

## IMAGEM EM NEUROLOGIA/IMAGE IN NEUROLOGY

## In the Wink of an Eye: Revisiting Marcus Gunn Syndrome

## Num Piscar de Olhos: Revisitando a Síndrome de Marcus Gunn

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We present a case involving a 9-year-old female child referred to a tertiary Neuropediatrics clinic due to a long-standing, acquired, involuntary movement of her right eyelid triggered by chewing. The medical history was unremarkable, except for an uncomplicated episode of bilateral acute otitis media when she was 12 months old. During the examination, we observed a rhythmic retraction of a non-drooping right eyelid that was exclusively triggered by chewing movements (see **Video 1** and **Fig. 1**, both authorized and approved by parents). A diagnosis of jaw-winking synkinesis was made, and the patient was managed conservatively as the symptoms were not causing discomfort.

In 1883, the Scottish ophthalmologist Robert Marcus Gunn described the case of a 15-year-old girl who presented with “congenital ptosis



**Figure 1.** Synkinetic retraction of the right eyelid with chewing movements.

**Video 1.** Involuntary retraction of the right eyelid during voluntary chewing movements. ([see the video](#))

with peculiar associated movements of the affected lid”.<sup>1</sup> These peculiar movements consisted of a synkinetic retraction of the eyelid with jaw movements, later termed as Marcus Gunn jaw-winking syndrome. This phenomenon occurs through the simultaneous activation of the *levator palpebrae superioris* muscle and the ipsilateral pterygoid muscle, which is activated during movements such as opening the mouth, chewing, and sucking.<sup>2</sup> Generally, it occurs in conjunction with ptosis<sup>2</sup> and is thought to result from an aberrant connection between the superior division of the oculomotor nerve that innervates the *levator palpebrae superioris* muscle and the motor branches of the trigeminal nerve that innervate the masticatory muscles. The location of this aberrant connection may occur not only at an infranuclear or peripheral level, but also at an internuclear or supranuclear topography.<sup>3</sup> Less frequently, it may be acquired and unrelated to blepharoptosis,<sup>4</sup> as seen in this case. Treatment is generally unnecessary and conservative in cases where there is no ptosis.<sup>2</sup>

It is important to mention that a different acquired facial synkinesis that resembles an inverse Marcus Gunn syndrome exists and is known as Marin Amat syndrome.<sup>5</sup> It consists of the activation of the *orbicularis oculi* and eyelid closure with jaw opening. It is hypothesized to be secondary to aberrant facial nerve reinnervation following a peripheral facial nerve palsy, like other phenomena such as autonomic crocodile tearing.<sup>5</sup> ■

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