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CASE REPORT:

ORTHODONTIC BRACKET ARCH BAR AS MEANS OF TREATMENT
OF TRAUMATIC BILATERAL TRIPLE MANDIBULAR FRACTURE COMBINED
WITH TEETH DISLOCATION IN CHILDREN
VARES Y., MEDVID Y., CHEGRYNEC N.

KONSENSUS DOKUMENT/CONSENSUS DOCUMENT/КОНСЕНСУС ДОКУМЕНТ:

KONSENSUS BETREFFEND 16 ANERKANNTEN UND KLINISCH BEWÄHRTE
METHODEN UND UNTERMETHODEN FÜR DIE PLATZIERUNG VON
KORTIKO-BASALEN ORALEN IMPLANTATEN

CONSENSUS REGARDING 16 RECOGNIZED AND CLINICALLY PROVEN METHODS
AND SUB-METHODS FOR PLACING CORTICOBASAL® ORAL IMPLANTS

КОНСЕНСУС, ПОСВЯЩЕННЫЙ 16 ПРИЗНАННЫМ И КЛИНИЧЕСКИ ПОДТВЕРЖДЕННЫМ
МЕТОДАМ И СУБМЕТОДАМ УСТАНОВКИ КОРТИКОБАЗАЛЬНЫХ ДЕНТАЛЬНЫХ
ИМПЛАНТАТОВ (CORTICOBASAL® ORAL IMPLANTS)

CASE REPORT:

FUNKCIONALNA I ESTETSKA INDIKACIJA ZA TRETMAN DENTALNIM
IMPLANTATOM I MOMENTALNO OPTEREČENJE
IHDE S., ŠIPIĆ O.

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Orthodontic bracket arch bar as means of treatment of traumatic bilateral triple mandibular fracture combined with teeth dislocation in children

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Key Words

mandibular fractures, tooth dislocation, intermaxillary fixation, non-removable orthodontic technique, bracket arch bar

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Introduction

Despite the current trend in maxillofacial surgery to treat pediatric mandibular fractures of different location with “rigid” or functionally-stable fixation of bone fragments with various fixation devices such as resorbable [2] or non-resorbable [1] mini plates, conservative treatment with prolonged (up to 3-4 weeks) intermaxillary fixation still has a considerable share in treatment plans of traumatic mandibular fractures in childhood. Unfortunately, a lot of conventional methods of maxillomandibular splinting, and dental wiring techniques in particular, as well as the ligation of teeth have proven to be highly disadvantageous in young patients in terms of the severe damage of periodontal tissues, low hygiene, painful and stressful procedure which require adequate anesthetization and gives rise to the need for alternative methods of intermaxillary fixation [6,10]. Moreover, the employment of lag (compression) screws for conduction of temporary or prolonged maxillomandibular fixation which is popular nowadays in adult fully dentate patients is contraindicated in children age because of high risk of teeth buds damaging in cases of mixed dentition [5].

According to the results of statistical studies conducted in Ukraine, mandibular fractures are often (up to 40% of cases) combined with injuries of individual teeth or groups of teeth. The treatment of such combined traumatic injuries is quite difficult, since it is necessary to determine the tactics regarding injured teeth, which depends on many factors, including the age of the patient

(temporary or permanent tooth), the condition of the injured tooth (intactness), the degree of damage to the alveolar process and the choice of reposition and fragment fixation method. Therefore, it is important to choose the optimal method of mandibular immobilization, which would ensure the simultaneous fixation of the dislocated teeth.

Present article is a case study and reports the results and outcomes of treatment of traumatic bilateral triple mandibular fracture combined with intrusive dislocation of upper incisors by means of orthodontic bracket system for a prolonged maxillomandibular immobilization. We analyse the benefits of a suggested method and compare it with conventional procedures of intermaxillary fixation.

Case report

The patient, S., 9 y.o., accompanied by his parents, referred to the Department of Maxillofacial surgery of Lviv National Medical University on 18.06.2018, with complaints on a sharp pain in mandible, especially when articulating, bleeding from oral cavity, pain in upper frontal teeth, presence of a soft tissue wound in chin area. According to the case history, he fell on the ground during bike riding. After the clinical and radiological examination, he was diagnosed with “Traumatic bilateral triple mandibular fracture; in the left and right condylar area and symphysis without fragments displacement. Traumatic intrusive dislocation of 11,21 teeth” (Fig.1,2). By the method of

electric pulp testing we revealed the partial loss of sensitivity in the dislocated 11,21 teeth which penetrated partially the floor of the nose. On the day of admission, a primary surgical debridement and suturing of the wound in the chin area was carried on under local anesthesia.

In accordance with the bioethic regulations, the patient's parents signed the formal consent for a suggested treatment which included general anesthesia, surgical repositioning of dislocated 11,21 teeth, closed reduction by means of prolonged maxillomandibular fixation using orthodontic bracket arch bars.

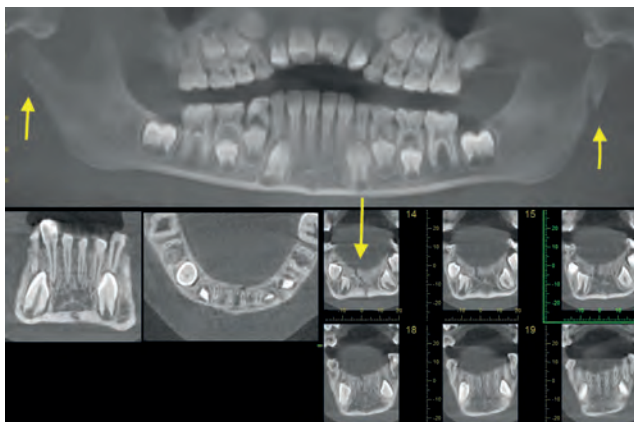


Fig. 1: Fragment of CBCT of pat. S., 9 y.o. on admission. Diagnosis: "Traumatic bilateral triple mandibular fracture; in the left and right condylar area and symphysis without fragments displacement. Traumatic intrusive dislocation of 11,21 teeth (Fracture lines are indicated by arrows).



Fig. 2: Intraoral picture of pat. S., 9 y.o. on admission. Traumatic intrusive dislocation of 11,21 teeth.

19.06.2018 under general anesthesia a surgical repositioning of 11,21 teeth and intermaxillary fixation by means of non-removable orthodontic technique. In the course of the surgery we used brackets within the 54-65 and 75-84 teeth and sidelong intermaxillary elastics (rings) (Fig.3). We used the brackets of Victory® series with hooks (characteristics O* TQ, O*ANG, O22) of 3M® Unitek (USA), which were fixed to teeth by a standard procedure (etching enamel, apply the adhesive, fix the brackets with light-curing material). Then the bracket was affixed with a series of 3 elastic layered O-arch wire ligatures (0,21-0,22 diameter) and elastic rings. The intermaxillary fixation itself was performed by means of connecting opposite bracket hooks with orthodontic rubber rings in correct occlusal relationship. Additionally, maxillary bracket arch bar allowed us to stabilize dislocated 11,21 teeth in adequate anatomic position (Fig. 3).



Fig. 3: Intraoral picture of pat. S., 9 y.o. Surgical repositioning of dislocated 11,21 teeth. Fixation of maxillary and mandibular bracket arch bars.

On the control OPG 3 d after surgery a correct anatomic position of 11,21 teeth, fixation of jaws in normal occlusal relationship as well as absence of mandibular fragments displacement were revealed (Fig. 4).

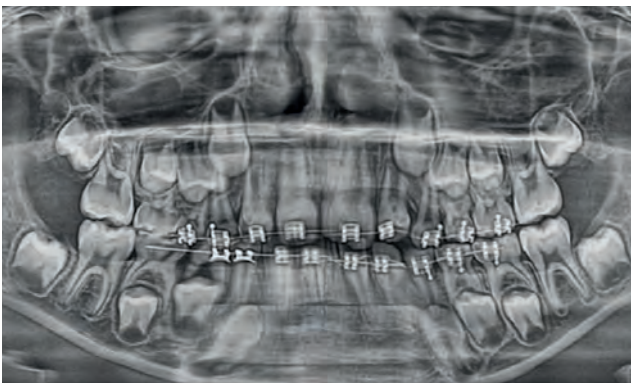


Fig. 4: OPG of pat. S., 9 y.o. 3 d post-op. Fixation of jaws in central occlusal relationship. Correct position of dislocated 11,21 teeth.

In the postoperative period the patient was prescribed with analgetics, antibiotics, anti-edema and anti-inflammatory medications, mouth wash with chlorhexidine solution. Follow ups were conducted on the 1,3,7,14,21,30 and 60 days after the fixation. In general, the post-operation period went without any complications. During the treatment we twice observed the detachment of brackets from the teeth surface, which had to be re-attached with light-curing material and did not influence the course of treatment in any way. The patient did not complain about any difficulties with hygiene maintenance neither in terms of the oral cavity nor bracket system.

From 14th d after surgery a temporary removal of intermaxillary elastics aimed to active mobilization of muscles and TMJ was performed daily. From 21th d after surgery intermaxillary fixation was not used. On the control OPG 1 mo post-op the fracture lines were not visualized, complete restoration of mandibular anatomic shape and occlusion, correct position of 11,21 teeth were revealed (Fig. 5,6). By the method of electric pulp testing we found that previously dislocated 11,21 teeth regained their sensitivity to normal rate. It was recommended to the patient to avoid hard food during 3 mo post-op. After detachment of brackets the patient had the vestibular teeth surface polish; he was prescribed with re-mineralization treatment.

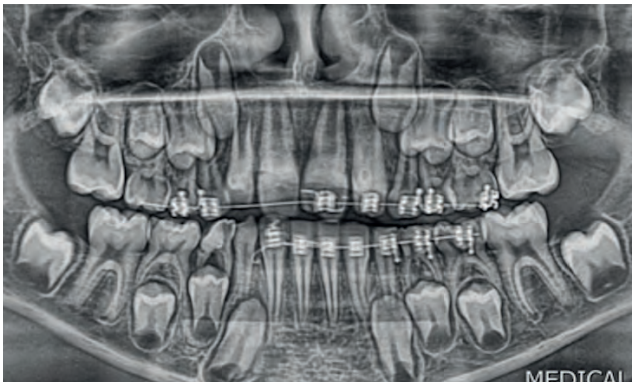


Fig. 5: OPG of pat. S., 9 y.o. 1 mo post-op. Removal of intermaxillary elastics. Complete healing of fractured areas. Complete restoration of mandibular shape and occlusion.



Fig. 6: Intraoral picture of pat. S., 9 y.o. 1 mo post-op. State of occlusion. Fixation of 11,21 teeth by a bracket arch bar for complete stabilization and healing.

Discussion

It is known from history that it was H. Baumash who presented in 1988 a method of repositioning and stabilizing of jaw bone fragments with modified dental band splints which were fixed to the vestibular surface of teeth with adhesives (ce-

ments), and later presented the findings of remote clinical studies, with the cohort of 127 patients with mandibular or alveolar ridge fractures and dental dislocation, with application of a standard band splint Lorenz Surgical (USA) [3,4].

