Early Post-Operative Angle as a Predictor of Surgical Success in Patients with Intermittent Exotropia

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Introduction:

The main procedures offered for intermittent exotropia are bilateral lateral rectus recession (BLR) or unilateral lateral rectus recession and medial rectus resection (RR).
Currently, there is no clear consensus on which initial post-operative angle to aim for. Some argue the case for a degree of overcorrection. However, being overzealous with overcorrection can also lead to consecutive esotropia.[1] This study aims to assess the relationship between the initial post-operative deviation at first follow up and surgical success in exotropes undergoing corrective surgery. We define surgical success as deviation within 10 PD of orthophoria. [1,2]

Methods:

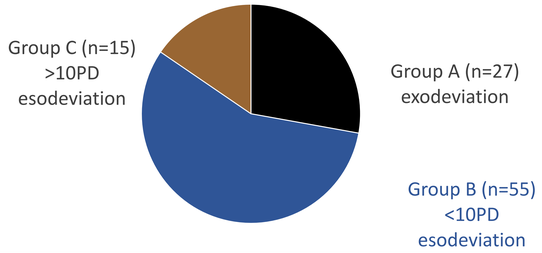
Retrospective chart review for patients who underwent surgery for intermittent exotropia between March 2010 and February 2022 at Royal Free Hospital London.

Exclusion criteria:
- ✕ concomitant surgery of vertical or oblique muscles
- ✕ Neurological or refractive strabismus
- ✕ Previous strabismus surgery
- ✕ Clinically significant amblyopia

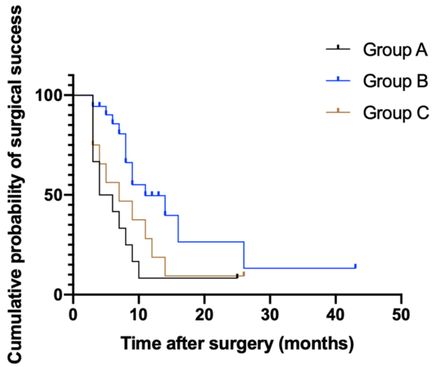
Inclusion criteria:
- ✓ At least 3 month follow up period
- ✓ Primary surgery

Results:

97 patients included, separated into three groups based on **initial post-operative angle** of deviation at **2 weeks**

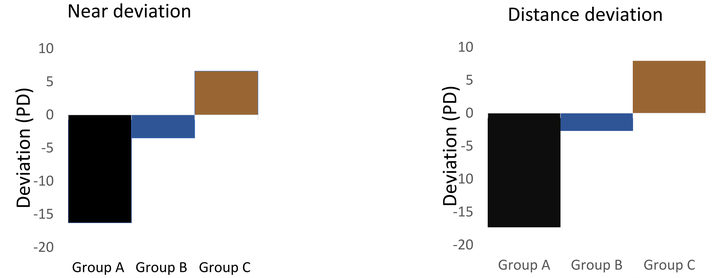


1: Kaplan-Meier Survival analysis for cumulative surgical success rates in each group



The data shows that patients who were initially overcorrected to a minimal extent following surgery showed better surgical success than those who were undercorrected or overcorrected to a greater extent (p<0.01, log-rank test).

2: Deviation at final follow up



Data shows that for near and distance deviation at final follow up Group B showed lowest average deviation

Discussion:

Our data shows that aiming for a initial overcorrection at first follow up (2 weeks) of less than 10PD esodeviation in the treatment of exotropia showed improved success rates.
Limitations of this study:
- Inconsistent follow up period, those with early success tended not to attend lengthy follow ups
- Our definition of success does not include fusional control

Conclusions:

Our data suggests aiming for an initial post-operative deviation of within 10PD esodeviation is beneficially when considering surgical correction of intermittent exotropia.

References:
1. Ruttum MS. Initial versus subsequent postoperative motor alignment in intermittent exotropia. J AAPOS. 1997;1(2):88–91
2. Lee JY, Ko SJ, Baek SU. Survival analysis following early surgical success in intermittent exotropia surgery. Int J Ophthalmol. 2014;7(3):528–533

The authors have no financial interests to declare