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The Angle Kappa in Strabismic Individuals

Hikmet Basmak, MD , Afsun Sahin, MD , Nilgun Yildirim, MD , Tuncer Saricicek, MD & Sumru Yurdakul, MD

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Abstract

Purpose To determine angle kappa values in strabismic individuals by means of a synoptophore. Methods One hundred-and-eight strabismic subjects and 102 healthy subjects who served as a control group were enrolled in the study. A complete ophthalmologic examination, including determination of refractive status, best-corrected visual acuity measurement, slit-lamp biomicroscopic anterior segment evaluation, intraocular pressure measurements with a Goldmann applanation tonometer, and dilated fundus examination, was done on all study participants. Orthoptic examination included Krimsky prism reflex test, prism cover test, and duction tests. Strabismic patients were grouped into two categories according to their deviation types: exotropic and esotropic. A synoptophore (Clement Clarke, London, England) with a specially designed slide (Maddox test slide series A White Binding No: 16; Clement Clarke, London, England) was used to measure angle kappa. Results Of the 108

strabismic patients, 62 were males and 46 were females with a mean age of 23.38 ± 3.68 years (range: 8 to 82 years). There were 54 males and 48 females with a mean age of 32.74 ± 1.63 years (range: 7 to 68 years) in the control group. The exotropic group had significantly higher angle kappa values than either the controls or the esotropic group (independent sample t-test, $p < 0.001$). None of the study participants had negative angle kappa values. Higher average kappa values were obtained in left eyes than in right eyes in all three groups (student t-test, $p < 0.01$ for all groups). Conclusion This study showed that exotropic patients have higher angle kappa values when compared to esotropic patients. Ophthalmologists must take the kappa angle into account when performing a Hirschberg or Krimsky test in young and uncooperative patients in order to improve surgical results.

KEYWORDS:

Kappa angle | synoptophore | exotropia | esotropia | strabismus surgery

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