The prototype of modern methods of maxillomandibular fixation with non-removable orthodontic appliances for pre-operational fixation of bone fragments and intermaxillary immobilization was described by Dutch scientists in 1990 and included proper selection and adaptation of a relevant fragment of orthodontic titanium band splint, etching and air-drying of a vestibular tooth surface, adhesion of the splint with acrylic cement followed by connection of the bracket's hooks with the elastics or wire ligature [8]. Later, in 1993, A. Smith [9] described the method of intermaxillary immobilization with modified orthodontic arch bar and elastomeric orthodontic chain, which differed from the above-mentioned by connection of jaws with standard orthodontic elastomeric chain, which allowed to apply directed force to bone fragments and provide their compression by means of various chains and their torque. In 2008 Q.H. Zhang published the results of treatment of 69 traumatically avulsed teeth without fracture in 37 patients were treated by fixing the teeth with orthodontic appliances with the overall effective rate 97,1% [12].

More recently, the group of surgeons from Pakistan described a case of treatment of 8 y.o. patient with significant segment mobility and dis-

location of several immature mandibular permanent incisors by means of semi-rigid arch bars with orthodontic brackets keeping the teeth with perfect results within 24 months follow up period [11]. K.S. Madhusunhan on the basis of own clinical experience strongly recommend the use of intermaxillary fixation using orthodontic brackets and intermaxillary elastics for the treatment of mandibular condylar fractures in children [7].

Conclusions

According to existed literary publications and our own clinical experience the use of orthodontic bracket arch bar for conducting mandibular immobilization and fixation of traumatized teeth in patients with fractures of the mandible in combination with teeth dislocation allows to perform the intervention at once, atraumatically, significantly facilitates hygienic care of the oral cavity, and the non-invasiveness of the intervention excludes the risk of additional dental/periodontal trauma.

References

1. Abdullah WA. The use of a single titanium microplate in displaced pediatric parasymphyseal mandibular fractures. *Saudi Dent J.* 2009; 21: 95-100.
2. An J, Jia P, Zhang Y, Gong X, Han X, He Y. Application of biodegradable plates for treating pediatric mandibular fractures. *J. Cranio-Maxillofac. Surg.* 2015; 43: 515-520.
3. Baurmash H, Farr D, Baurmash M. Direct bonding of arch bars in the management of maxillomandibular injuries. *J Oral Maxillofac Surg.* 1988; 46: 813-815.
4. Baurmash H. Bonded arch bars in oral and maxillofacial surgery. *Oral Surg, Oral Med, Oral Pathol.* 1993; 76: 553-556.
5. Cornelius CP, Ehrenfeld M. The use of MMF screws: surgical technique, indications, contraindications, and common problems in review of the literature. *Cranio-maxillofac. Trauma & Recon.* 2010; 3(2): 55-81.
6. Lello JL, Lello GE. The effect of interdental continuous lop wire splinting and intermaxillary fixation on the marginal gingiva. *Int. J. Oral & Maxillofac. Surg.* 1988; 17(4): 249-252.
7. Madhusunhan KS. Orthodontic Brackets As Intermaxillary Fixation: a case report. *J Ped Oral Health Res.* 2017;1(1): 16-19.
8. Sindet-Pedersen S, Jensen J. Intermaxillary fixation of mandibular fractures with bracket-bar. *J Cranio-maxillofac Surg.* 1990; 18: 297-298.
9. Smith AT. The use of orthodontic chain elastic for temporary intermaxillary fixation. *Brit J Oral Maxillofac Surg.* 1993; 31: 250-251.
10. Thor A, Andersson L. Interdental wiring in jaw fractures: effects on teeth and surrounding tissues after a one-year follow-up. *Brit J Oral Maxillofac Surg.* 2001; 39(5): 398-401.
11. Tuzuner T, Yahyaoglu G, Tosun E, Taskesen F, Kusgoz A. Alveolar process fracture in mandibular immature permanent incisors region. *J Pak Med Assoc.* 2016; 66(10): 1334-1336.
12. Zhang QH. Application of Edgewise appliance for fixation of dislocated permanent anterior teeth caused by trauma. *Shanghai Kou Qiang Yi Xue.* 2008;17(6): 668-670.

Konsensus betreffend 16 anerkannten und klinisch bewährten Methoden und Untermethoden für die Platzierung von kortiko-basalen oralen Implantaten

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Weitere anwendbare Regeln oder Dokumente:

Generelle Regeln der Traumatologie und der orthopädischen Chirurgie

Indications and treatment modalities with corticobasal jaw implants. IF Consensus Document 2019. Ann Maxillofac Surg 2019;9:379-86.

1. Dobrinin O., Lazarov A, Konstantinovic V.K., et al. Immediate-functional loading concept with one-piece implants (BECES/BECES N /KOS/BOI) in the mandible and maxilla- a multi-center retrospective clinical study. J. Evolution Med. Dent. Sci. 2019;8(05):306-315, DOI: 10.14260/jemds/2019/67
2. Lazarov A. Immediate functional loading: Results for the concept of the Strategic Implant®. Ann Maxillofac Surg 2019;9:78-88.
3. Palka LR, Lazarov A. Immediately loaded bicortical implants inserted in fresh extraction and healed sites in patients with and without a history of periodontal disease. Ann Maxillofac Surg 2019;9:371-8.
4. Ihde S., Ihde A., Lysenko V., Konstantinovic V, Palka L New Systematic Terminology of cortical Bone areals for osseo-fixated Implants in Strategic Oral Implantology; J.J.Anatomy, 2016, 1(2), 007
5. Gaur V., Doshi A., Ihde S., Ihde A., Palka L. Multi-unit connection for the Strategic Implant®: an innovative way for achieving retrievability of prosthetics on fully polished single piece implants used in an immediate loading protocol. CMF Impl Dir 2020; 14: 3 - 34
6. Motaz Osman, Abdelnasir G. Ahmad, and Fadia Awadalkreem A Novel Approach for Rehabilitation of a Subtotal Maxillectomy Patient with Immediately Loaded Basal Implant-Supported Prosthesis: 4 Years Follow-Up ; Hindawi Case Reports in Dentistry Volume 2020, Article ID 9650164, 7 pages <https://doi.org/10.1155/2020/9650164>
7. Fadia Awadalkreem, Nadia Khalifa, Abdelnasir G. Ahmad, Ahmed Mohamed Suliman, Motaz Osman; Prosthetic Rehabilitation of maxillary and mandibular gunshot defects with fixed basal implant supported prostheses: a 5 year follow-up case report. Int J. of surgery Case reports 68(2020) 27-31
8. Ihde S, Palka L. Anchorage possibilities in case of unilateral maxillary defect using the concept of the Strategic Implant(R) Natl J Maxillofac Surg. 2018 Jul-Dec;9(2):235-239. doi: 10.4103/njms.NJMS_36_18.
9. Konstantinovic VS, Lazic V., Ihde S. Disk implants retained nasal epithesis. Case report and literature review. J Craniofac Surg 2010;21: (1) 33-36
10. Barrachina-Diez J.M. et al. Long term outcome of one-piece Implants. Part I: Implant Characteristics and Loading Protokols. A systematic Literature Review with Meta Analysis Int J Oral Maxillofac Implnts 2013; 28:503-518



Methoden Nr.	
	Einsetzen von Implantaten in unterschiedlichen Richtungen gegeneinander, und anschliessend:
1a Generell	<ul style="list-style-type: none">• Parallelisierung von Abutmenten durch Biegung der Schäfte• Parallellisierung durch Zementierung von Angulationsadaptoren• oder die Verwendung von einer Schraubenverbindung.
1b Generell	Einsetzen von Implantaten in strategischen Positionen and und Hinzufügen von stabilisierenden Implantaten in anderen Knochenbereichen.
1c Generell	Einsetzen der Strategic Implant® in kortikale Knochenbereiche, unabhängig vom Alveolarknochen, bevorzugt in resorptionsstabile Knochenbereiche.
1d Generell	Platzierung von Implantaten in Fällen mit profunder präoperativer Parodontitis unter dem Schutz starker Desinfektionsmittel. Mit den Implantaten werden die betroffenen Weichteile entfernt. Die Implantate werden sodann sofort eingesetzt und mittels einer starren Konstruktion gesichert.
1e Generell	Spongiose Knochenanteile werden für die Verankerung vermieden. Das Erreichen der Osseointegration ist nicht das primäre Ziel der Behandlung.
1f Generell	Fixierung von polierten Implantatkörpern mit dem Ziel, mechanische Verankerung in kortikalen Knochenanteilen des maxillo-facialen Skeletts zu erreichen. Sofortige und primäre Schienung der Implantate durch die prothetischen Konstruktionen.
1g Generell	Erreichung von Rotationsstabilität durch die Biegung von enossalen Implantatanteilen nach der Einbringung des Implantats.
1h Generell	Erreichung von primärer Stabilität durch die Verwendung von enossal/apikal breiten Implantaten, deren Gewindegänge zusätzliche vertikale Knochenkondensation erzeugen.

Ostsspezifische Methoden

Für jede Region im Kiefer gibt es definierte und geeignete Methoden der Fixierung des Implantats.

Methode 2

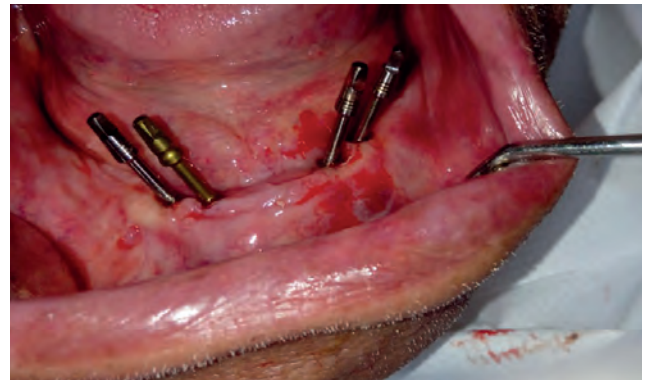


Platzierung von Implantaten zwischen den mentalen Nerven (bei zahnlosen Unterkiefern) mit oder ohne Notwendigkeit einer Verankerung in der 2. (basalen) Kortikalis des Unterkiefers.

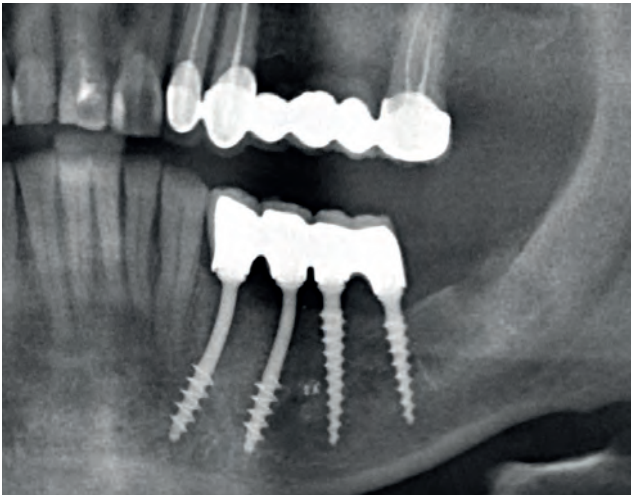
Diese Positionierung und Angulierung hat drei Vorteile:

- Die Gewinde befinden sich in stark mineralisiertem Knochen
- Der N. mentalis kann vermieden werden
- Die Spannweite zu den Köpfen der distalen Implantate wird verringert.

