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A Comparison of Cervical Vertebral Maturation Assessment of Skeletal Growth Stages with Chronological Age in Thai between Cleft Lip and Palate and Non-Cleft Patients

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Abstract

Objective: (1) To search for any difference in chronological age related to stages of the cervical vertebral maturation index stages (CVMI) comparing groups of cleft lip and palate (CLP) and non-cleft (non-CLP) subjects; (2) To investigate the relationship between chronological age and CVMI in both groups of subjects.

Material and Method: Cervical vertebrae C2, C3, C4 were assessed on 1,549 cephalometric films (503 CLP films, 1,046 non-CLP films of subjects aged 5 to 18 years) using Hassel and Farman's method.

Results: T-tests showed mean chronological ages of CVMI 2, 3 and 6 were different at $p = 0.001$, 0.024 and 0.016 , respectively. CVMI 1, 4 and 5 showed no significant differences. The CLP group achieved each CVMI score one year ahead of the non-CLP group, except for CVMI 4. Spearman's rank order correlations were $r = 0.80$ (95% CI: 0.76-0.83) for CLP, and 0.77 (95% CI: 0.74-0.79) for non-CLP.

Conclusion: CLP subjects tended to have a slightly advanced growth compared with non-CLP subjects. A high correlation coefficient was found between chronological age and cervical vertebral skeletal maturation.

Keywords: Hassel and Farman's method, Cervical vertebral maturation, CVMI, Chronological age, Cleft lip and palate

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