

INTRODUCTION

Sleep bruxism is a condition characterized by teeth grinding and clenching during sleep, which can lead to various dental and overall health problems. Despite the prevalence of bruxism, effective treatment options can be challenging to identify. This poster aims to report a clinical case of a patient diagnosed with sleep bruxism who received BTX-A (Botox®) injections in the masseter and temporal muscles, and evaluate the electromyographic changes before and after BTX-A (Botox®) application, providing insights into the effectiveness of this treatment approach.

METHODS & MATERIAL

A 56 year old female patient, had had migranes for 5 Years. She also had signs and symptoms of myofascial pain and sleep bruxism, which was diagnosed through polysomnography. Many treatments were done, however, neither of them did not demonstrate effectiveness. A treatment using botulinum toxin was proposed.



Electrodes Placement:

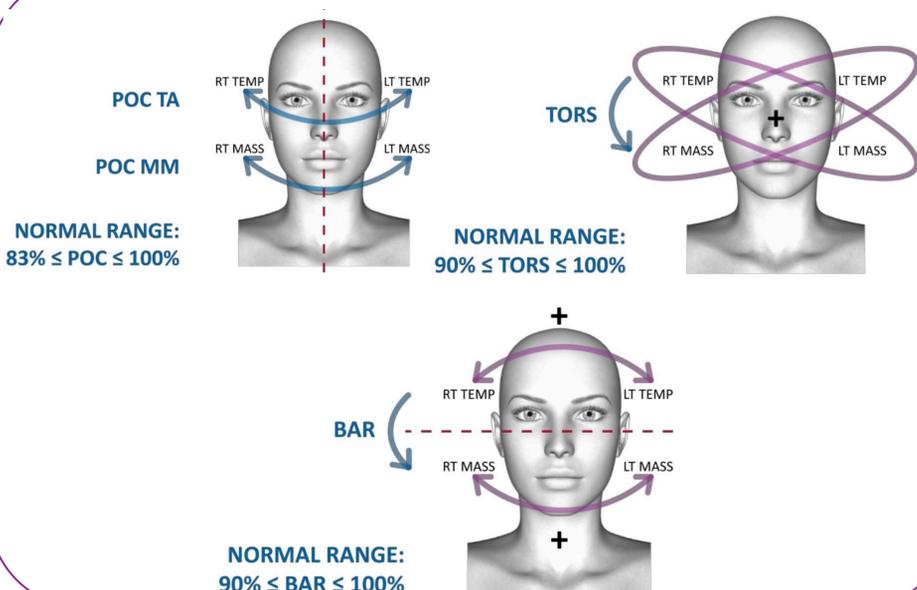
Surface electromyography TEETHAN (EMG) was conducted on the masseter and temporal muscles. Electrodes were positioned on these muscles to capture the electrical activity.

EMG Measurement:

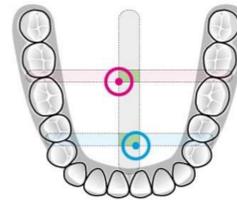
Surface electromyography (EMG) was performed using a TEETHAN system. This system recorded and analyzed the electrical activity of the masseter and temporal muscles.

Botulinum Toxin Application:

A bottle of 100 units (U) of botulinum toxin type A (BTX-A, Botox® Allergan) were diluted in 1 ml of sterile 0.9% saline solution. A 30 units (U) of BTX-A injections were administered into the right and left masseter muscles. Additionally, 10 units (U) of BTX-A were injected into the right and left temporal muscles.

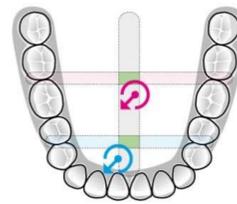


RESULTS



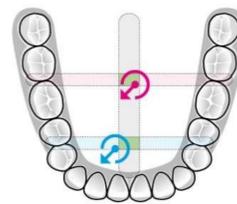
Measurement prior to the application of BTX-A.

89



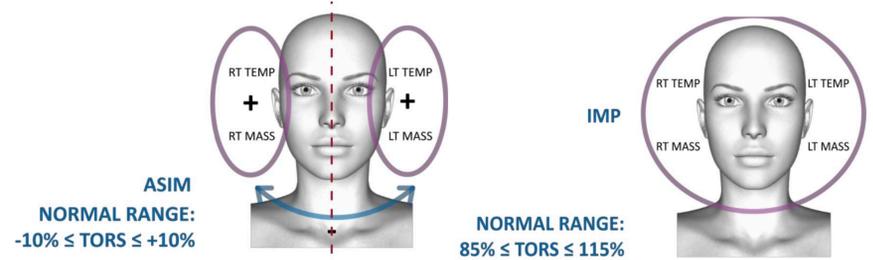
Measurement 30 days after to the application of BTX-A.

82



Measurement 6 months after to the application of BTX-A.

88



CONCLUSION

The use of botulinum toxin proved to be effective, minimally invasive, and free of side effects, making it a viable option for pain management in bruxism patients. However, it did not demonstrate effectiveness in altering the electromyographic behavior of the masseter and temporal muscles. Therefore, it should be considered as an adjunctive treatment option rather than a standalone solution for controlling the signs and symptoms of bruxism. Other treatment alternatives may still be necessary to address the complete management of bruxism.

REFERENCES

1. American Academy of Sleep Medicine. The international classification of sleep disorders, revised diagnostic and coding manual. 2nd ed. Westchester: American Academy of Sleep Medicine. 2005; 2:189-92.
2. Al-Wayli H. Treatment of chronic pain associated with nocturnal bruxism with botulinum toxin. A prospective and randomized clinical study. J Clin Exp Dent. 2017; 9(1):112-7.
3. Alonso NFJ, Jiménez JF, Plaza NB, Pilo-de-la-FF, Navacerrada M, Arroyo SM. Tratamiento del bruxismo grave con toxina botulínica tipo A. Rev Neurol. 2011; 53(2):73-76.
4. BEHR, M. et al. The two main theories on dental bruxism. Annals of Anatomy, Regensburg, v. 194, no. 2, p. 216-219, 2012.
5. Carra MC, Huynh N, Lavigne G. Sleep bruxism: a comprehensive overview for the dental clinician interested in sleep medicine. Dent Clin North Am. 2012; 56(2):387-413.
6. Connelly ST, Myung J, Gupta R, Tartaglia GM, Gizdulich A, Yang J, et al. Clinical outcomes of Botox injections for chronic temporomandibular disorders: do we understand how Botox works on muscle, pain, and the brain? Int J Oral Maxillofac Surg. 2017; 46(3):322-327.