Methode 2 Anwendungsbeispiel



Methode 3

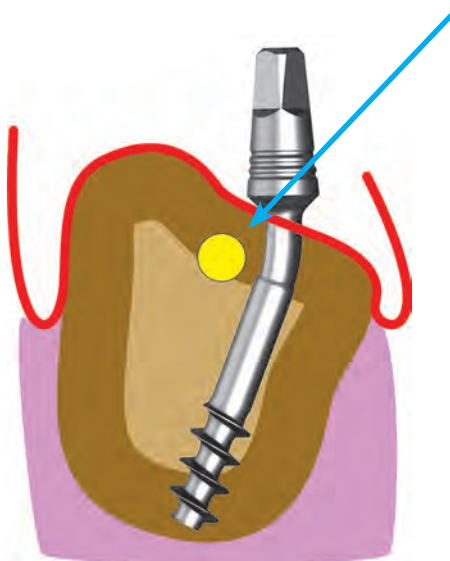
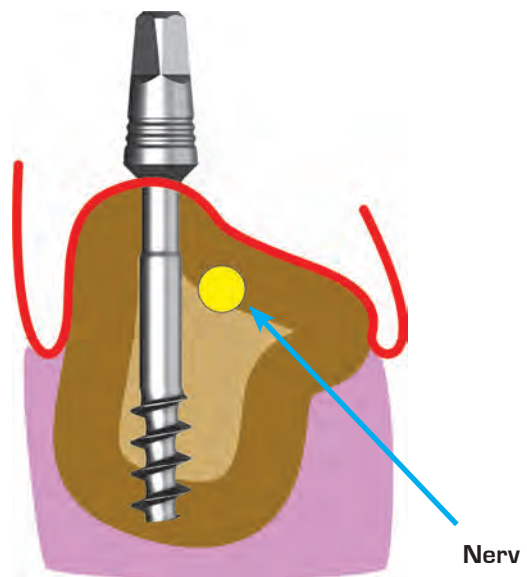


Anteriore Verankerung eines Segments, mit einem (oder zwei) Strategic Implant®, welche in den Spalt zwischen der Wurzel des Eckzahns und dem Austrittspunkt der N. Mentalis reichen.

Methode 4a

Nervumgehung im distalen Unterkiefer
Ohne Penetration der kaudalen Kortikalis

Gewindedurchmesser 2.7 - 3.5 mm

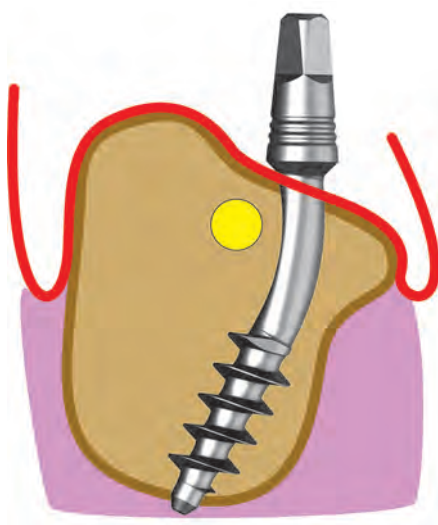
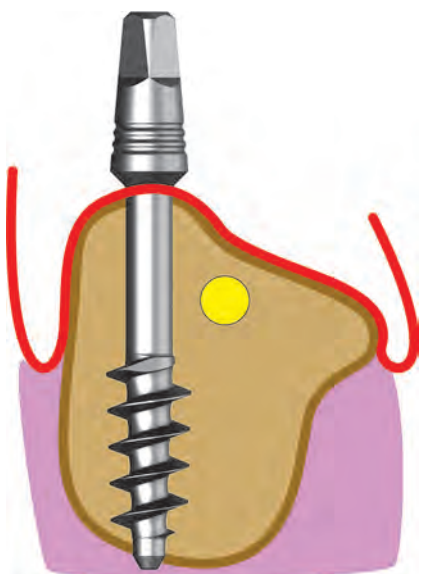


Methode 4b

Nervumgehung im distalen Unterkiefer

Mit Penetration der kaudalen Kortikalis

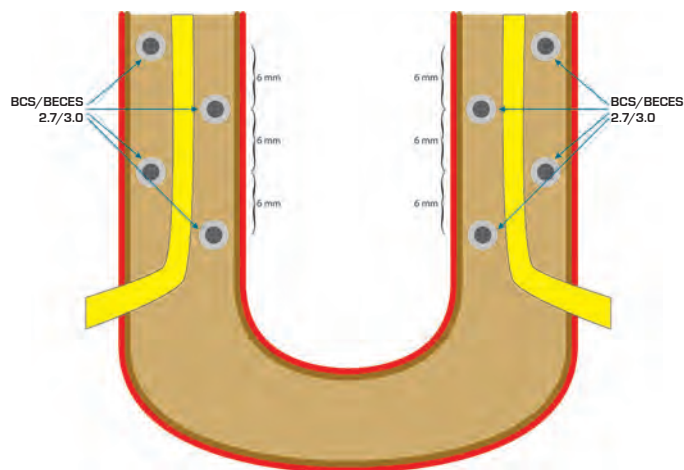
Gewindedurchmesser 3.5 mm oder grösser



Methode 4a/b

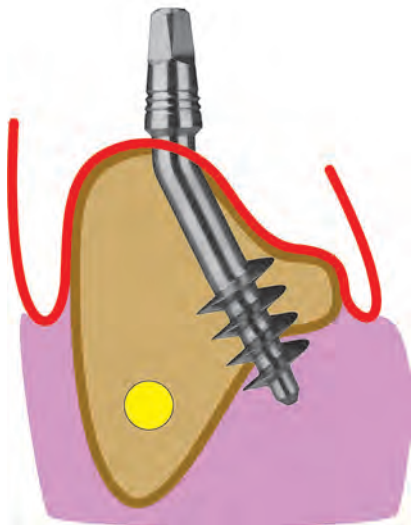
Nervumgehung im distalen Unterkiefer

Die Abstände zwischen den Implantaten betragen 6 mm



Methode 5a

Verankerung in der lingualen Kortikalis im distalen Unterkiefer



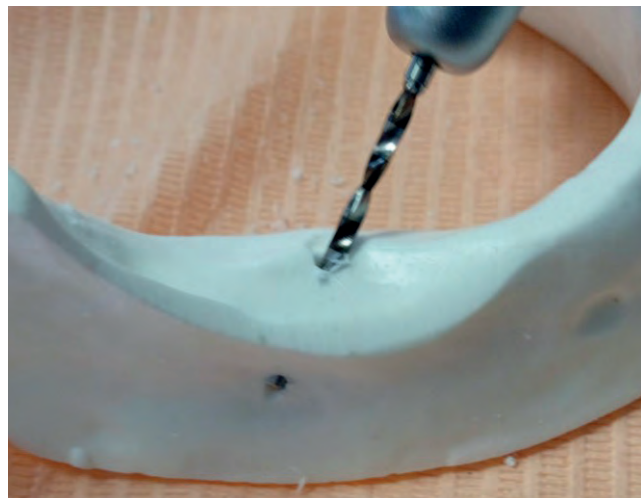
Hier werden nur linguale Kortikalisareale für die Abstützung eines Segments verwendet. Es können auch abwechselnd vestibuläre und linguale Areale verwendet werden.



Methode 5b

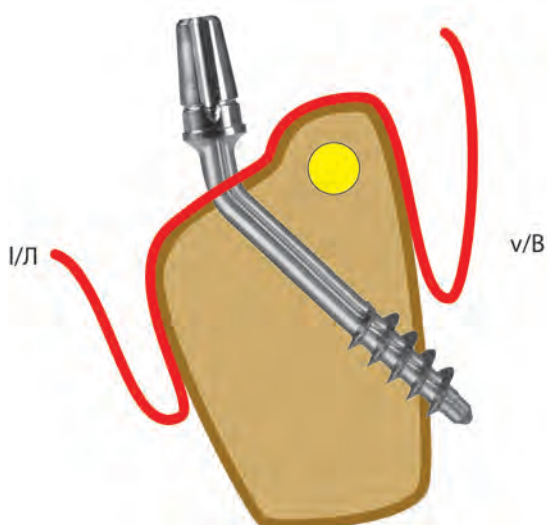
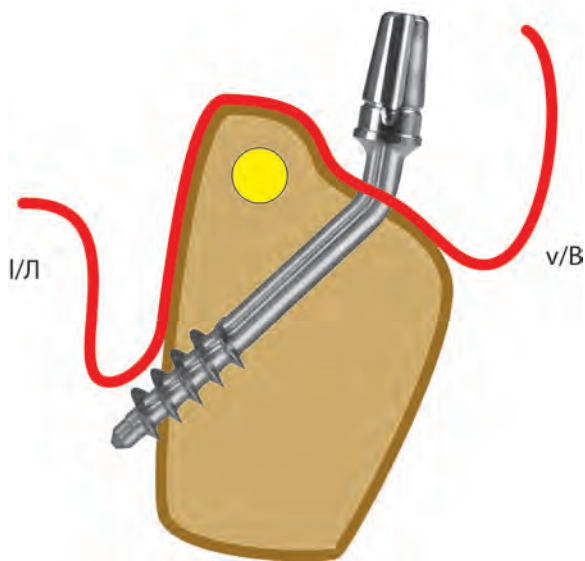
Vestibuläre cortikale Verankerung im distalen Unterkiefer

Es ist wichtig, diese Bohrung mit dem geraden Handstück durchzuführen.



Methode 5c

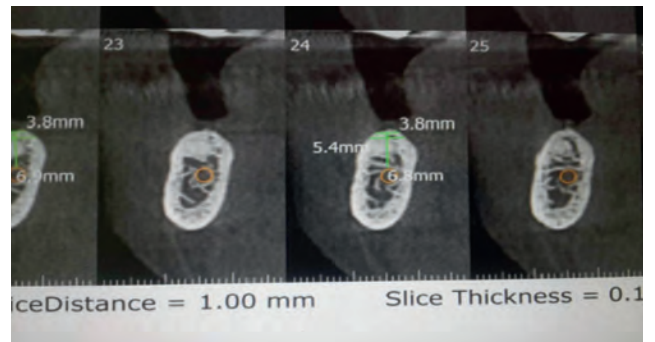
Vestibuläre oder linguale kortikale Verankerung im distalen Unterkiefer, wobei der Implantatkörper kaudal des N. alv. inferior verläuft.



