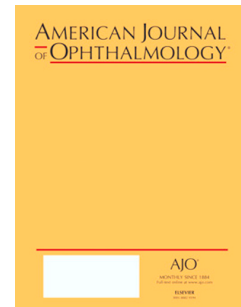


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The effect of botulinum toxin-augmentation on strabismus surgery for large-angle, infantile esotropia

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ABSTRACT

Purpose: To determine whether botulinum toxin augments the effect of strabismus surgery in pediatric patients with large-angle, infantile esotropia.

Design: Retrospective, comparative, case series.

Methods:

Setting: Tertiary-care pediatric hospital.

Study Population: Patients with large-angle, infantile esotropia.

Intervention: Treatment with botulinum toxin-augmented bilateral medial rectus muscle recession ("augmented-surgery group") or traditional bilateral medial rectus muscle recessions ("surgery-only group").

Main outcome measure: The effect of surgery on ocular alignment at 4 months, measured in prism diopters of change per mm of surgery (PD/mm).

Results: There were 14 patients in the augmented-surgery group and 16 patients in the surgery-only group. The mean effect on alignment was significantly greater in the augmented-surgery group compared to the surgery-only group at 4 months (5.7 +/- 1.3 vs 4.0 +/- 1.4 PD/mm, $p = 0.002$) and at 1 year (5.4 +/- 1.2 vs 3.7 +/- 1.2 PD/mm, $p = 0.002$). There was a partial loss of treatment effect between 4 months and 1 year in both groups, which was similar in magnitude ($p = 0.57$). On linear regression, there was a trend toward a positive correlation between botulinum toxin dose and treatment effect, but this was not statistically significant ($p = 0.09$).

Conclusions: Botulinum toxin augments the surgical effect of bilateral medial rectus muscle recessions. Botulinum toxin-augmented surgery may be an alternative to traditional options for large-angle, infantile esotropia. A surgical dosing table is proposed for this technique.

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