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The effects of premolar-extraction: A long-term comparison of outcomes in “clear-cut” extraction and nonextraction Class II patients

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ABSTRACT

Discriminant analysis was used to assess the anatomical basis of the extraction/nonextraction decision in 238 former Saint Louis University Class II edgewise patients. The resulting discriminant scores (based on six measures of protrusion and crowding) were used to divide this parent sample into three prognostic subgroups: clear-cut extraction, clear-cut nonextraction, and a borderline stratum containing both extraction and nonextraction patients. The “clear-cut” patients—those at the tails of the distribution—were then contacted and asked to return for follow-up records (cephalograms, models, clinical examination); in the end, 62 (33 extraction and 29 nonextraction) were recalled. The average post-treatment interval was about 15 years.

Premolar extraction produced a significantly greater reduction in hard-and soft-tissue protrusion. During the post-treatment period, however, both groups underwent essentially the same change: decreased profile convexity and a pattern of dental change/relapse that was correlated with antero-posterior mandibular displacement. Because of their greater initial crowding and protrusion, the various effects summed to make the extraction patients significantly more protrusive at recall. Both treatments produced mesial mandibular displacement, extraction significantly more than nonextraction; however, at recall the two groups did not differ with respect to the signs and symptoms of dysfunction.

The present findings, therefore, fail to support the common, influential belief that premolar extraction frequently causes “dished in” profiles, “distalized” mandibles, and, ultimately, craniomandibular dysfunction.

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