



Congenital mild ptosis might not influence visual function in esotropia patients

Chang Zoo Kim

Department of Ophthalmology, Kosin University Gospel Hospital, Kosin University College of Medicine, Busan, Korea

See “Stereopsis and clinical features of esotropia patients accompanied by congenital mild ptosis”
by Heeyoung Choi, Su-Jin Kim, Seungahn Yang, Kwang Eon Hane

Childhood is critical for the development of visual function. Insufficient exposure to visual stimuli during this period can lead to conditions such as amblyopia and reduced stereopsis, which do not improve in adulthood. Ptosis is a cause of deficient visual stimuli, and studies have shown that the incidence of strabismus is higher in patients with ptosis than in the general population [1,2]. A previous study reported the prevalence of strabismus in children with eyelid ptosis [3]. However, insufficient research has explored the development of visual function in cases of congenital mild ptosis that does not cover more than half of the eye. It is essential to carefully monitor such patients and repeatedly assess whether a therapeutic intervention is necessary. Therefore, research on the development of visual function in patients with mild ptosis accompanied by strabismus will provide meaningful insights in clinical practice.

This article published in *Kosin Medical Journal* [4] compared the visual function of patients with simple esotropia and those with esotropia accompanied by ptosis, building upon previous research by the same group that compared visual acuity and stereopsis between patients with simple exotropia and those with exotropia accompanied by ptosis

[5]. These two studies found that in patients with esotropia, ptosis did not affect visual function, including stereopsis, whereas in those with exotropia, ptosis led to a reduction in distance stereopsis and suppression. However, it is important to note that factors such as the timing of strabismus onset and the duration of the condition can influence the development of visual function [6]. Therefore, standardizing the onset, angle, and duration of strabismus is essential for drawing definitive conclusions. In this current study on esotropia, a sub-analysis was conducted based on the degree of ptosis ($0 < \text{marginal reflex distance 1 [MRD1]} \leq 1$ and $1 < \text{MRD1} \leq 2$). Mild ptosis did not affect stereopsis. However, the study did not differentiate between distance and near vision, which could limit the findings since convergence at near distances might have a lesser impact on the development of stereopsis. Additionally, the study did not differentiate between various subtypes of esotropia, such as accommodative esotropia, non-accommodative esotropia, and congenital esotropia. This omission makes it challenging to generalize the results to all forms of esotropia.

Nevertheless, ongoing research, including this study, is likely to contribute to the understanding of visual acuity

Received: September 25, 2024; **Revised:** November 12, 2024; **Accepted:** November 28, 2024

Corresponding Author: Changzoo Kim, MD, PhD

Department of Ophthalmology, Kosin University Gospel Hospital, Kosin University College of Medicine, 262 Gamcheon-ro, Seo-gu, Busan 49267, Korea
Tel: +82-51-990-6857 Fax: +82-51-990-6857 E-mail: changzoo@hanmail.net

© 2024 Kosin University College of Medicine

© This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<https://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

and visual function development in patients with simple esotropia and those with esotropia accompanied by ptosis. Despite several limitations—including its retrospective nature, small sample size, lack of data on post-surgical binocular function, absence of lateralization analysis of ptosis, and no consideration of esotropia types—this study provides valuable suggestions for future research. Nonetheless, the strength of this research lies in its quantitative assessment of binocular function in esotropia patients with congenital ptosis compared to esotropia-only patients.

To enhance the quality and reliability of data, future research should focus on conducting prospective studies and expanding the sample size through multicenter, large-scale studies to improve statistical power and generalizability. Additionally, it is crucial to investigate potential improvements in binocular function following ptosis surgery, particularly if reductions in visual functions, including stereopsis, are observed across various degrees of ptosis. It is also important to perform lateralization analyses to compare visual outcomes between affected and unaffected eyes. Finally, investigating the effects of different types of esotropia on visual acuity and stereoacuity will provide a more comprehensive understanding of the condition.

In conclusion, this study highlights the importance of understanding the development of visual function in patients with esotropia and ptosis. Despite its limitations, the research offers valuable insights and proposes directions for future studies.

Article information

Conflicts of interest

Chang Zoo Kim is an editorial board member of the journal

but was not involved in the peer reviewer selection, evaluation, or decision process of this article. No other potential conflicts of interest relevant to this article were reported.

Funding

None.

Author contributions

All the work was done by CZK.

ORCID

Chang Zoo Kim, <https://orcid.org/0000-0002-0807-6582>

References

1. Srinagesh V, Simon JW, Meyer DR, Zobel-Ratner J. The association of refractive error, strabismus, and amblyopia with congenital ptosis. *J AAPOS* 15:541–4.
2. Lee JE, Kim CZ, Nam KY, Lee SU, Lee SJ. An epidemiologic survey of strabismus and nystagmus in South Korea: KNHANES V. *J Korean Ophthalmol Soc* 2017;58:1260–8.
3. Griepentrog GJ, Mohnsey BG. Strabismus in childhood eyelid ptosis. *Am J Ophthalmol* 2014;158:208–10.
4. Choi H, Kim SJ, Yang S, Hane KE. Stereopsis and clinical features of esotropia patients accompanied by congenital mild ptosis. *Kosin Med J* 2024;39:259–64.
5. Choi HY, Kim SJ, Kim SY, Ahn JH, Lee JE. Binocular function in patients with intermittent exotropia accompanied by unilateral congenital ptosis. *Sci Rep* 2022;12:18286.
6. Read JC. Stereo vision and strabismus. *Eye (Lond)* 2015;29:214–24.