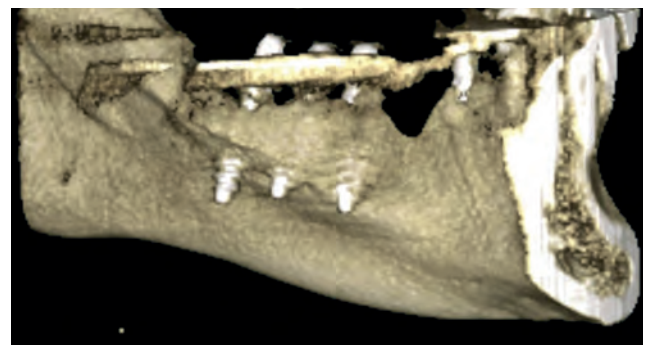
Methode 5a Anwendungsbeispiel



Ein Unterkiefer ohne linguale Umschneidung



Drei korrekt eingesetzte Implantate im hinteren Unterkiefer mit Penetration der linguale Kortikale. Die Gewindebereiche liegen teilweise im Mundboden.

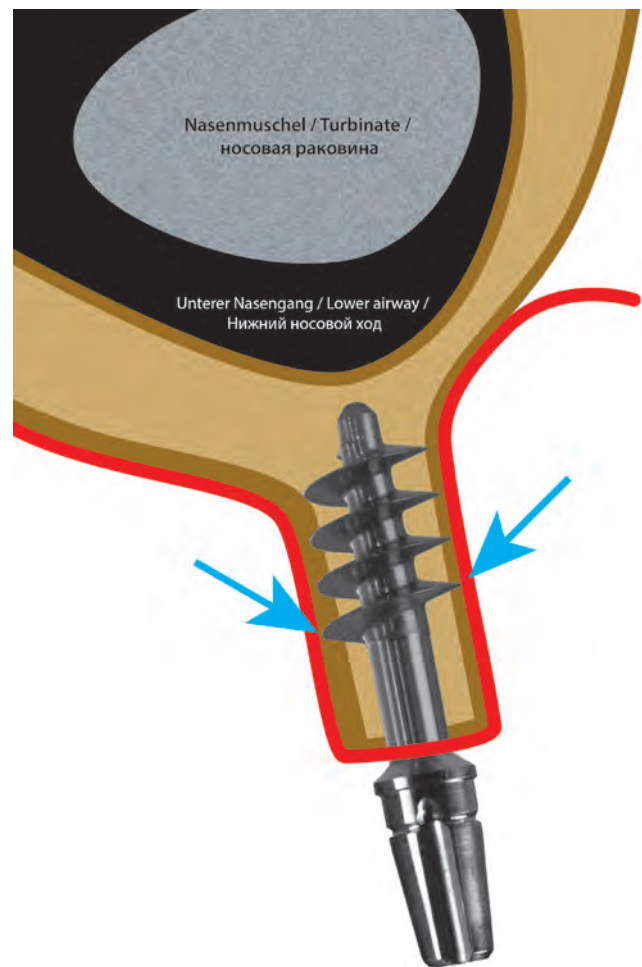


Method 6

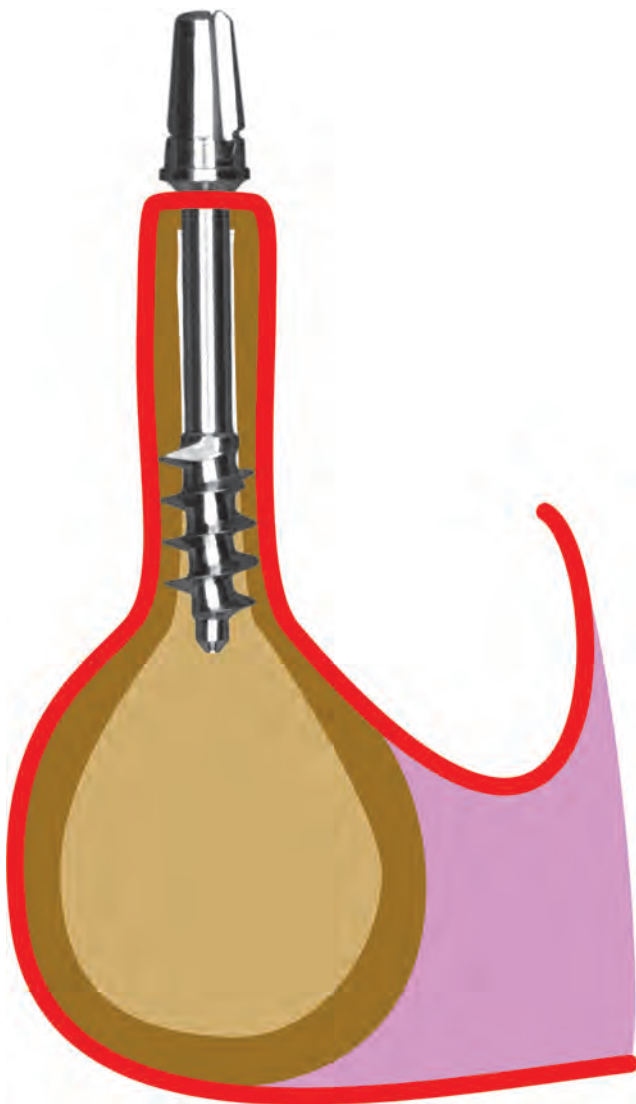
Einsetzen eines kortikalen Implantats mit Verankerung in der vestibulären und lingualen Kortikalis, ohne die Verwendung der 2. Kortikalis in axialer Richtung.



Einsetzen eines kortikalen Implantats mit Verankerung in der vestibulären und lingualen Kortikalis, ohne die Verwendung der regulären 2. Kortikalis.

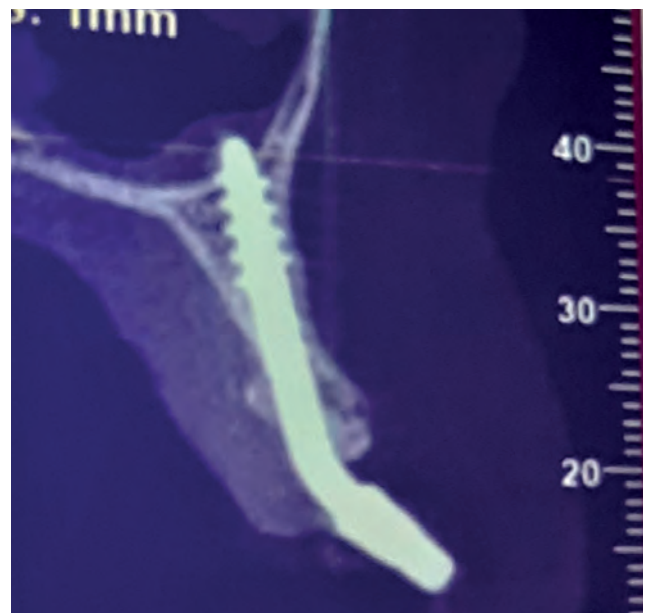


Einsetzen eines kortikalen Implantats mit Verankerung in der vestibulären und lingualen Kortikalis, ohne die Verwendung der regulären 2. Kortikalis.



Methode 7a

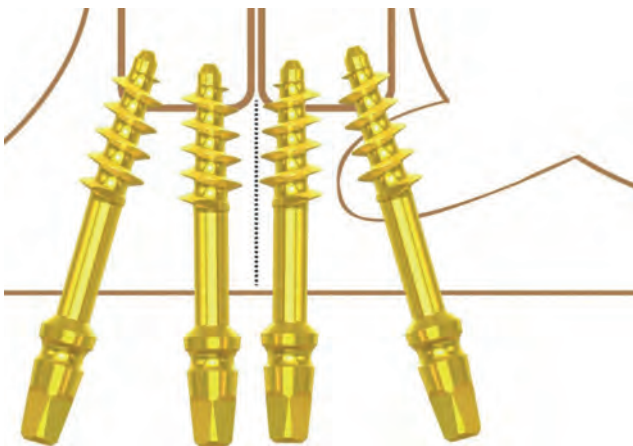
Verankerung des Implantats im Nasenboden bei vollständiger Durchdringung der Kortikalis.



Verankerung des Implantats im Nasenboden bei vollständiger Durchdringung der Kortikalis.

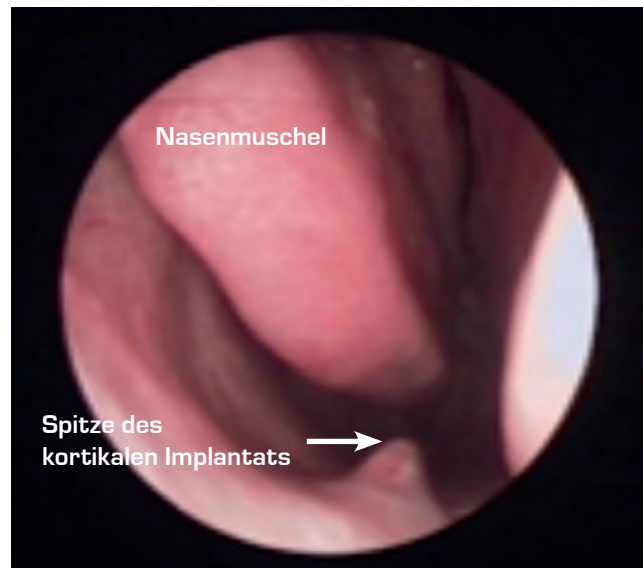


Verankerung des Implantats im Nasenboden bei vollständiger Durchdringung der Kortikalis.



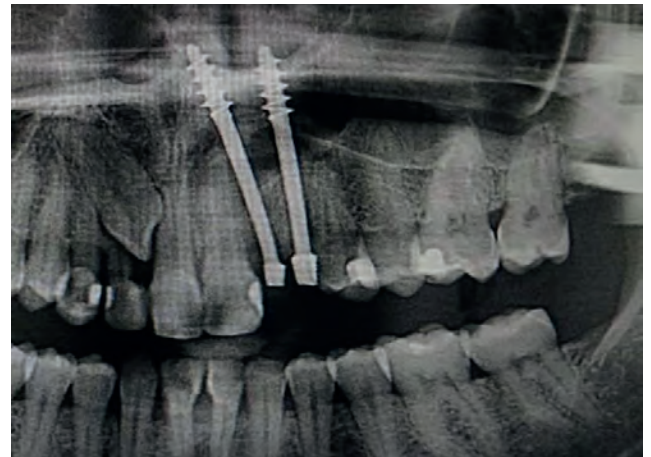
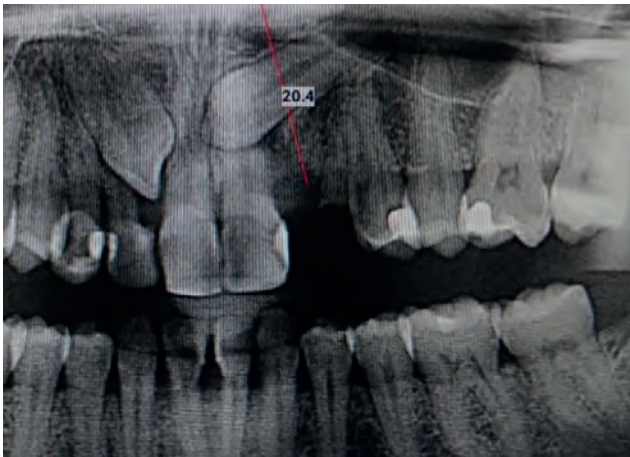
Method 7

Um sichere Verankerung im Nasenboden zu erlangen, muss das kortikale Implantat bis in den Bereich der Nase eingeschraubt werden. Es ist unerheblich, ob die Implantatspitze von Schleimhaut bedeckt ist (wie auf diesem Bild), oder ob polierte apikalen Implantatanteile in der Nase frei liegen.



