

Factors Predictive of Surgical Success in Medial Rectus Resection/Advancement for Consecutive Exotropia

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Background and Objective: Consecutive exotropia after unilateral or bilateral medial rectus recession is a common clinical problem. One surgical intervention to address the misalignment involves isolating and reattaching healthy muscle to the globe. The purpose of this study was determining factors indicative of surgical success in medial rectus resection and advancement with non-adjustable sutures for consecutive exotropia.

Methods: Through retrospective chart review, 118 patients were identified to have consecutive exotropia using billing codes from June 2016 to October 2020 at Indiana University Health. 60 of these patients who maintained adequate follow-up either underwent the above intervention (n = 49) or underwent resection only (n = 11). Exclusion criteria included lack of medial rectus procedure or poor postoperative documentation. Patient demographics and data were gathered, including preoperative and intraoperative measurements, final postoperative deviation, and whether additional surgeries were necessary. Chi-squared and two-sample t-tests were performed to analyze the effect of each parameter on surgical success, defined as distance deviation ≤ 10 prism diopters of esotropia or exotropia at final postoperative visit.

Results: Smaller total intraoperative adjustment—resection plus advancement—was significantly associated with surgical success (p = 0.044). Additionally, smaller preoperative deviations were significantly associated with patients who underwent unilateral surgery (p = 0.0093 near and 0.0021 distance).

Conclusion: Patients with smaller preoperative deviations tended to have better outcomes, and those patients tended to have unilateral surgery. It is unclear whether a smaller deviation might have led surgeons to select unilateral medial rectus surgery or if the smaller deviation itself is a predictor of success. Relatively limited time of follow-up is a limitation in this study, as there is well-documented postoperative drift of increasing exotropia over time. A larger cohort or randomized controlled trial may provide additional insight that could increase the percentage of successful outcomes with a single surgery.