symptoms of TMD, but may cause diagnostic confusion due to patients' inability to correctly locate the origin of pain. **The most common otologic symptoms that can be related to TMDs are otalgia, tinnitus and vertigo.** Otorhinolaryngologists have to differentiate between primary otologic symptoms and those caused by TMJ disorders. In TMD diagnosis, manual techniques are used to determine the arthrogenic or myogenic form, whereas in the diagnosis of arthrogenic disorders magnetic resonance imaging is indicated as the highly specific imaging method of joint disk and osteoarthritic changes. Symptomatic treatments for TMD as well as the etiologic diagnosis of the pain require multidisciplinary cooperation between dentists and medical specialists.

Ramírez LM1, Ballesteros LE, Sandoval GP. Otological symptoms among patients with temporomandibular joint disorders . *Rev Med Chil*. 2007 Dec;135(12):1582-90. doi: /S0034-98872007001200013. Epub 2008 Feb 13.

Full . http://www.scielo.cl/scielo.php?script=sci_arttext&pid=S0034-98872007001200013&lng=en&nrm=iso&tlng=en

Middle ear muscles have a common embryological and functional origin with masticatory and facial muscles. Therefore, symptoms referred to the ear may originate from the stomatognathic area. When a primary otological cause is discarded in the diagnostic work up for tinnitus, vertigo, hypoacusia, hyperacusia, ear pain or sensation of occluded ear, **a temporomandibular joint dysfunction may be the cause of these symptoms**. Temporomandibular joint dysfunction is twice more common among women and has environmental, physiological and behavioral causes. Among patients with this dysfunction, the prevalence of ear pain, tinnitus and dizziness varies between 33 and 76%

Wright EF1. Otologic symptom improvement through TMD therapy. Quintessence Int. 2007 Oct;38(9):e564-71.

Some patients with a temporomandibular disorder (TMD) and coexisting otologic symptoms desire to know the probability of TMD therapy improving their otologic symptoms. The aim of this study was to determine a clinically valid method for identifying which otologic symptoms have a high probability of improving as a result of satisfactory TMD symptom improvement.

METHOD AND MATERIALS: Two hundred TMD patients with coexisting tinnitus, otalgia, dizziness, and/or vertigo were asked about their otologic symptom characteristics and associations and were given clinical tests, which were speculated to predict otologic symptom response from TMD therapy. The subjects received conservative TMD therapy in a manner thought to be most advantageous for their disorders. These potential assessment instruments were then evaluated for their ability to predict otologic symptom improvement.

RESULTS: After satisfactory TMD symptom improvement was obtained, the percent of subjects reporting significant improvement or resolution of their tinnitus, otalgia, dizziness, and vertigo was 83%, 94%, 91%, and 100%, respectively. The chi-square and Fisher exact probability tests identified significant correlations for tinnitus, otalgia, and dizziness improvement with younger age; for tinnitus and otalgia improvement with subjects who related that the otologic symptom began when the TMD symptoms began, was worse when the TMD symptoms were worse, and was related to stress; and for dizziness improvement with subjects relating more severe TMD symptoms.

CONCLUSION: **Asking TMD patients with coexisting otologic symptoms these specific questions will help practitioners identify which otologic symptoms have a high probability of benefiting from TMD therapy.**

Parker WS1, Chole RA. Tinnitus, vertigo, and temporomandibular disorders. Am J Orthod Dentofacial Orthop. 1995 Feb;107(2):153-8.

Although tinnitus and vertigo have been reported as associated with temporomandibular disorders (TMD) for many years, no control studies have been reported. This study was designed to include two large control populations, as well as a large TMD sample. The null hypothesis was tested. **The results revealed that tinnitus and vertigo were significantly more prevalent in the TMD group than in either control group.**

Reasons for the association of TMD and these otologic symptoms have been proposed and they are discussed. Presently the cause is unknown.

Kempf HG1, Roller R, Mühlbradt L. Correlation between inner ear disorders and temporomandibular joint diseases]. HNO. 1993 Jan;41(1):7-10.

Acute and chronic inner ear diseases involve many etiological factors, some as yet unknown. ENT-specific, orthopedic, hemorrheological, immunological and neurological disorders can affect the cochleovestibular system and induce hearing loss, vertigo and/or tinnitus. We performed a prospective study to analyze factors of the dentognathological system and of the temporomandibular joint that can influence acute and chronic inner ear dysfunctions. A total of 138 patients (49.3% female, 50.9% male) receiving clinical treatment for inner ear dysfunctions (12.3% chronic sensorineural hearing loss, 15.2% Ménière's disease, 52.2% sudden hearing loss, 13.8% isolated tinnitus, 6.5% recurrent hearing loss) underwent a prospective dental and gnathological examination. In particular, the patient's dental status and a functional investigation of the masticatory muscles and the temporomandibular joint were analyzed. In 20.3% patients the examination showed no pathology of the dentognathological system. In contrast, there were pathological findings in 110 patients (79.7%): in 43.5% a temporomandibular joint syndrome was diagnosed, in 29% parafunction of the occlusion, and in 35% a myopathy of the masticatory muscles. Additionally 32.6% patients showed dental disorders that required treatment; 11.65% had problems with dentures and 20.3% malpositioned wisdom teeth. In 16 patients the recommended dental treatment was followed up and improvement of otological symptoms was found in 56.6%. The present investigation shows that many patients with inner ear dysfunction suffer from dentognathological disorders. **For a subgroup of patients there exists the possibility of improving otological symptoms by dental treatment. Therefore we recommend a dentognathological examination in patients with inner ear dysfunctions of unknown etiology.**

Williamson EH. Interrelationship of internal derangements of the temporomandibular joint, headache, **vertigo**, and tinnitus: a survey of 25 patients. Cranio. 1990 Oct;8(4):301-6. eugenewilliamson@msn.com

Twenty-five patients presenting with a chief complaint of pain around the temporomandibular joints, along with symptoms of internal derangements, i.e., clicking or crepitus, and concomitant **vertigo were treated successfully with jaw repositioning orthotics**. All had been examined by physicians for otalgic disorders and were considered negative. **Vertigo was remitted with orthotic therapy in all cases and returned with the removal of the appliance**. Anatomic and physiologic hypotheses are presented as potential etiologies.