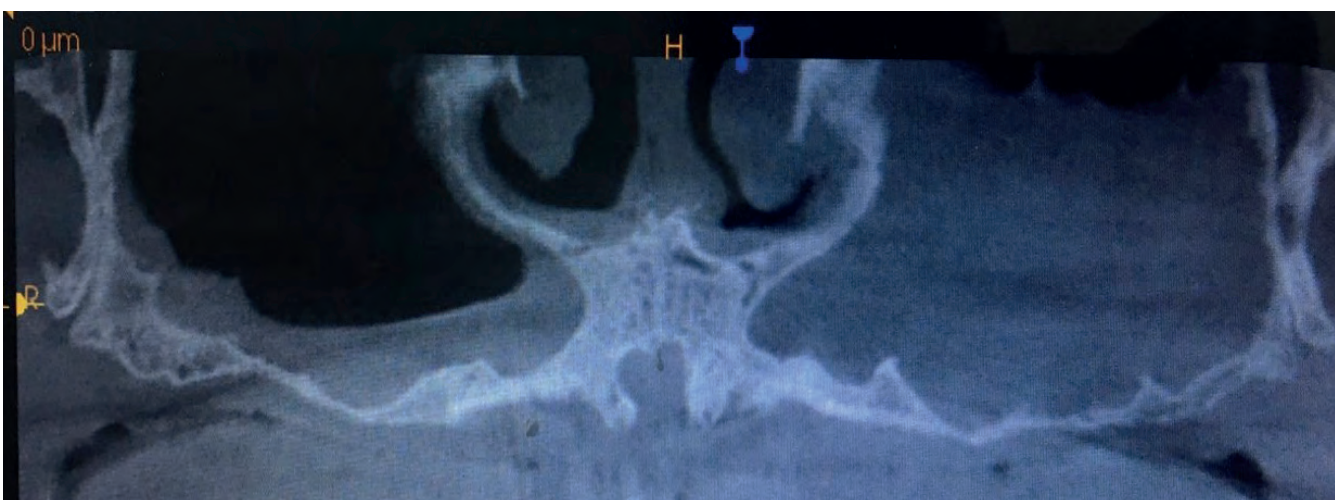
Methode 7a

Behandlungsbeispiel betreffend verlagerte obere Eckzähne.



Präoperatives Bild

Obwohl sehr wenig Knochen vorliegt, handelt es sich um einen standardmässig (mit den regulären Methoden) lösbaren Fall.

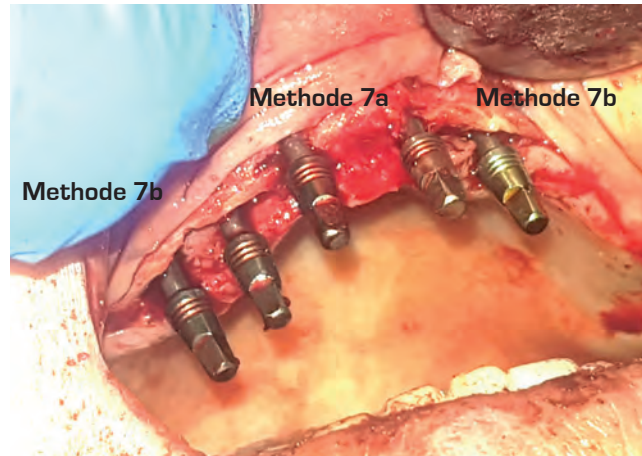
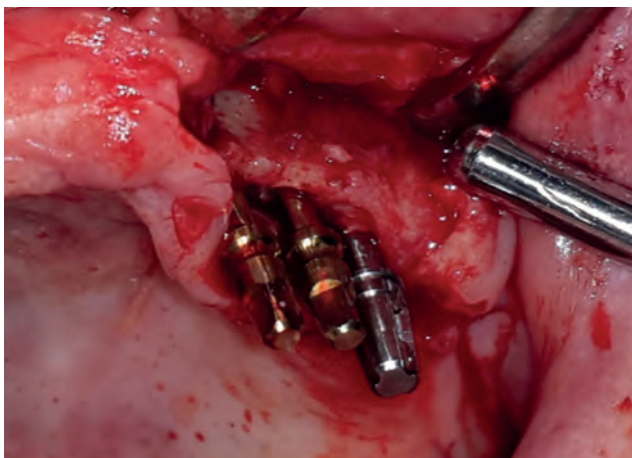


Method 7b

Direktes Einsetzen des Implantats in den Nasenboden unter Umgehung des Alveolarfortsatzes (CT-Aufnahme).

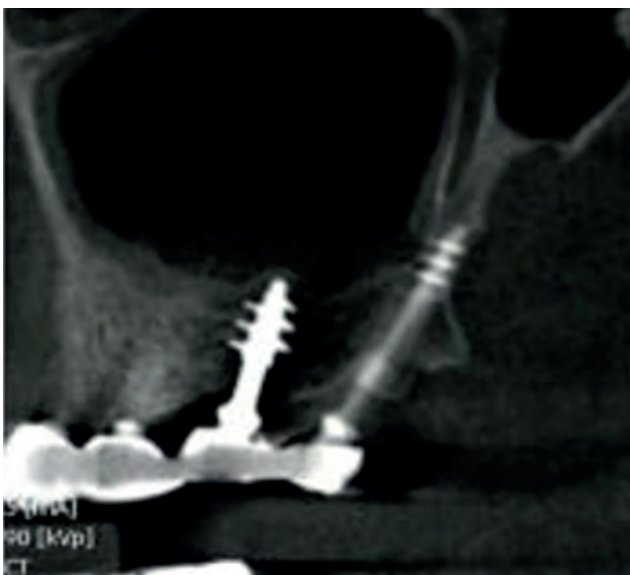


Direktes Einsetzen des Implantats in den Nasenboden unter Umgehung des Alveolarfortsatzes. Das Einsetzen der Implantate erfolgt mit oder ohne Lappenbildung.



Methode 8

Verankerung des Implantats im kortikalen Boden des Sinus Maxillaris.

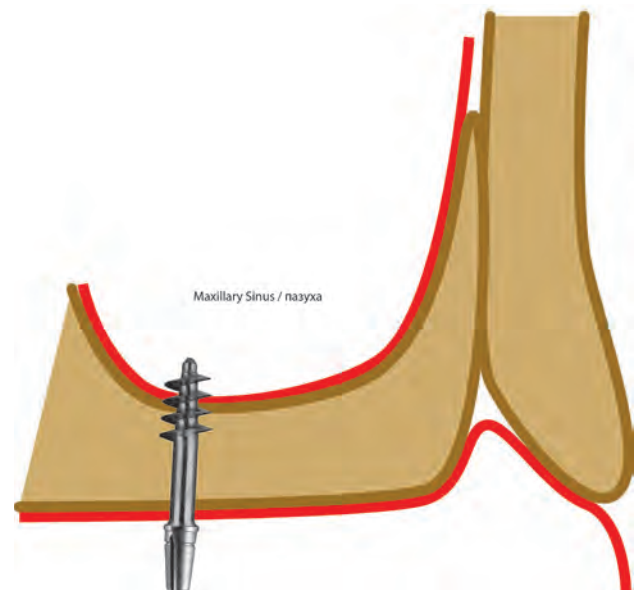


Verwendung eines Septums in der Kieferhöhle für die Verankerung des Implantats.



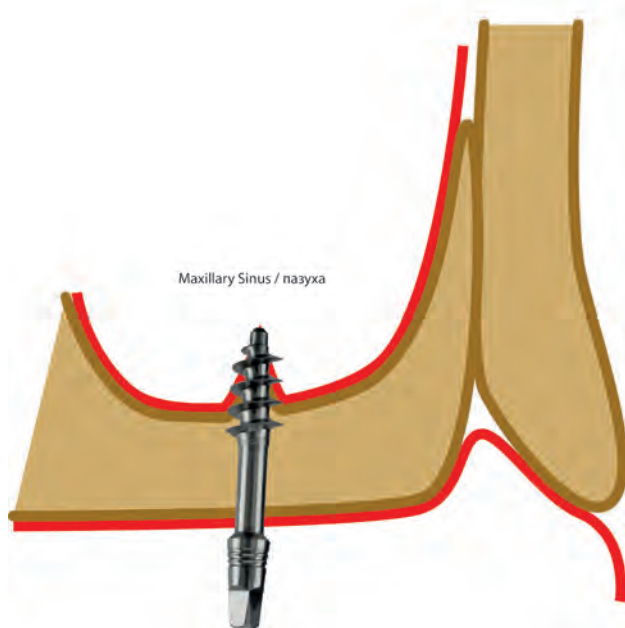
Methode 8a

Verankerung des Implantats im kortikalen Boden des Sinus Maxillaris.



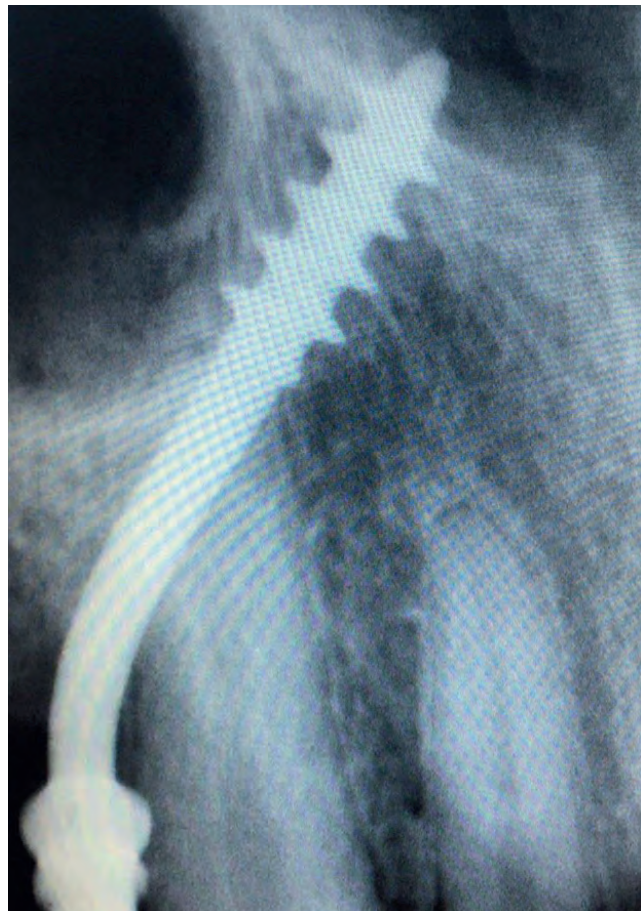
Methode 8b

Verwendung eines Septums in der Kieferhöhle für die Verankerung des Implantats.



