Letters to the editor*

The effects of botulinum injection on bone and cartilage of the mandibular condyle

We read with great interest the article entitled “The effects on the mandibular condyle of Botox injection into the masseter are not transient” (Dutra EH, Yadav S. Am J Orthod Dentofacial Orthop 2019;156:193–202). The authors confirmed bone loss at the mandibular condyle on the side injected with botulinum toxin (BTX). We were really surprised to see that several recent references on the subject were missing.

First, their results concerning the bone loss at the condyle are in line with numerous previous works, including our study, which was one of the first reporting bone loss at the condyle and alveolar bone at the mandible of BTX-injected adult rats.¹²

Second, we previously reported a simple technique allowing quantitative analysis of the articular cartilage of the condyle by using a new unbiased method with microcomputed tomography in this BTX model.³ Here, the authors have used a histological method to measure cartilage thickness when it has many limitations (tissue alterations during histological processing, section obliquity), leading to measurement errors.

Third, the authors claimed that their results indicated that “the acute muscle paralysis was not transient.” It would be proper to say that the muscle paralysis lasted for a longer period than expected. Eight weeks is not considered long, even in mice. In the rat, we recently confirmed the vanishing effect of BTX and its effects both on muscle and on long bones.⁴

Fourth, the authors indicate that there are only a few clinical studies on the effects of BTX treatment on bone. A recent study from our group identified alveolar and condylar bone changes in adult patients at the mandible after BTX injections into masticatory muscles.⁵

Furthermore, hypertrophic bone metaplasia at a muscle enthesis of the mandible has been evidenced in this rat model of BTX injections.¹ It could have been interesting to seek the same occurrence in this study, although the pathophysiological mechanisms are not yet clearly understood.

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*The viewpoints expressed are solely those of the author(s) and do not reflect those of the editor(s), publisher(s), or Association.

References

1. Küin-Darbois JD, Libouban H, Chappard D. Botulinum toxin in masticatory muscles of the adult rat induces bone loss at the condyle and alveolar regions of the mandible associated with a bone proliferation at a muscle enthesis. Bone 2015;77:75–82.

Herbst appliance anchored with miniscrews: Some unsettled questions

The Herbst appliance (HA) is one of the most useful fixed functional appliances for the functional orthopedic correction of Class II malocclusion. However, there are several unwanted side effects, such as the uncontrollable torque of the incisors and the anchorage loss of the molars. The article by Manni et al deals with this issue and, thus, greatly intrigues us (Manni A, Migliorati M, Calzolari C, and Silvestrini-Biavati A. Herbst appliance anchored to miniscrews in the upper and lower arches vs standard Herbst: A pilot study. Am J Orthod Dentofacial Orthop 2019;156:617–25). The article informs about the use of 4 miniscrews in both the maxillary and mandibular arches to alleviate side effects. Nevertheless, a few questions could be raised.

1. The inclusion and exclusion criteria do not discuss whether the reason for the Class II malocclusion is the maxillary excess or the mandibular deficiency. If the patient has an excess maxilla and a normal mandible, using the HA to advance the mandible may not be a good solution.