

CASE REPORT

Osseous Ridge Augmentation with Orthodontic Extraction

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Orthodontic extraction has been used to improve or eliminate osseous defects, providing a sounder base for periodontal surgery or prosthetic restoration.¹⁻⁷

The object of such extraction is to avoid an osseous collapse that would occur after a conventional extraction. Orthodontic movement improves bone height by filling the alveolus, thus providing better esthetics. It is a more reliable method than surgical procedures such as osseous grafts, connective tissue grafts, or tissue-guided membranes, which can have problems with tissue compatibility and may not provide enough osseous filling.⁸⁻¹⁰

According to the principles of biological tooth movement, when properly regulated extrusive forces are applied to a tooth, they will stretch the gingival and periodontal fibers, stimulating cellular changes that result in selective resorption and deposition of alveolar bone.^{2,5-11} This produces a coronal shift of the gingiva and bone, while the mucogingival junction remains stable.¹²

Diagnosis

A 47-year-old female was referred for orthodontic treatment prior to prosthetic restorations. Clinical examination re-

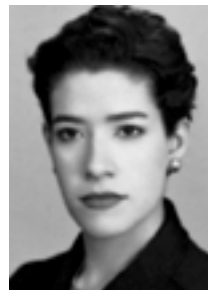
vealed a Class I occlusion with a 4mm overjet, 1mm overbite, moderate mandibular crowding, and minor maxillary crowding (Fig. 1). Periodontal examina-



Fig. 1 47-year-old female patient before treatment, showing maxillary right cuspid with advanced alveolar loss.



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Fig. 2 Orthodontic extraction of maxillary right cuspid with box loop in .016" × .022" stainless steel archwire.

tion showed generalized periodontal defects, with severe involvement of the maxillary right cuspid.

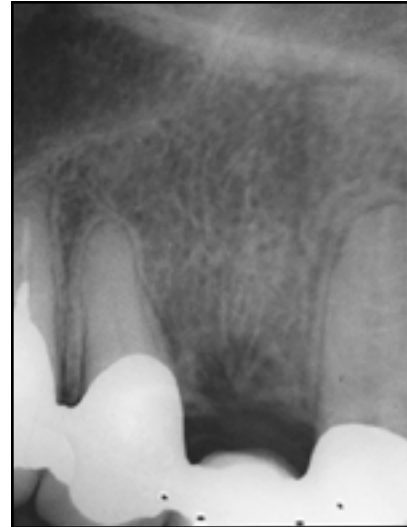
Treatment

The maxillary right cuspid was extracted orthodontically to avoid osseous collapse and improve bone height and esthetics. The device used was a box loop in an .016" × .022" stainless steel archwire (Fig. 2), activated 1mm per month for eight months.

Total treatment time was 24 months (Fig. 3).



Fig. 3 Patient after 24 months of orthodontic treatment and placement of partial fixed prosthesis.



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