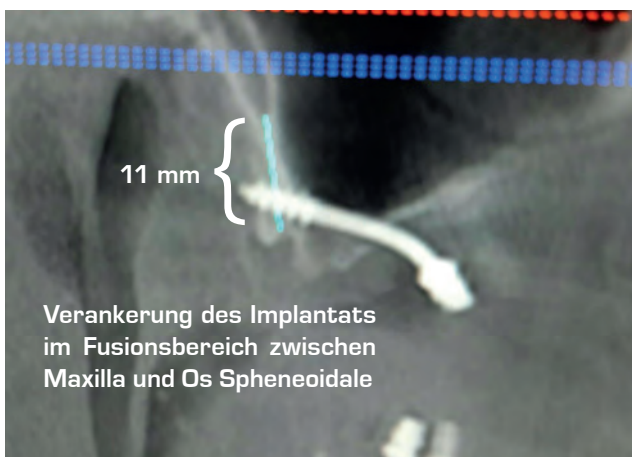
Methode 9

Verankerung des Implantats im kortikalen Nasenboden, wobei das Implantat etwas aus der Region 14/15 ausgehend, auf der palatinalen Seite der Eckzahnwurzel geführt wird.

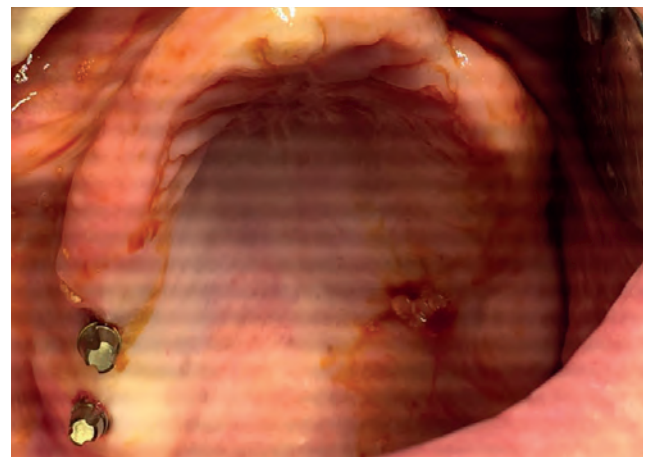


Methode 10

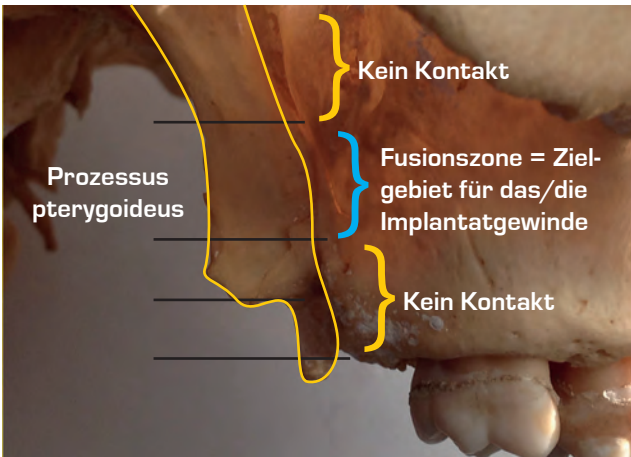
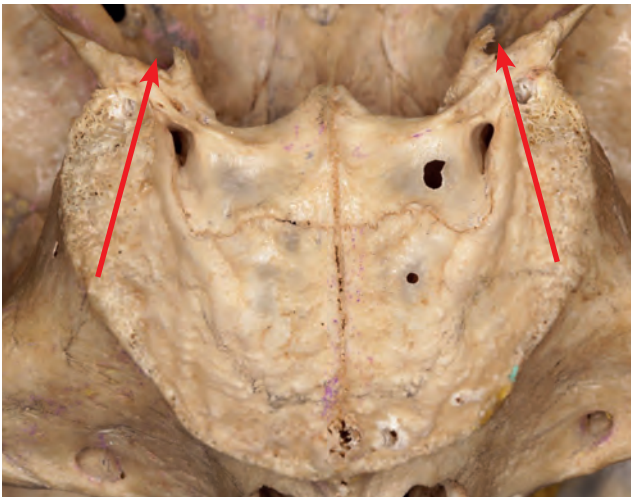
Verankerung des distalen Implantats im Oberkiefer im Fusionsbereich zwischen dem distalen Oberkiefer und dem Os Sphenoidale (im Bereich des Processus Pterygoideus).



Inter-orales Bild von Doppel-Tubero-Pterygoid Schrauben nach der Parallelisierung.



Einsetzrichtung von Tubero-Pterygoid-Implantaten in einem Standardfall. Die Implantatspitze liegt im Ansatzbereich des M. pterygoideus internus.



Methode 11a

Einsetzen des Implantat in den Knochen auf der palatinalen Seite der Kieferhöhle.

Varianten

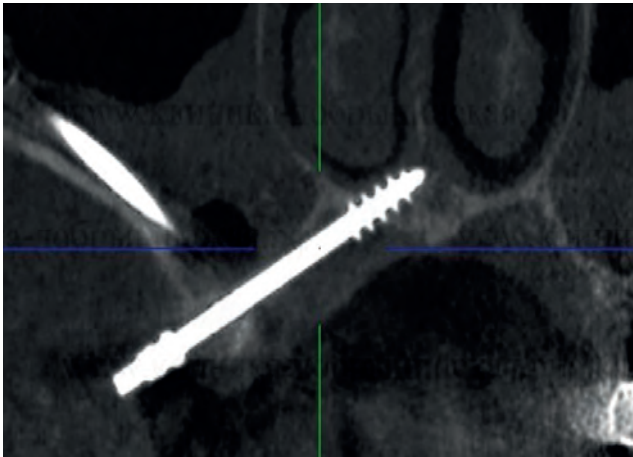
11a Verankerung mit und ohne das Erreichen der Kortikalis der Nase.

11b Verankerung in der Sutura (Raphe) mediana der Maxilla.

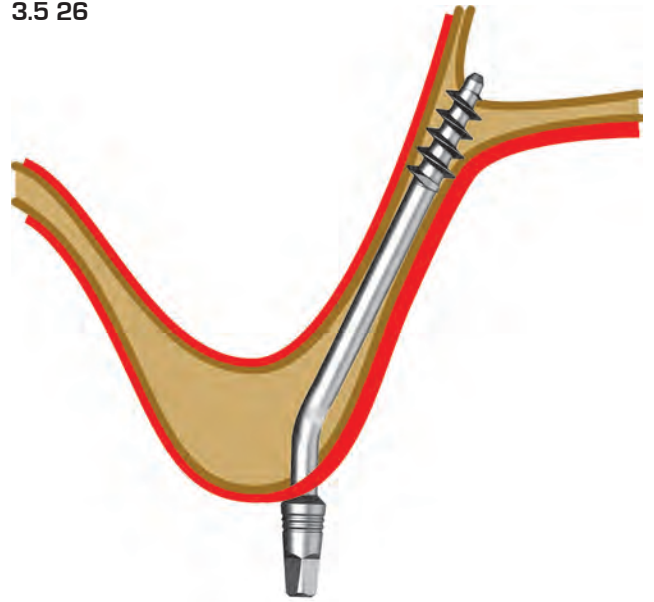


Methode 11b

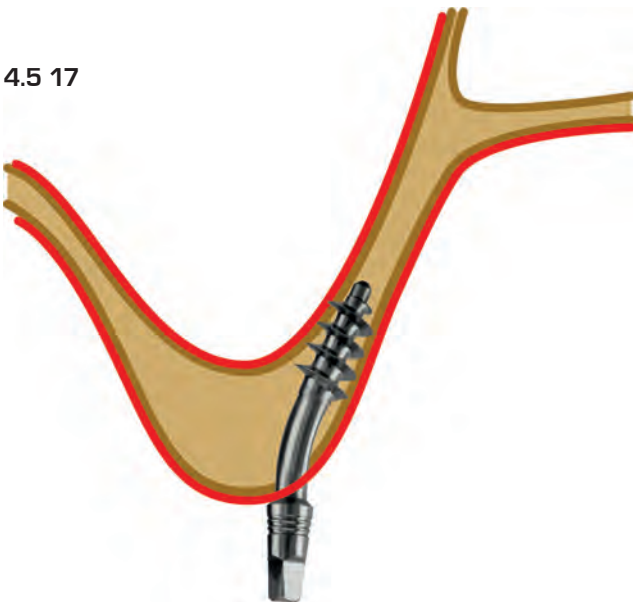
Verankerung in der Sutura (Raphe) mediana der Maxilla.



