Abstract

The purpose of this study was to derive new formulas to provide an optimal surgical procedure and optimal amount of recession–resection (RR) surgery in intermittent exotropia (IXT) with a disparity in angle of deviation depending on the fixation distance. The records of 117 consecutive patients with IXT who underwent RR surgery between March 2008 and December 2011 at Okayama University Hospital were retrospectively examined. Multivariable linear regression analysis was performed using the observed corrective angle of deviation at distance or near fixation as the dependent variable, and amounts of lateral rectus muscle (LR) recession (mm) and medial rectus muscle (MR) resection, and age at surgery (years) as independent variables. Two simultaneous formulas were derived: corrective angle of deviation at distance fixation (°) = 1.8×recession (mm) + 1.6×resection (mm) + 0.15×age (years) – 6.6, and corrective angle at near fixation (°) = 1.5×recession (mm) + 1.7×resection (mm) + 0.18×age (years old) – 3.8. Comparisons of coefficient values of the formulas between distance and near fixation revealed that LR recession was more affected by the corrective angle in distance than near fixation. MR resection was more affected at near than distance fixation.

We found that our new formulas estimated the appropriate amount of unilateral RR surgery.