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Three-dimensional analysis of the effects of the treatment on anterior crossbite in the primary dentition

Yasutaka Kaihara[1)], Hideaki Amano[1)], Kazuo Miura[2)] and Katsuyuki Kozai[2)]

1) Department of Pediatric Dentistry, Hiroshima University Hospital
2) Department of Pediatric Dentistry, Hiroshima University Graduate School

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Abstract We performed measurement using a 3-dimensional measurement system in study models of children with anterior crossbite in the primary dentition treated using a chin cap and lingual arch, and evaluated changes in the dentition and occlusion after treatment based on measurement values and also using wire frame models. Comparing with the situation before treatment, the overbite of anterior teeth shows improvement to become shallow and the terminal plane becomes vertical type and the occlusal plane becomes flatter. Labioclination of upper anterior teeth, linguoclination of lower anterior teeth and backward movement of lower dentition are observed. Occlusal view shows that both upper and lower dental arch become semicircular configuration. The width, depth and height of the post-treatment dentition became closer to the standard values. Chin cap and lingual arch treatment for anterior crossbite during early childhood is effective, and also helpful in the normal development of occlusion in children.

Key words Anterior crossbite, Chin cap, Deciduous dentition, Occlusion, Three-dimensional analysis

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