

6) Molar intrusion of extruded molars

In conventional mechanics, intrusion of molar teeth which are extruded into the opposite arch of edentulous area is one of the most challenging work in orthodontics. However, after using microimplants, molar intrusion of extruded teeth is not a difficult one. Microimplant can be place both buccally and palatally (Fig.26). Usually the distance from the microimplant to the attachments is relatively short. So, elastomeric thread is useful material to apply orthodontic force. This kind of molar intrusion is only indicated when there is no deep periodontal pocket & inflammation around root.



Fig. 26. Buccal & palatal microimplants for intrusion of extruded molars.

7) Molar protraction

For molar protraction, microimplant can be placed between canine and 1st premolar or 1st premolar and 2nd premolar (Fig. 27). If the anterior teeth should not be moved labially, loop mechanics is recommended. However, the anterior teeth should be moved labially, sliding mechanics is also added.

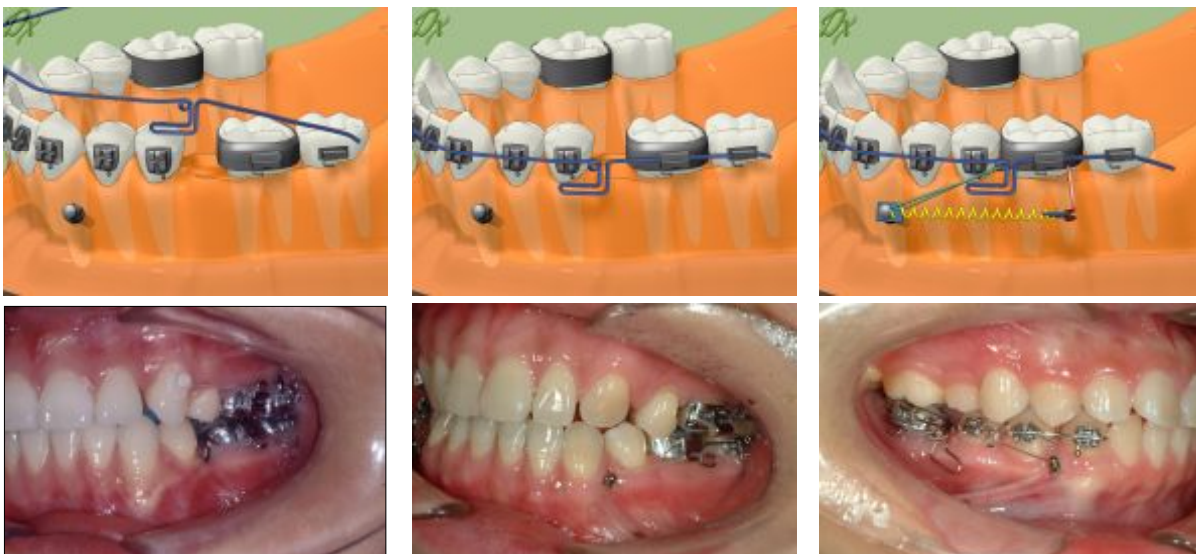


Fig. 27. Mandibular buccal microimplant for molar protraction.

8) Mid palatal or para-mid palatal microimplants

Mid palatal site is used for any kind of tooth movement of the maxillary teeth including unilateral constriction of arch. The microimplant also can be attached to a transpalatal arch (Fig.28).

This region offers excellent microimplant sites and contains good quality cortical bone, although it does contain osseous sutures. Thicker microimplants work better in areas with sutures. If the suture does not offer enough resistance in young patients, the microimplant should be placed adjacent to the midpalatal suture.

If the transpalatal arch and microimplant are connected, the posterior teeth can be moved mesially and distally by applying force from the microimplant to the transpalatal arch. However, if the microimplant is placed in the midpalatal area, access and applying forces are a little difficult.

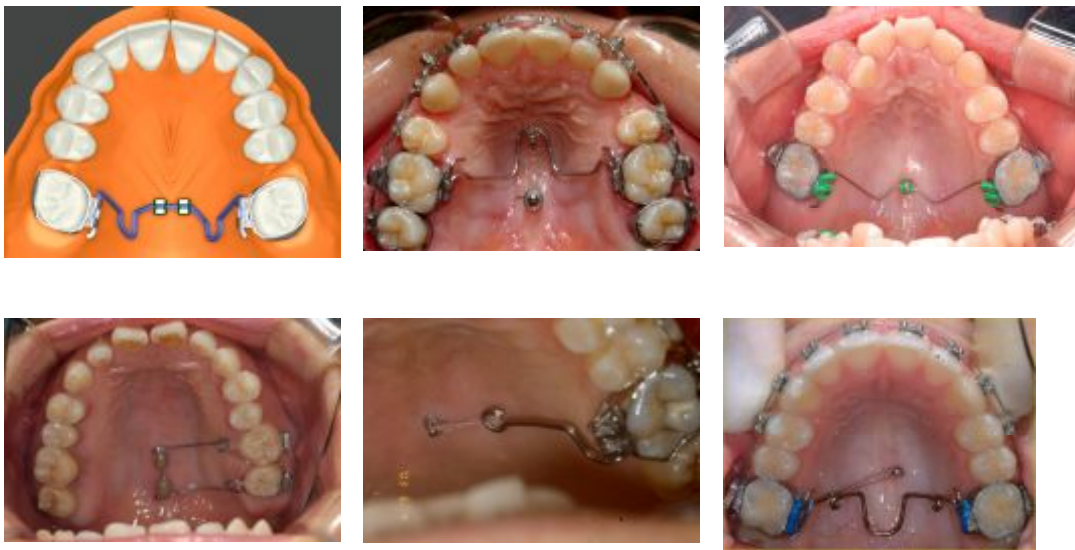


Fig.28. Various clinical applications of the midpalatal and para-midpalatal microimplants.

10. Concluding remarks

The microimplant system which we have developed has variable sizes and lengths for orthodontic anchorage. Microimplants are small enough to be placed virtually in any area of the mouth, if there is bone available. Also, the placement of a microimplant is not a dangerous. It can be placed without mucoperiosteal incision or flap, so there is almost no pain and swelling after implantation. Routine placement of a microimplant takes less than a few minutes. Orthodontists and general dentists can place microimplants themselves.

Unfortunately, however, we cannot achieve a 100% success rate when we place microimplants for temporary orthodontic anchorage. Maxillary microimplants have had a high success rate of more than 90%, a

rate that is similar to that of prosthodontic implants. But, still the success rate of mandibular microimplants is less than 90%. So, one of our mission is to find out the way of increasing success rate dramatically.

Anyhow, microimplant anchorage has become one of the most effective and powerful media to realize absolute anchorage, which until now was one of the biggest dreams of the practicing orthodontist. This treatment approach can bring about a paradigm shift in orthodontic treatment planning in the new millennium. By adding this new type of anchorage system to the armamentarium of the practicing orthodontists, we can broaden the domain of orthodontic treatment possibilities. Many other applications for microimplant anchorage will be developed by creative orthodontists in the near future.

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