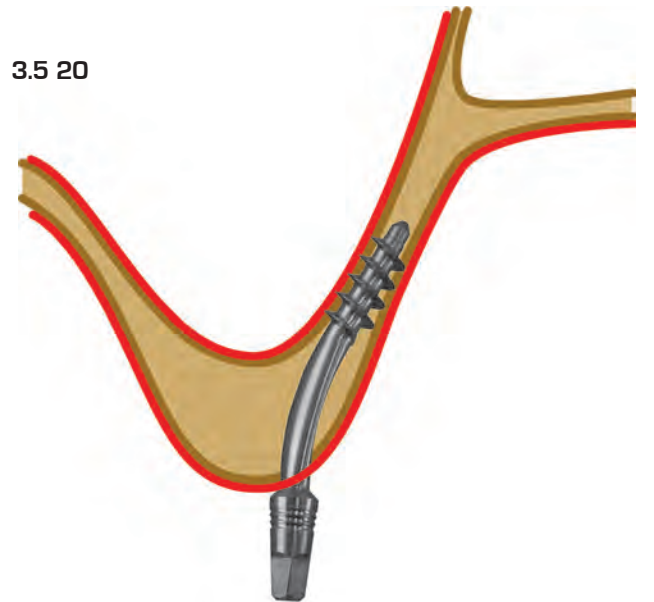
3.5 26



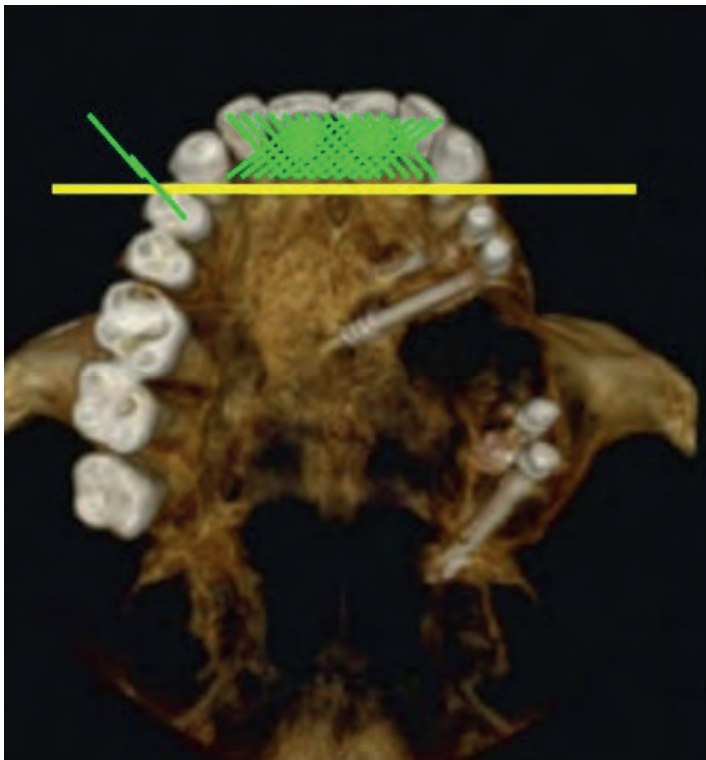
4.5 17



3.5 20



Method 9 vs. Methode 11b



METHOD
11



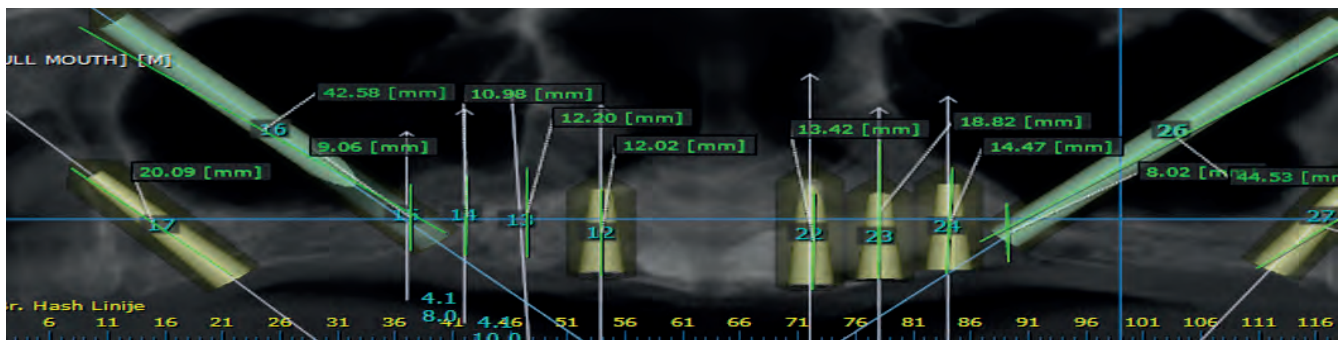
METHOD
9

(Eckzahn
Bypass)

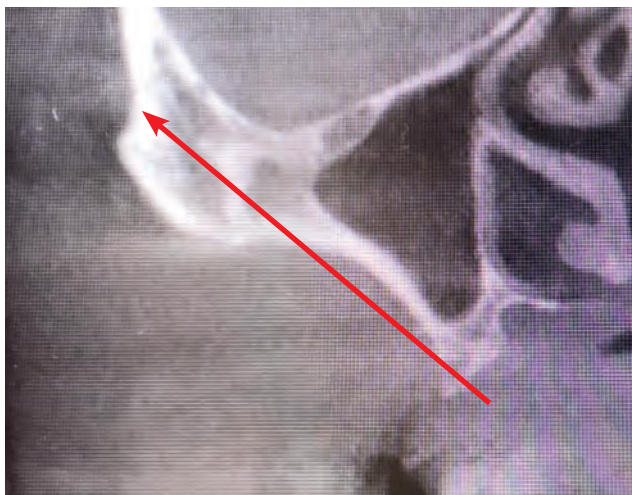
Methode 12

Einsetzen des Implantats in den Körper des zygomaticen Knochens

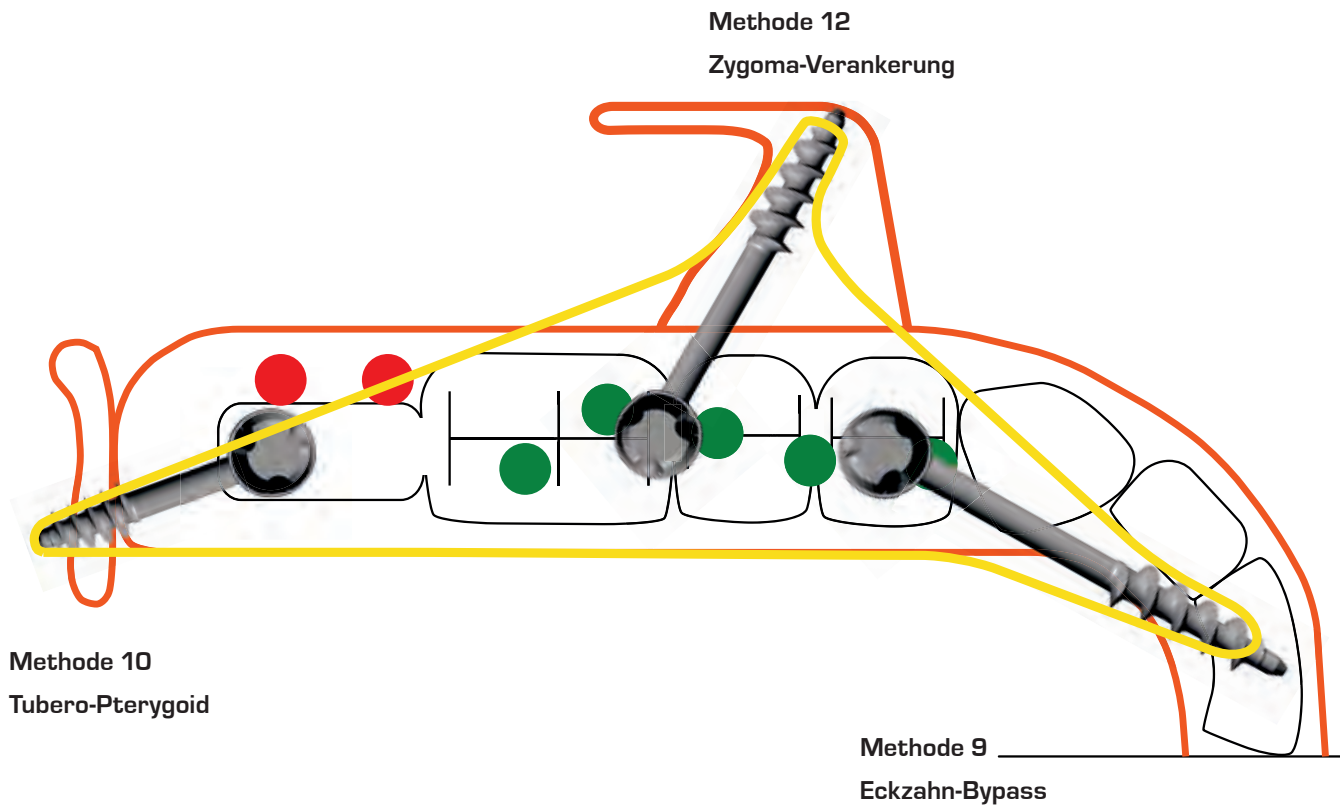
- direkt, extrasinusal
- transsinusal



Extra-sinusaler Verlauf des Implantats beim Vorliegen einer zu dieser Vorgehensweise passenden Anatomie.



Überlegungen betreffend die Kombinationen von Methoden und das dadurch erzielte Unterstützungspolygon

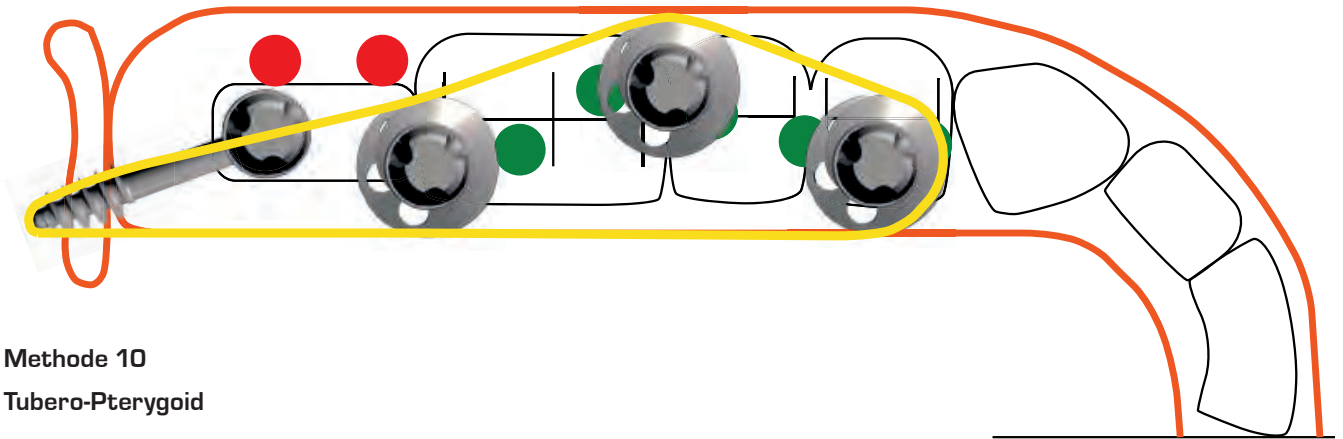


Überlegungen betreffend das Unterstützungspolygon

Methode 6

Vestibuläre/palatinale Verankerung
oder Methode 8a/8b

Verankerung in der basalen Kortikalis der Kieferhöhle



Methode 10

Tubero-Pterygoid

Methode 13

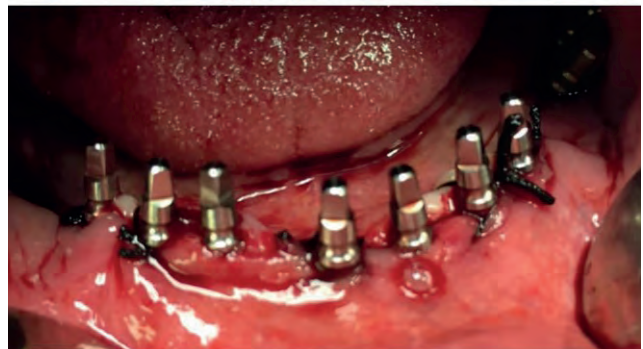
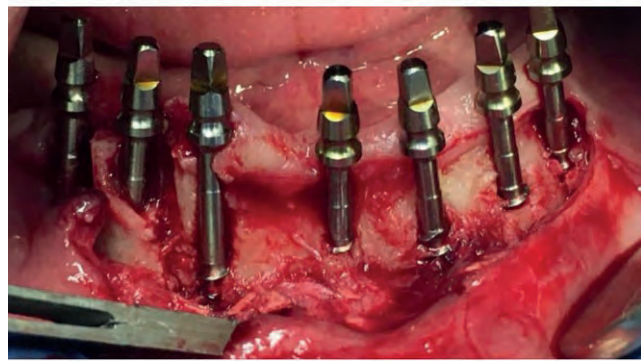
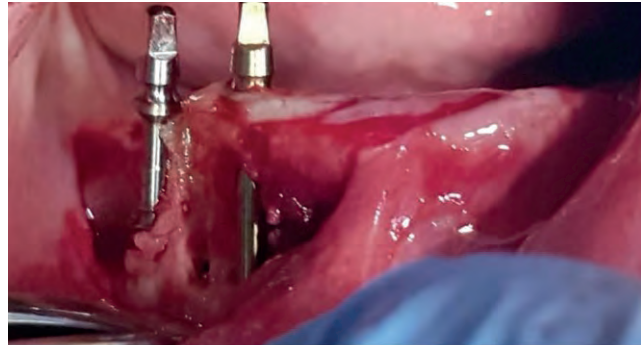
Einsetzen des Implantat vestibulär vor den messerkammscharfen anterioren Kieferkamm.

