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Prevalence of Tonsilloliths and Other Calcifications in Panoramic Radiographs

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Objectives We aimed to investigate the prevalence of tonsilloliths detected via digital panoramic radiographs among dental patients, determine whether there is an association between their occurrence and the presence of other calcifications, and if it is related to age.

Methods The study data included 6000 panoramic radiographs of patients aged 40-90 visiting Vilnius University Hospital Zalgiris Clinic from 2014 to 2016. The presence and distribution of tonsilloliths and other calcifications were assessed using Planmeca Romexis Viewer software. The Chi-Square Test and Mann-Whitney U test on IBM SPSS Statistics 27.0 software were used to analyse the associations between the study variables. The significance level was set at p=0.05.

Results Tonsilloliths were observed in 329 (5.5%) of the 6000 panoramic radiographs. The mean age of patients was 61 years (SD10.4), of whom 170 were females (51.7%) and 159 were males (48.3%). 156 (47.4%) patients had tonsilloliths present bilaterally; for 84 cases, tonsilloliths (25.5%) were located on the left and 89 on the right side (27.1%), p=0.226. The mean quantity of identified tonsilloliths was equal to 4 (SD2.9). Furthermore, this measure was not associated with age, p=0.174. In patients aged 45-65, other calcifications, in addition to the presence of the tonsilloliths, were visible in 64 (19.5%) participants; in 66-75-year-olds, they were identified for 31 patients (9.4%) and in 76-90-year-olds - for 15 (4.6%), p=0.024.

Conclusions The prevalence of tonsilloliths in the tested population was 5.5%. In most cases, they were detected unilaterally, appearing in groups of four. Although tonsilloliths were not related to age, the occurrence of other radiographically visible calcifications together with tonsilloliths decreased with age. These findings underscore the need for future studies with a larger sample and randomized design to validate and expand upon these results.