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Case Report

Marcus Gunn Jaw Winking Phenomenon - A case of the widening eye

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Abstract:
Marcus Gunn jaw winking phenomenon is a congenital synkinetic movement due to synkinesis between the upper eyelid and the pterygoids and it accounts for 8% of patients with congenital ptosis. In rare instances, ptosis may be absent. We present a case of Marcus Gunn Jaw Winking phenomenon without ptosis at presentation
Key Words: Congenital ptosis, Jaw winking phenomenon

Introduction:

Synkinesis is a simultaneous movement or a co-ordinated sequence of movement of muscles supplied by different nerves or by peripheral branches of the same nerve. Marcus Gunn jaw winking phenomenon is a congenital synkinetic movement first reported by Marcus Gunn in 1883[1]. Although this synkinesis between the upper eyelid and the pterygoids is well known, it accounts for only 8% of patients with congenital ptosis in the paediatric practice[2]. In rare instances, ptosis itself may be absent complicating the diagnosis.

Case Report:

A 6 month old male infant was brought by his mother with complaints of widening of one eye at different times of the day. There were no other ocular or systemic complaints. The child was born full-term by vaginal delivery. The neonatal period was uneventful. His growth and development were appropriate for age. Systemic examination was normal. The ophthalmologist conducted a detailed examination of the eyes. Fixation, gaze and following movements were normal. Palpebral fissures appeared equal in both eyes. There was no evidence of proptosis. However, on the mother's insistence, patient was re-examined a week later and at this time widening of left palpebral fissure was noted. An ophthalmologic evaluation revealed elevation of left eyelid associated with movements of the mouth, especially chewing and sucking (Fig. 1). There was no evidence of ptosis at this stage. Visual development was appropriate for age. Rest of the ocular examination was considered normal. A diagnosis of Marcus Gunn jaw winking phenomenon was made in view of the synkinetic nature of the abnormality, in spite of the absence of ptosis.

Figure 1: Upshoot of left upper eyelid on lateral movement of mouth. Note the absence of ptosis

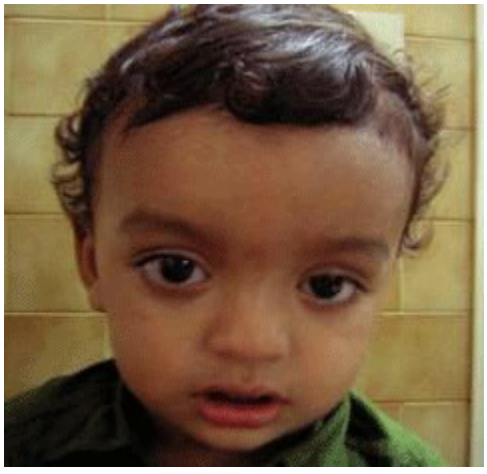

Figure 2: Mild ptosis apparent in the left eye at one year

Patient was again examined at one year of age. He was noted to have ptosis of mild degree at this time (Fig. 2). Gaze, extra ocular movements and fixation were normal. Retinoscopy was found to be within the normal range in both eyes. The mother felt that the elevation of the eyelid was much less and present only during yawning. Various movements of the mouth were unable to induce eyelid elevation at this examination.

Discussion

Marcus Gunn jaw winking phenomenon is a well recognised synkinesis in congenital ptosis. When the mouth is opened or jaw is moved laterally, the ptotic eyelid elevates. This results from a congenital aberrant connection between the trigeminal nerve controlling mastication and oculomotor nerve supplying the levator palpebrae superioris. These movements are not volitional and are termed as associated reflexes of misdirection. The exact mechanism of these movements is not understood. It is thought that an abnormal connection exists in the central nervous system between the nerve supply of the two muscles[1]. In the fully developed form of Marcus Gunn phenomenon, the upper eyelid covers varying portions of upper cornea at rest, but when the jaw is opened, or moved laterally, the apparently ptotic eyelid shoots upwards to a level higher than the normal eye. The upshoot of eyelid occurs only on opening the mouth but is not maintained if the mouth is kept open.

In our patient, we were unable to see any upshoot of the eyelid at the initial examination. This was because the reflex is momentary and only follows movements of the mouth including chewing, sucking or bottle-feeding. While the synkinetic nature was apparent, initial examination showed no ptosis. Six months later, ptosis was obvious. The degree of ptosis can vary from none to mild (lid covering the cornea 2 mm more than the normal 2 mm coverage) to moderate (3 mm) to severe (4 mm or more). It can sometimes be absent[3]. The management generally depends upon the amount of ptosis and the degree of jaw winking. In mild ptosis, as in our patient, there may be no need for surgical intervention at all. In case of moderate to severe ptosis, levator resection combined with bilateral frontalis suspension maybe necessary[4].

Detailed ophthalmologic evaluation is necessary to detect associated abnormalities. Ptosis does not affect vision directly unless it is severe, but it can decrease vision by the association of anisometropia and astigmatism. Uncorrected, these can lead to amblyopia. If amblyopia is detected, aggressive treatment with occlusion therapy and/or correction of anisometropia should be done prior to any surgical correction for ptosis. Other associations include superior rectus palsy and double elevator palsy which may need to be corrected before handling the ptosis. Our patient exhibited no other associations. In view of the later presentation of ptosis, patient still needs to be followed up for development of amblyopia at a later stage.

Patients generally feel that the upshoot of eyelid comes down with time, as was felt by the mother of our patient. There has been no objective evidence that synkinesis weakens with time. However, we were unable to observe jaw winking at the last follow up.

This case is presented to increase awareness of a rare condition and to highlight that the diagnosis need not depend upon the presence of ptosis. The synkinesis may not be apparent easily but needs to be brought on by getting the child to do various movements of the mouth. Detailed ophthalmologic evaluation is essential to rule out possible associations of anisometropia, astigmatism in order to prevent amblyopia.

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