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Evaluation of the Relationship between Fluorosis and Stylohyoid Ligament Calcification Detected on Panoramic Radiograph

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Abstract : Stylohyoid ligament is a connective tissue extending from apex of the styloid process to small horn of the hyoid bone. The normal length of styloid process ranges from 20 to 30 mm and measurements more than 30 mm is named stylohyoid ligament calcification (SLC). Fluorosis is a health problem that arises in individuals who intake large amounts of fluor long periods of time. The aim of this study was to investigate the effects of fluorosis on SLC. This study has been conducted on 100 patients who had SLC detected on panoramic radiograph. The study group was consisted of 50 patients with dental fluorosis and control group was consisted of 50 patients without dental fluorosis. Length and thickness of SLC were measured and the type of SLC was determined on panoramic radiographs. There was no statistically significant differences between the study and control group for SLC length, thickness and type. The thickness of left and right SLC of severe dental fluorosis group was statistically significant higher than moderate dental fluorosis group ($p < 0,05$). Cervicopharyngeal trauma, tonsillectomy, endocrine disease in menopause, persistent mesenchymal tissue, mechanical stress have reported as etiology of SLC in the literature and studies are still ongoing. It was reported that fluorosis as a factor on calcification of some ligaments in body (posterior longitudunal ligament, ligamentum flavum and transverse atlantal ligament) previously but relationship between fluorosis with SLC was not investigated. Our study is unique because it is the first study on SLC thickness measurements on panoramic radiographs and the relationship between fluorosis and SLC to our knowledge. According to the obtained results, it is thought that fluorosis may have an effect on SLC in thickness due to the relationship between dental fluorosis severity with SLC thickness and this study will contribute to the progress of the future studies.

Keywords : calcification, fluorosis, ligament, stylohyoid
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