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Marcus Gunn Jaw-Winking Phenomenon as a Boon in Mild–Moderate Ptosis for Prevention of Amblyopia- Case Series

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Abstract

Purpose:
To highlight the functional advantage of Marcus Gunn jaw-winking phenomenon (MGJWP) in reducing the risk of amblyopia in patients with mild to moderate congenital ptosis.

Methods:
An observational analysis was conducted on patients with MGJWP and mild–moderate ptosis attending the Department of Ophthalmology, Tezpur Medical College and Hospital, Tezpur, Assam. Uncorrected visual acuity (UCVA), best-corrected visual acuity (BCVA), and amblyopia-related risk factors were assessed.

Results:
Most patients demonstrated good BCVA despite delayed or absent surgical intervention. Intermittent eyelid elevation during jaw movements resulted in periodic clearance of the visual axis, potentially reducing stimulus-deprivation amblyopia.

Conclusion:
In selected cases of mild to moderate ptosis, MGJWP may act as a functional protective factor against amblyopia. Conservative management with close visual monitoring may be appropriate when no other amblyogenic factors are present.

Keywords:
Marcus Gunn jaw-winking phenomenon; congenital ptosis; amblyopia; synkinesis; pediatric ophthalmology

Introduction

The Marcus Gunn Jaw-Winking Phenomenon, or MGJWP, describes a congenital condition of synkinesis in which the ptotic eyelid spasmodically rises in response to mastication or the resultant actions of sucking or opening the mouth because of ectopic innervation between the levator palpebrae superioris nerve, innervated by cranial nerve III, and the mastication muscles, innervated by cranial nerve V (Duke-Elder & Wybar, 1961).

MGJWP is typically linked with congenital ptosis, and it has long been considered a cosmetically disturbing condition, thereby often requiring early surgical interventions. The functional significance of eyelid elevation due to the influence of the jaw on visual development, especially in regard to preventing amblyopia, is relatively less explored.

Functional Role in Amblyopia

The amblyopia in cases involving congenital ptosis is mainly stimulus deprivation and is functionally dependent on both severity and duration of obstruction of the visual axis (Wright et al., 2015). For patients who present with mild and moderate obstructions in vision due to ptosis, MGJWP could function as a means of intermittent resolution in obstruction within the visual axis due to frequent jaw movements.

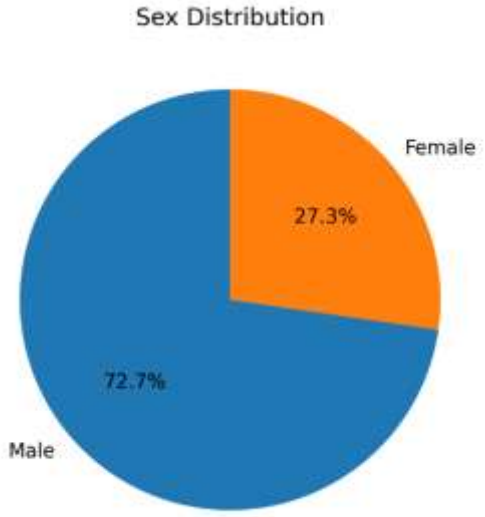
In infants and young children, there are frequent occurrences of feeding and sucking behaviors. The subsequent elevation of the eyelid in MGJWP enables periodic stimulation of the retina during the critical period for visual development and can therefore minimize the possibility of amblyopia (von Noorden and Campos, 2002)and myopia prevention.

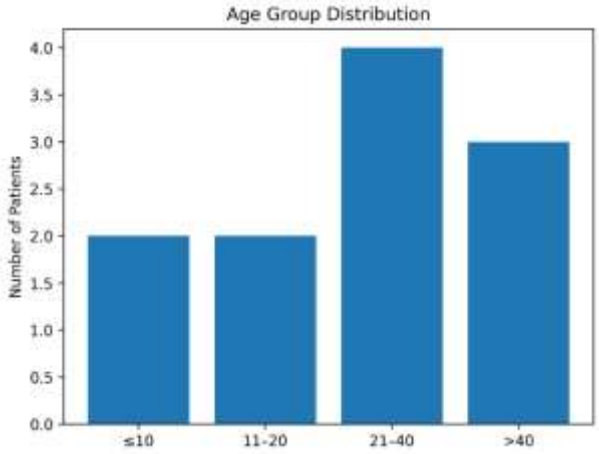
Clinical Observations

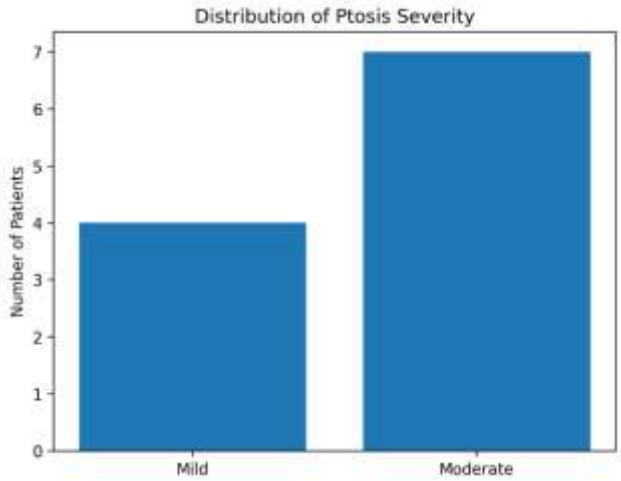
A total of 11 patients with MGJWP and mild to moderate ptosis were evaluated.

