the prevalence of antibodies in such patients. I can say that development of immunity to botox is not limited to patients injected with frozen/thawed botox, because we see antibodies in patients who have only been injected with fresh botox. To the best of my knowledge, no patient at our Center has developed an infection attributable to a contaminated vial of frozen/thawed botox.

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Tinnitus Aereum as an Effect of Increased Tension in the Lateral Pterygoid Muscle

To the Editor:

Tinnitus, which to a greater or lesser extent affects 7% of the western societies,[1] can be associated with almost any form of ear disease. Sometimes, however, tinnitus has no clear cause and is then considered to be correlated to hydrops in the inner ear.[2] Several studies indicate, though, that the etiology of tinnitus without a clear cause still is mostly unknown.[2]

At a stomatognathic examination of 39 patients with disabling tinnitus without a clear cause, temporomandibular joints, jaw muscles, and mandibular function were examined. It was found that all of them had a pronounced craniomandibular disorder; i.e., 7 to 17 points with an average score of 11.0 on a scale ranging from 0 to 25 according to the clinical dysfunction index by Helkimo. The patients, who were referred from two otolaryngological clinics in southern Sweden, were between the ages of 23 and 74 years and both sexes were represented. Twenty-nine of them had unilateral tinnitus and 10 had bilateral tinnitus. Seventeen of the patients had the diagnosis of Meniere's syndrome.

During the examination, it was found that the lateral pterygoid muscle was extremely sore when being palpated. In the unilateral cases the lateral pterygoid muscle was more sensitive on the tinnitus side, whereas the soreness was practically equal in the bilateral cases.

When a local anesthetic (1.8 lidocaine 2%) was injected intramuscularly into the lateral pterygoid muscle on the tinnitus side, the patients expressed a tinnitus relief in 46 of the 49 areas of the Visual Analogue Scale (VAS). The response varied from 20% to 100%.

The average tinnitus relief was estimated at 63% on the VAS, and 14 patients claimed feeling a 100% relief. The tinnitus reappeared when the effect of the anesthetic wore off.

In order to repeat the effect, a renewed intramuscular injection was made to one patient eight times in a 4-week period, each time resulting in a tinnitus relief in the range of 70% to 90% according to the VAS.

Since the tinnitus reappeared when the effect of anesthetic ceased, an explanation to the patients sound experience could be bone conduction of some kind of vibrations from muscular activities in the lateral pterygoid muscle.

Thus should tinnitus aureum be correlated with tension in the lateral pterygoid muscle, caused by craniomandibular disorder. The findings show that an anesthetic intramuscular injection into the lateral pterygoid muscle can be used to establish the source of tinnitus when caused by increased tension in this muscle.

Treating tinnitus aureum caused by craniomandibular disorder, would include different ways of stabilizing the dental occlusion. A progressing study of the results of treatment shows that the soreness of the lateral pterygoid muscle is radically lowered by the treatment. In relation to the absence of soreness, the patients state that they have a permanent relief of tinniuts.

A more complete description of the findings and the outcome of the treatment will be published later.

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