Efficacies of preoperative prism adaptation test and monocular occlusion for detecting the maximum angle of deviation in intermittent exotropia

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Abstract

Purpose: The efficacies of prism adaptation test (PAT) and monocular occlusion (MO) and their optimal test durations to detect the maximum angles of deviation at near and distance in eyes with intermittent exotropia (IXT) were assessed and compared.

Methods: We retrospectively reviewed the medical records of 72 patients with IXT, who had undergone the initial strabismus surgery between April 2015 and October 2018 and had been preoperatively tested by PAT and MO. The near and distance deviations measured after 30- and 60-minute PAT and MO were compared with the baseline measurements obtained immediately after prism wear and before occlusion. The measurements and the required durations for obtaining the maximum deviation angle were also compared between PAT and MO.

Results: Compared with the baseline, the near deviation by PAT significantly increased after 30 ($p < 0.05$) and 60 ($p < 0.01$) minutes but not the distance deviation. Besides, the increase in the near deviation after 30 minutes was not significant. By MO, neither near nor distance deviation showed a significant difference from the baseline after 30 and 60 minutes. While the near deviations by PAT were significantly greater than those by MO at 30 and 60 minutes, a similar result was only observed at 30 minutes in the distance deviation.

Conclusion: A 30-minute PAT appears to be more effective than MO in revealing the maximum angle of deviation before strabismus surgery.

Full Text

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Tables

Due to technical limitations, table 1 is only available as a download in the Supplemental Files section.

Figures

Figure 1

The comparison of the near deviations by PAT and MO at the three time points. While the baseline APCT measurements did not significantly differ, the PAT measurements at 30 and 60 minutes were significantly greater than the MO measurements. Analysis used the Wilcoxon signed-rank test (** $p < 0.01$, n.s.: not significant).

Figure 2

The comparison of the distance deviations by PAT and MO at the three time points. The distance deviations by PAT were still greater than those by MO, but the differences were not as distinct as the differences seen in near deviation. Analysis used the Wilcoxon signed-rank test (* p < 0.05, n.s.: not significant).

Supplementary Files

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- [1table.pdf](#)