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“Adjusting dento-alveolar morphology with orthodontic mini-implants (miniscrews). A clinical case report”

ABSTRACT.

Objectives

The aim of this article is to present and discuss the clinical uses, benefits and drawbacks of the miniscrew implants used to reorder and adjust the dento-alveolar morphology of the overerupted maxillary molars.

Materials and Methods

Four machined orthodontic mini-implants (MIS– Israel) were inserted, under local anesthesia (Ultracain DS– ESPE), in D3 bone density (350–850 HU) (Misch classification) based on the number of Housfield units (HU). A minimal incision was performed in order to expose the bone. A single drill was used to penetrate the cortical bone and the implants were inserted under the correct angle using a hand driver. All implants had a good primary stability. The next phase was immediate loading with an elastic chain and after one month with a coil spring 150 g GAC, maintained by composite resin, and elastic chain.



The mini-implants loaded with elastic chain and a Ni–Ti close coil spring 150 g GAC, maintained by composite resin.

Results

During seven months, an intrusion was obtained, with four orthodontic miniscrews, without full-arch appliances. Radiographically showed intact lamina dura around the first left superior molar and no root resorption and the final result can be observed.

Conclusion

The use of miniscrews is highly indicated as anchorage for the intrusion of maxillary molars. The patient was treated using mini-implants without fullarch technique, which offered a good esthetic alternative. Short-term molar intrusion and change of alveolar process morphology was achieved within a limited amount of time, without clinically detectable apical root resorption. No discomfort has been reported in our case. The machined mini-implants (MIS, Israel) used in the present article proved to be efficient in maintaining the type of extradental anchorage required in this clinical situation. None of the implants showed signs of osseointegration and could easily be removed from the bone.

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