

Single Tooth Implants of Canines in Combination with Orthodontic Treatment

Gabriele WATZER-HERBERTH, Armin WATZER-HERBERTH

Introduction:

To obtain a satisfactory aesthetic smile, it often is necessary to combine orthodontic and implantological methods. Thus, improvement of tooth position and replacement of missing teeth can be achieved at the same time.

Material and Methods:

A 30-year old female patient complained about the unsatisfactory aesthetic appearance of her smile. She showed persisting deciduous upper canines, an Angle class II malocclusion, an increased overbite, spacing of maxillary incisors and a gemination of the tooth 32.

On X-ray both upper canines 13 and 23 were impacted, positioned in a nearly horizontal position. The tips of their crowns were crossing the roots of the lateral incisors, overlapping the mesial contour of the roots of the central incisors.

Both impacted upper canines were removed surgically, but the deciduous canines were initially left in place. Orthodontic treatment was started immediately thereafter. The central incisors 11 and 21 were intruded and palatal root-torque was applied. Space closure of the upper incisors was achieved. In the posterior segments the intercuspitation (Angle class II) was left unchanged (asymmetric tooth size discrepancy due to gemination of left lateral lower incisor, patient's wish for short orthodontic treatment).

After 11 months of treatment, both deciduous canines were removed. Two Xive® CellPlus®-implants (length 15mm, diameter 4.5mm) were inserted into the extraction sites. Provisional restorations (ProTemp®, Espe®) were modelled on implant mounts called TempBase®. It was made sure that no contact occurred in central or lateral occlusion. The orthodontic appliance had no contact to the provisional crowns. Thus, immediate use of the implants could be achieved without functional load.

The orthodontic treatment was continued for another six months to achieve retention of tooth position, thereafter the appliance was removed. The TempBase® abutments and the provisional restorations then were changed for a definitive restoration: Porcelain-fused-to-metal crowns (Dental laboratory: Zahnlabor Dieter Ribarich, Baden bei Wien) were cemented onto EstheticBase® abutments.

Conclusion:

Many aspects have to be taken into account when treating impacted canines, and it is not always wise to attempt surgical exposure and orthodontic eruption and alignment (1). Patients who wish to improve their aesthetic appearance, have to be treated accordingly. Several studies have shown that implants in the anterior maxillary region are safe even when used to bear immediate provisional restorations (2,3,4). This report shows the effectiveness of a combined orthodontic and implantological treatment in private practise.

Literature:

1. Bishara SE. Impacted maxillary canines: a review. *Am J Orthod Dentofacial Orthop* 1992; 101:159-171
2. Kan JY, Rungcharassaeng K, Lozada J. Immediate placement and provisionalization of maxillary anterior single implants : 1-Year prospective study. *Int J Oral Maxillofac Implants* 2003 ; 18(1) : 31-39
3. Lorenzoni M, Pertl C, Zhang K, Wimmer G, Wegscheider WA. Immediate loading of single-tooth implants in the anterior maxilla – preliminary results after one year. *Clin Oral Impl Res* 2003 ; 14 : 180-187(8)
4. Wöhrle PS : Single-tooth replacement in the aesthetic zone with immediate provisionalization : fourteen consecutive case reports. *Pract Periodontics Aesthet Dent* 1998; 10(9): 1107-1114