Surface structure study of crystal hydroxy-apatite from fluorosis enamel

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Abstrak

Fluorosis is a condition due to ingestion of excessive amounts of flour which can cause the change in tooth structure and strength. However, there is still lack of explanation on the surface structure of crystal hydroxyapatite that influences the microscopic characteristic of fluorosis enamel. Objectives: To investigate the surface structure of crystal hydroxy-apatite in fluorosis enamel. Materials and methods: Determination of fluor concentration and the surface structure of normal and fluorosis enamel specimen were carried out by using Scanning Electron Microscopy/ Energy Disperse X-Ray (SEM/ EDX). Results: Fluor concentration of fluorosis enamel was significantly higher with increased surface roughness and porosity than normal enamel. SEM observation also showed gaps areas between enamel rods and visible aprismatic zone in some regions. Conclusion: High level of fluor concentration on fluorosis enamel indicated the subtitution of OH- by F- increasing the surface roughness of enamel surface.