Orthokeratology for slowing myopic progression in a pair of identical twins

Abstract

Purpose: To compare axial length elongation and change in refractive errors in a pair of identical twin wearing single vision spectacles and orthokeratology (ortho-k) lenses respectively.

Case report: The identical Twin A and B, who were 8 years old, were assigned to wear ortho-k and single vision spectacles randomly in a 2-year myopic control study. Myopic progression was evaluated by the change in axial length and in refractive errors. After two years of monitoring, a faster axial length elongation was observed in Twin B who worn spectacles during the study period. The overall change in axial length was 0.52mm (RE) and 0.70 (LE) in Twin A and 0.77mm (RE) and 0.82mm (LE) in Twin B. In terms of cycloplagic refractive errors (myopia), after ceasing lens wear for one month, the changes were 0.37D (RE) and 1.18D (LE) in Twin A. Twin B showed an increase of 1.51D in the right eye and 1.79D in the left eye.

Conclusion: Ortho-k is effective in controlling myopic progression in this case of identical twins. The refractive errors (myopia) do not adequately reflect increases in axial length in ortho-k-treated eyes.