ISSN 1669-9106 MEDICINA (Buenos Aires) 2025: 85: 654

MARCUS GUNN SYNDROME: A RELEASED PHYLOGENETIC OLD REFLEX?

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A 59-year-old male presented since childhood involuntary right upper eyelid retraction when chewing. His prenatal, birth, and developmental history were normal. On evaluation, he had a right ptosis (Fig. 1), and right upper eyelid retraction was triggered by chewing, mouth opening (Fig. 2), and jaw protrusion. Pupillary reflexes, extraocular muscle movements, as well as the remainder of his neurological exam were all normal. Marcus Gunn jaw-winking syndrome was first described by Robert Marcus Gunn in 1883. It is associated with synkinetic movements of the upper eyelid causing eyelid retraction during chewing movements involving pterygoid muscle. Its etiology remains unknown, but recent anatomical studies suggest that afferents from both the masticatory muscles and the eyelids converge on the mesencephalic nucleus of V (Vme), where their neurons appear to be electrotonically coupled. Therefore, masticatory afferent Vme neurons activation, likely co-stimulate the neighbor eyelid afferent Vme neurons. This combined stimulation excites the levator palpebral motoneurons through the III projecting Vme neurons producing a jaw-eyelid synkinesis. It is possible that Marcus Gunn syndrome is the remnant of an old oculomotor reflex used by lower animals allowing them to stare on its prey when it opens mouth widely to prey.

Note: The patient signed the corresponding informed consent for the publication.

Figure 1 |

Figure 2 |