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# OSSEOINTEGRATED IMPLANTS:

## AN EASY AND COMFORTABLE SOLUTION TO MAXIMUM ORTHODONTIC ANCHORAGE

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In the last twenty years several clinicians have adopted strategies to reduce the movement of anchor teeth. Dental implants may provide ideal anchorage since they are incapable of movement within bone. Animal studies have demonstrated that endosseous implants in dogs can be reliably used for anchorage against horizontal (mesio-distal) orthodontic tooth movement [1,2]. Human trials have also demonstrated the successful use of implants as anchorage for horizontal forces.

Case Report AA

A 45-year-old male had a maxillary first bicuspid and first molar missing (extracted for decay reasons more than 10 years before) (fig.1)
Tipping of the second bicuspid and second maxillary molar closed the first molar space leaving approximately a 12-mm space in the first bicuspid area (fig.2).

Treatment plan

The patient selected orthodontic treatment to reduce the bicuspid space for an improved prosthodontic replacement. The treatment plan incorporated sectional arches and elastic chains from the second bicuspid and the second upper molar to an implant (Exacta CV1, 11mm Biaggini-Ormco-Italia), placed in the first bicuspid area, to reduce the maxillary bicuspid space.

Treatment time and results

At least six months were allowed for the implant to heal and the orthodontic space closure took five months (fig. 3, 4).

Biomechanics

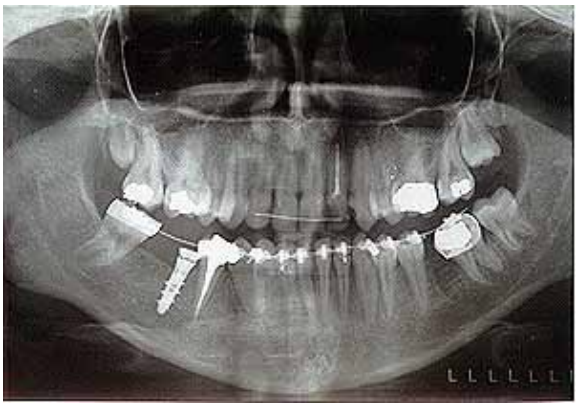
Bands were placed on the second bicuspid and the second maxillary molar and on implant acetalyc abutment. Palatal cleats were soldered on each band.
A .016"SS sectional archwire with elastic chain was placed buccally. A palatal elastic chain was used from the molar to the bicuspid cleat.
At the completion of orthodontic therapy, a final crown was placed on the implant.

Case Report BB

This 18-year-old female patient presented with severely decayed lower right first and second molars and lower left first molar, all requiring extraction (fig 5).

Treatment plan

Lower brackets were placed from the left second molar to the right first bicuspid to align the lower arch and to close the left first molar site.
The lower right third molar required to be moved bodily to replace the lower second molar.



A first molar implant (Exacta CV1, 11mm Biaggini-Ormco-Italia) was placed midway through the orthodontic treatment and it was used for anchorage (fig. 6). Following healing of the implant, a .016" SS sectional archwire and elastic chains from the implant to the third molar were placed

Treatment time and results
Four months were allowed for the implant to heal while space closure took ten months (fig. 7).

Case Report CC

This 40 year-old female patient presented with an impacted lower left second bicuspid. The lower left first bicuspid and molar were extracted for decay reasons (fig. 8-9).

Treatment plan

The treatment plan involved extrusion of the lower left second bicuspid using an implant (Exacta CV1, 11mm Biaggini-Ormco-Italia) in the first bicuspid area as anchorage and a .016" TMA coil spring from the implant to the buccal aspect of the impacted tooth where a button was bonded (fig. 10)

Treatment time and results

Four months were allowed for the implant to heal. A .016" TMA coil spring was placed for 2 months. The second bicuspid was successfully extruded (fig. 11) in a very short time.

anchorage. Based on this assumption, Roberts W.E, Nelson C.L. and Goodacre C.J. report a case of rigid implant anchorage to close mandibular first molar extraction sites and demonstrate the viability of retromolar implant anchorage for orthodontic management.

Salvato et Coll. showed implant anchorage to upright lower molars[5]. An intact mandibular arch (first molar to first molar) generally provides adequate anchorage for mesial translation of a third molar to closea second molar space. Class I occlusion and good facial form usually dictate against mandibular space closure with intraoral anchorage, because of the relatively high value of second and third molars. Implants can be helpful in reducing treatment time and avoiding any deleterious effects on natural teeth during orthodontic treatment.

An acetaliyc abutment with a screw is an inexpensive and useful device since it does not involve complicated surgical and prosthodontic procedures and it is easy to applyonto the implant without any laboratory work.

Other advantages are:

· it is comfortable,

· the abutment is inexpensive (it is made of acetalyc),

· it offers aesthetic results (temporary crowns can be cemented),

· it reduces chances of breakage,

· it requires adjustments only every 40 days or so, since continuous forces can be applied ( using TMA wires).

The main disadvantages are costs of the surgical procedure (implant placement), implant healing time (4-6 months), and patient age : implants are recommended inpatients over the age of 18.

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