CASE REPORT

The Effect of Horizontal Extraocular Muscle Surgery on the Heimann-Bielschowsky Phenomenon

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ABSTRACT

We report the effect of horizontal extraocular muscle surgery of Heimann-Bielschowsky phenomenon. A 52-year-old woman complained of binocular diplopia for a few months. In 2000, she underwent extracapsular cataract extraction with intraocular lens implantation in the right eye. After surgery, the diplopia persisted and developed further. She showed an esodeviation of 60 prism dioptres at near fixation and distance fixation. Cortical opacity and nucleus sclerosis were observed in the left lens, and phacoemulsification with intraocular lens implantation was performed in the left eye in October 2011. After cataract surgery, the patient suffered from oscillopsia and diplopia. Examination revealed unilateral coarse, slow, pendular vertical oscillations in the right eye and an esodeviation of 45 prism dioptres and a right hypodeviation of 8 prism dioptres, which were observed before the surgery. We performed a medial rectus muscle 6 mm recession and lateral rectus muscle 7 mm resection surgery on the right eye. After the operation, the oscillations disappeared and diplopia greatly improved. Moreover, the patient no longer complained of oscillopsia. We conclude that surgery performed on horizontal extraocular muscles could be an effective treatment for Heimann-Bielschowsky phenomenon also.

Keywords: Extraocular muscle surgery, Heimann-Bielschowsky phenomenon, oscillopsia

INTRODUCTION

The Heimann-Bielschowsky phenomenon (HBP) describes unilateral vertical, slow, coarse, pendular variable amplitude movements in an eye with profound visual loss.¹ We describe a patient in whom surgery for esotropia resulted in improvement of such nystagmus.

CASE REPORT

A 52-year-old woman complained of aggravating binocular diplopia a few months in duration. During her first visit in October 2000, she presented with esotropia and hypermature cataract in the right eye. She underwent extracapsular cataract extraction with

intraocular lens (IOL) implantation. After surgery, the diplopia developed and became worse. She showed an esodeviation of 60 prism dioptres (PD) at near fixation and distance fixation. Cortical opacity and nucleus sclerosis were observed in the left lens, and phacoemulsification with IOL implantation was performed in the left eye in October 2011.

After cataract surgery, the patient suffered from oscillopsia and diplopia. She showed unilateral coarse, slow, pendular vertical oscillations in the right eye and an esodeviation of 45 PD and right hypodeviation of 8 PD, which were observed before the surgery. We performed a medial rectus muscle 6 mm recession and lateral rectus muscle 7 mm resection surgery on the right eye. After the operation, 4 PD esophoria was noted and the oscillations disappeared. Moreover, the patient no longer complained of oscillopsia.

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COMMENT

Nystagmus and its effects on vision can be treated using pharmacological, optical, and surgical approaches.² Hertle *et al.*³ reported that horizontal rectus tenotomy could result in improvement of subjective visual function and nystagmus amplitude in patients with congenital nystagmus. The authors postulated that the clinical and electrophysiological effects of extraocular muscle tenotomy in patients with congenital nystagmus have been attributed to an interruption of the afferent proprioceptive loop, resulting in a damped peripheral ocular motor response to the nystagmus signal. The eye movement is nystagmus-like movement and may or may not be associated with oscillopsia. There has been some debate on the effect of surgery on HBP. Smith *et al.* reported cases of improvement of oscillations following strabismus surgery, whereas Davey *et al.* did not observe any reduction in oscillation after strabismus surgery.^{4,5} Our patient underwent rectus muscle resection, which could have had a similar effect to tenotomy. Therefore, this case suggests that

surgery performed on horizontal extraocular muscles could be an effective treatment for Heimann-Bielschowsky phenomenon.

Declaration of interest: The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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