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[\[PDF \(867K\)\]](#) [\[References\]](#)**A Numerical Simulation of Orthodontic Tooth Movement Produced by a Canine Retraction Spring**[Yukio KOJIMA](#)<sup>1)</sup>, [Toshihiro MIZUNO](#)<sup>2)</sup>, [Sachio UMEMURA](#)<sup>3)</sup> and [Hisao FUKUI](#)<sup>4)</sup>

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**Abstract:**

Tooth movements produced by a canine retraction spring were calculated. Although a gable bend and an anti-rotational bend were incorporated into the spring, the canine tipped and rotated initially. Retraction force decreased and moment-to-force ratio increased after the spring legs closed. Then, the initial tipping and rotation began to be corrected. As a result, the canine moved almost bodily after a prolonged period of time. Such tooth movements cannot be estimated from the initial force system. The gable bend decreased tipping movement, but increased rotational movement. On the other hand, the anti-rotational bend decreased rotational movement but increased tipping movement. In other words, one bend decreased the effect of the other, when both bends were incorporated in the spring.

**Key words:**[Orthodontics](#), [Canine retraction](#), [Finite element method](#)[\[PDF \(867K\)\]](#) [\[References\]](#)Download Meta of Article [\[Help\]](#)[RIS](#)

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