

論 文 要 旨

**First molar cross-bite is more closely associated with
a reverse chewing cycle than anterior or pre-molar cross-bite during mastication**

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A posterior cross-bite is defined as an abnormal bucco-lingual relationship between opposing molars, pre-molars or both in centric occlusion. Although it has been reported that patients with unilateral posterior cross-bite often show unique chewing patterns, the relationship between the form of cross-bite and masticatory jaw movement remains unclear in adult patients. The objective of this study was to investigate masticatory jaw movement among different forms of cross-bite. One hundred and one adults were recruited in this study: 27 had unilateral first molar cross-bite (MC group); 28, unilateral pre-molar cross-bite (PC group); 23, anterior cross-bite (AC group); and 23, normal occlusion (control group). Masticatory jaw movement of the lower incisor point was recorded with six degrees of freedom jaw-tracking system during unilateral mastication. Our results showed that the reverse chewing ratio during deliberate unilateral mastication was significantly larger in the MC group than in the PA ($P < 0.001$), AC ($P < 0.001$) and control ($P < 0.001$) groups. These findings suggest that compared to the anterior or pre-molar cross-bite, the first molar cross-bite is more closely associated with a higher prevalence of a reverse chewing cycle.