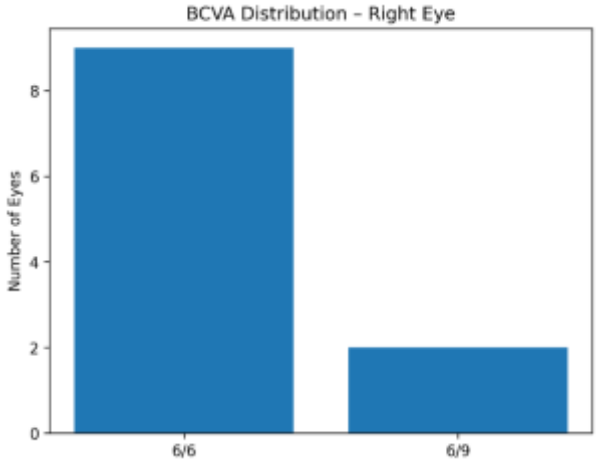
SL No.	Age	Sex	Ptosis Severity	UCVA (R/E)	UCVA (L/E)	BCVA (R/E)	BCVA (L/E)
1	12	M	Mild	6/12	6/9	6/6	6/6
2	7	F	Mild	6/6	6/9	6/6	6/6
3	27	M	Moderate	6/9	6/18	6/6	6/9
4	41	M	Moderate	6/9	6/12	6/6	6/9
5	9	F	Moderate	6/18	6/36	6/6	6/9
6	59	M	Moderate	6/18	6/24	6/9	6/9
7	17	M	Mild	6/24	6/36	6/6	6/6

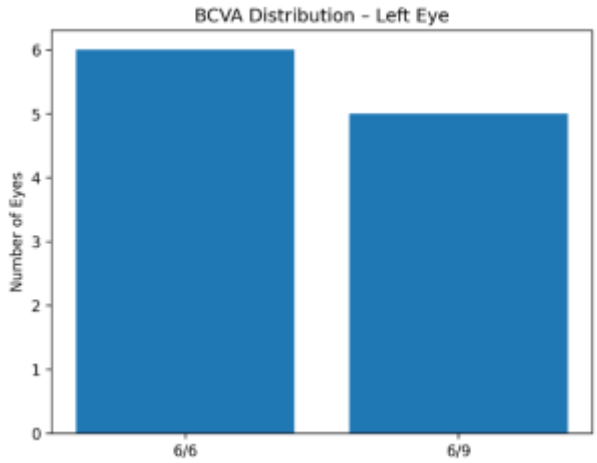
SL No.	Age	Sex	Ptosis Severity	UCVA (R/E)	UCVA (L/E)	BCVA (R/E)	BCVA (L/E)
8	31	F	Mild	6/9	6/12	6/6	6/6
9	24	M	Moderate	6/12	6/6	6/9	6/6
10	39	M	Moderate	6/18	6/12	6/6	6/6
11	15	M	Moderate	6/24	6/36	6/6	6/9











The mean age was **25.5 years** (range: 7–59 years); **72.7%** were male. Mild ptosis was present in **36.4%**, while **63.6%** had moderate ptosis. All patients achieved **BCVA ≥ 6/9 in both eyes**, and no cases of dense amblyopia were observed.

Visual acuity was assessed using age-appropriate methods, and cycloplegic refraction was performed in all patients. The absence of significant anisometropia, high astigmatism, or strabismus further supported conservative management.

Discussion

Although MGJWP is often viewed negatively due to cosmetic concerns, its presence in mild to moderate ptosis may confer a functional advantage by preventing prolonged visual deprivation. While early surgical intervention is recommended in severe congenital ptosis to prevent amblyopia, this may not be universally required in MGJWP cases where dynamic eyelid elevation exists (Bennett & Barry, 1980).

Careful patient selection is essential. Conservative management may be considered when:

- Ptosis is mild to moderate
- The visual axis is intermittently cleared
- There is no significant refractive error, strabismus, or evolving amblyopia

Regular follow-up with visual acuity monitoring remains mandatory.

Clinical Implications

MGJWP should not automatically be considered an indication for early surgical intervention. In selected patients, it may act as a protective mechanism against amblyopia. Management should be individualized, balancing functional visual development with cosmetic and psychosocial considerations.

Conclusion

Marcus Gunn jaw-winking phenomenon may paradoxically serve as a **boon** in patients with mild to moderate congenital ptosis by reducing the risk of amblyopia through intermittent visual axis clearance. Conservative management with vigilant follow-up is a reasonable approach in appropriately selected cases.

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CONSENT AND DECLARATION

Written informed consent was obtained from all patients, including consent for clinical photography and publication of images.

DECLARATION OF PATIENT CONSENT

The authors certify that they have obtained all appropriate patient consent forms. In these forms, patients have given their consent for images and clinical information to be reported in the journal. Patients understand that their names and initials will not be published and that efforts will be made to conceal their identity; however, anonymity cannot be guaranteed.

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Nil.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.