Transient bacteremia after removal of a bonded maxillary expansion appliance

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Introduction: The aim of this study was to investigate the presence of transient bacteremia after the removal of a modified bonded rapid maxillary expansion appliance. Methods: The sample consisted of 25 subjects (15 girls, 10 boys; mean age, 14.4 years; range, 12.2-16.6 years). All subjects underwent rapid maxillary expansion at the start of the orthodontic treatment with the same type of appliance. Two 10-mL blood samples were taken, the first as a baseline and the second 3 minutes after removal of the appliance. All blood samples were incubated in an automated blood culture system, and bacteria were identified by using conventional biochemical methods and API kits (bioMérieux, Marcy l’Etoile, France). Results: Overt soft-tissue bleeding was observed in 11 of the 25 patients during appliance removal, and 8 of 25 patients showed bacteremia after appliance removal. The data were analyzed with the Fisher exact test. No statistically significant relationship was found between overt bleeding and bacteremia incidence ($P=0.054$). Conclusions: Because transient bacteremia is caused by trauma from the removal of the modified bonded rapid maxillary expansion appliance, orthodontists should consider the possibility of bacterial endocarditis in at-risk patients when using splint-type tooth-and-tissue–borne rapid maxillary expansion appliances. (Am J Orthod Dentofacial Orthop 2009;135:190-3)