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Relationship between Tongue Coating and Halitosis in Periodontally Healthy Subjects

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Abstract: Periodontally healthy subjects as well as patients with periodontitis complain of halitosis. We focused on physiologically confirmed halitosis patients to examine the relationship between volatile sulfur compounds (VSC) in mouth air and the tongue coating. We assessed 6 subjects who were in good general health. After improving their periodontal status, VSC in their morning breath were measured via gas chromatography. Subsequently, professional tooth cleaning of all teeth was performed, and VSC were measured. Immediately following the latter procedures, tongue cleaning was performed, and VSC were measured again. Subsequently, the bacteria in the tongue coating, which were removed by tongue cleaning, were anaerobically cultured on blood agar and identified using Gram's stain. There was a significant reduction in VSC after tongue cleaning ($P<0.05$). There was no positive correlation between the number of bacteria removed in the tongue coating and the decrease in VSC. However, there was a positive correlation between the distribution of Gram-positive rods and the decrease in VSC ($p<0.10$). It was suggested that the main source of oral malodor in periodontally healthy subjects might be the tongue coating. It was also concluded that bacterial distribution in the tongue coating might affect the concentration of VSC in the mouth air of periodontally healthy subjects.

Key words: Halitosis, Tongue coating, Periodontally healthy subjects

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