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Determining skeletal maturation and dental age: As an evaluation of pubertal stage

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Introduction: Children growth and developmental stage plays an important role in early malocclusion therapy, determined by the growth spurt period. Various studies had shown that bone maturation were related to teeth calcification, referring to Cervical Vertebrae Maturation Stages (CVMS) and second permanent molar calcification stage. CVMS was determined using lateral cephalogram radiograph meanwhile panoramic radiograph was used in order to examine teeth calcification stages. Panoramic radiographs were supporting examinations used in clinics.

Objective: To determine CVMS and second permanent molar calcifications as an evaluation of pubertal stages.

Materials and methods: This was a cross sectional study with study population of panoramic and cephalometric radiographs from patients 8-15 years of age receiving malocclusion treatment in Pediatric Dentistry, from January 2013 until December 2015. CVMS examination was conducted using Bacetti method, while second permanent molar calcification was measured using Demirjian technique.

Results: Panoramic and cephalometric radiographs meeting the inclusion criteria were 106 radiographs, 31 radiographs of male patients and 75 radiographs from female patients. Result of this study showed a significant relationship between skeletal maturation and teeth calcification stage with r_s 0.83 and p-value 4.564.

Conclusion: CVMS and second permanent molar calcification stage could be used into account to determine children puberty stages.

Keywords: Skeletal Maturation, Dental age