

## **Periosteal muscle fixation for large angle incomitant exotropia**

**Purpose:** To describe the evolution of a modified surgical technique for correcting large angle incomitant exodeviations.

**Methods:** A consecutive series of 26 patients with predominantly third nerve palsy (n = 21, medial rectus palsy = 2, exotropia = 2, Moebius = 1) were operated on between 2005-2018 by a joint Strabismus/Adnexal team. Retrospective analysis included prism dioptre (PD) deviations and complications.

**Results:** Three patients missed follow up leaving 23 patients mean age 37.8 years (range 4-79). All had minimal medial rectus function. Twelve had undergone prior surgery. Pre operative exotropia ranged from 45 to >115 PD. There were 29 operations (19 patients = 1, 4 patients >1) with the medial rectus insertion anchored to retrocaruncular periosteum. The lateral rectus was disinserted then fixated to the lateral orbital rim except for 2 recessions and 5 botulinum toxin injections (4 performed 2005-6). Medial traction sutures were inserted in 21 of 29 surgeries (8 without performed 2005-9) for a mean of 5 weeks (range 2-8). Final review was at a mean 32 months (range 2 to 130) with a mean reduction in deviation of 44 PD (range 10 to 79). The 5 toxin procedures had a mean reduction of 22 PD. There was one complication of exposed ethibond suture that required trimming.

**Conclusion:** Large angle incomitant exodeviations present a difficult surgical challenge. We advocate a combined bi-rectus fixation approach with traction sutures to hold the globe in the primary position. Previous surgery does not preclude further surgery with this technique.