

The combined use of computer-guided, minimally invasive, flapless corticotomy and clear aligners as a novel approach to moderate crowding: A case report

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The aim of this case report was to describe an innovative orthodontic treatment method that combined surgical and orthodontic techniques. The novel method was used to achieve a positive result in a case of moderate crowding by employing a computer-guided piezocision procedure followed by the use of clear aligners. A 23-year-old woman had a malocclusion with moderate crowding. Her periodontal indices, oral health-related quality of life (OHRQoL), and treatment time were evaluated. The treatment included interproximal corticotomy cuts extending through the entire thickness of the cortical layer, without a full-thickness flap reflection. This was achieved with a three-dimensionally printed surgical guide using computer-aided design and computer-aided manufacturing. Orthodontic force was applied to the teeth immediately after surgery by using clear appliances for better control of tooth movement. The total treatment time was 8 months. The periodontal indices improved after crowding correction, but the oral health impact profile showed a slight deterioration of OHRQoL during the 3 days following surgery. At the 2-year retention follow-up, the stability of treatment was excellent. The reduction in surgical time and patient discomfort, increased periodontal safety and patient acceptability, and accurate control of orthodontic movement without the risk of losing anchorage may encourage the use of this combined technique in appropriate cases.

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