

## TREATMENT OF SOMATIC TINNITUS

### A Bjerne,

*Vertigo, Tinnitus and Pain Unit, Ystad Hospital, SE-271 82 Sweden.*

*E-mail: [assar.bjerne@telia2.se](mailto:assar.bjerne@telia2.se)*

### Introduction

Since 1988, I have been interested in tinnitus and vertigo related to muscular tension in the jaw and neck. I made my first observations on tinnitus; the lateral pterygoid muscle was more tender on the ipsilateral side where single sided tinnitus was experienced. I also found that intramuscular injection (Lidocaine) in the lateral pterygoid muscle on the tinnitus side reduced tinnitus in a consecutively sampled group of 38 tinnitus patients with 63 % according to VAS. When the anaesthetics were off, tinnitus returned as before the injection. From 1993 until today my whole clinical work was devoted to these patients. During this time I have examined/treated about 2000 referred patients with tinnitus as the first complaint, about 1000 with vertigo as the first complaint, 500 diagnosed with Meniere's disease and about 300 with Whiplash Associated Disorders. Since 1996 to 2005 I have published 5 articles about tension in jaw and neck in patients diagnosed with Meniere's disease, and suggested a new treatment concept to reduce tension and sick leave in this group.

### Criteria for Somatic Tinnitus

There are 3 criteria for somatic tinnitus, probably the most common type of tinnitus, also including tinnitus in patients diagnosed with Meniere's disease.

1. The patients are able to alter their tinnitus sound, both sound level and pitch by performing movements of their jaw, neck and eyes.
2. Many patients are able to alter their tinnitus sound by putting pressure with a fingertip on the temples, mandible, cheek, tragus, behind the ear and in the neck.

All these movements increase tension signals from tensed muscles in the innervation area of the sensory trigeminal nerve linked into the acoustic pathways.

3. The examination shows a muscular tension in the jaw and neck muscles.

We have also found a subgroup in this field of tinnitus patients. The examination exposes an often severe muscular tension typical for patients described at above criteria, but they are not able to manipulate their tinnitus. Despite hearing loss and hearing damage, their tinnitus benefit much from the treatment.

### Examination

The examination includes an assessment of the patients' self-administered questionnaire and palpation of the jaw and neck muscles. The mobility of the jaw and neck and restrictions in mobility are measured, as well as pain on movement. The examination of the dental occlusion is made with the neck in an upright posture. We consider that the jaw and upper cervical spine constitute an integrated motor system, so the posture is central in both examination and

treatment. A forward head/neck posture is mostly a compensation for a disorder in the dental occlusion bringing the mandible and neck forwards in chewing and swallowing reflexes.

### **Treatment**

The aim of the treatment is to reduce the muscle tension in jaw and neck. Many patients have noticed that tinnitus debuted during a life crisis with stress and depression and from which they often still not are cured. These patients consult our stress therapist as a complement to the other treatment. With the neck/jaw in an optimal central posture, the dental occlusion is adjusted by grinding. This may be done several times to reduce the tension. Shining bruxing facets are identified and dulled by a light touch of dental grinding. If they reappear shining at the next visit, they are diagnosed as the result of masticatory muscle hyperactivity during the REM sleep. Each time they reappear they are dulled. The patients are carefully trained to feel the new stabile occlusion both when standing, lying and sitting to develop a good posture of the body. The worst posture they have when sitting.

About 25% of the patients receive special bite splints against tooth and tongue clenching. About the same amount are referred to a physiotherapist for further treatment of the tension in the neck and training in relaxing and posture.

Patients are also instructed to do a stretching exercise of their suboccipital muscles which they are asked to do frequently. After the stretching exercise they are also asked to perform rotation movements in the atlanto-occipital joint especially to the restricted side. The homework also includes relaxing exercises involving breathing with the diaphragm.

### **Results**

The treatment of the muscle tension in jaw and neck shows a significant reduction of tinnitus both frequency and severity. The 3-year follow-up period, with half-year controls also shows a significant reduction of other tension related symptoms as vertigo, feeling of fullness in the ear, pain in the jaw and neck and headache.