Durchmesser: 2.7 und 3.0 mm

Teilweise verläuft das Implantat subperiostal. Die Gewinde verankern sich in der Basis des Unterkiefers.



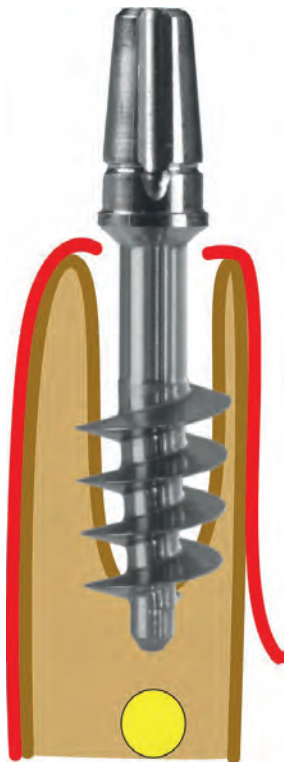
Anwendung der Methode 13 im anterioren Unterkiefer.



Methode 14

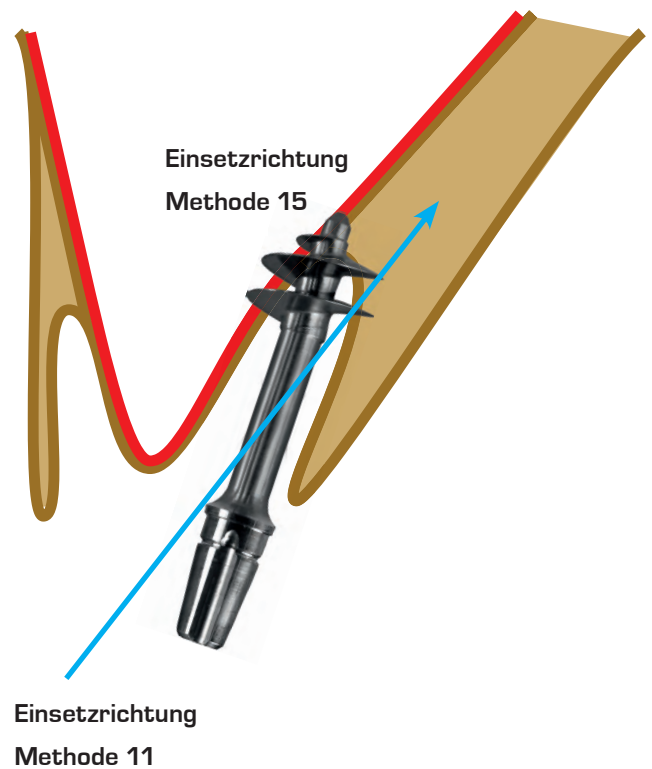
Verankerung eines Implantats in der frischen Extraktionsalveole des 1. oder 2. unteren Prämolaren.

Durchmesser: 4.5 oder 5.5 mm



Methode 15

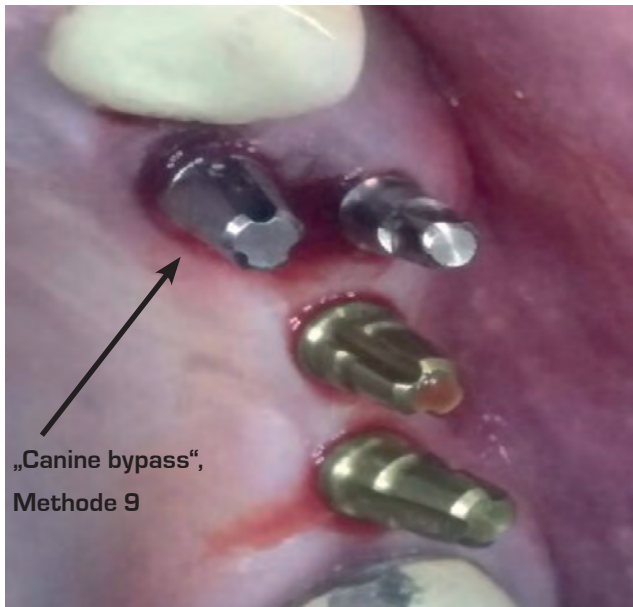
Einsetzen eines Implantats in die palatinale Wurzel eines oberen 1. oder 2. Molaren.



Methode 16a

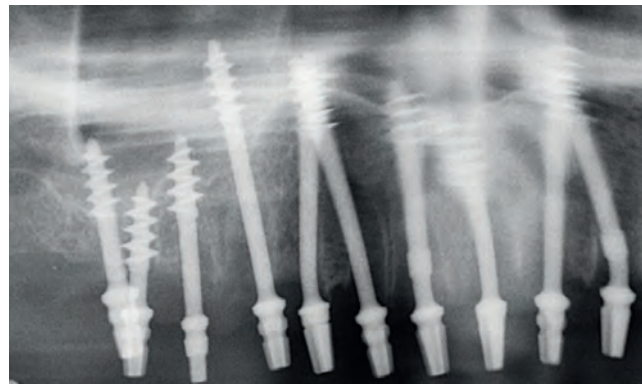
Einsetzen von zwei Implantaten in die beiden Alveolen eines 1. oberen Prämolaren.

Das palatinal eingebrachte Implantat verläuft in Richtung auf den Nasenboden und palatinal an der Eckzahnwurzel vorbei (Methode 9).



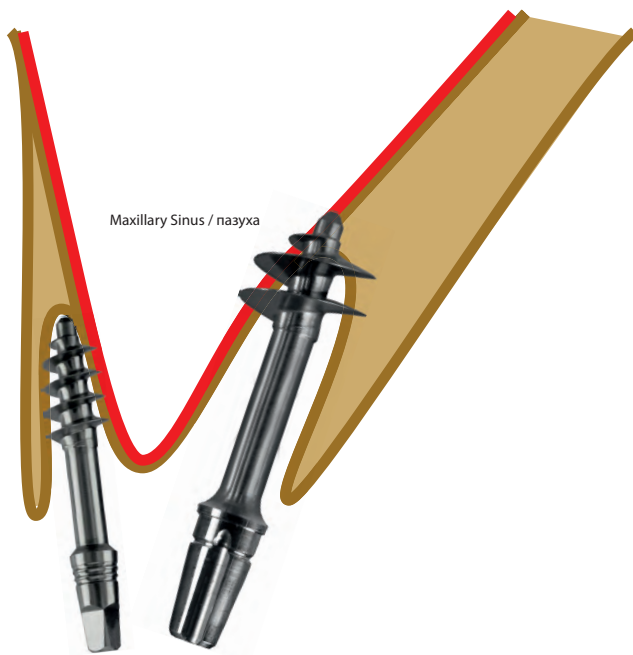
Methode 16b

Einsetzen von zwei Implantaten in die Extraktionssalveolen eines oberen Molaren.



Method 16b

Verwendung von zwei verschiedenen Extraktionsalveolen des oberen 1. oder 2. Molaren für zwei kortikobasale Implantate.





CONSENSUS REGARDING 16 RECOGNIZED AND CLINICALLY PROVEN METHODS AND SUB-METHODS FOR PLACING CORTICOBASAL® ORAL IMPLANTS

Copyright: International Implant Foundation, Munich, Germany 2018/2019/ 2020. This 3rd version of the consensus document replaces all older versions, and it was last reviewed in January 2020.

Level of Evidence: S3 (evidence based, systematically developed consensus guideline)

Other applicable rules and documents:

General Rules in Traumatology and Orthopaedic Surgery.

Indications and treatment modalities with corticobasal jaw implants. IF Consensus Document 2019. Ann Maxillofac Surg 2019;9:379-86.

Literature (excerpt):

1. Dobrinin O., Lazarov A, Konstantinovic V.K., et al. Immediate-functional loading concept with one-piece implants (BECES/BECES N /KOS/BOI) in the mandible and maxilla- a multi-center retrospective clinical study. *J. Evolution Med. Dent. Sci.* 2019;8(05):306-315, DOI: 10.14260/jemds/2019/67
2. Lazarov A. Immediate functional loading: Results for the concept of the Strategic Implant®. *Ann Maxillofac Surg* 2019;9:78-88.
3. Palka LR, Lazarov A. Immediately loaded bi-cortical implants inserted in fresh extraction and healed sites in patients with and without a history of periodontal disease. *Ann Maxillofac Surg* 2019;9:371-8.
4. Ihde S., Ihde A., Lysenko V., Konstantinovic V, Palka L New Systematic Terminology of cortical Bone areals for osseo-fixated Implants in Strategic Oral Implantology; *J.J.Anatomy*, 2016, 1(2), 007
5. Gaur V., Doshi A., Ihde S., Ihde A., Palka L. Multi-unit connection for the Strategic Implant®: an innovative way for achieving retrievability of prosthetics on fully polished single piece implants used in an immediate loading protocol. *CMF Impl Dir* 2020; 14: 3 - 34
6. Motaz Osman, Abdelnasir G. Ahmad, and Fadia Awadalkreem A Novel Approach for Rehabilitation of a Subtotal Maxillectomy Patient with Immediately Loaded Basal Implant-Supported Prosthesis: 4 Years Follow-Up ; *Hindawi Case Reports in Dentistry Volume 2020*, Article ID 9650164, 7 pages <https://doi.org/10.1155/2020/9650164>
7. Fadia Awadalkreem, Nadia Khalifa, Abdelnasir G. Ahmad, Ahmed Mohamed Suliman, Motaz Osman; Prosthetic Rehabilitation of maxillary and mandibular gunshot defects with fixed basal implant supported prostheses: a 5 year follow-up case report. *Int J. of surgery Case reports* 68(2020) 27-31
8. Ihde S, Palka L. Anchorage possibilities in case of unilateral maxillary defect using the concept of the Strategic Implant(R) *Natl J Maxillofac Surg.* 2018 Jul-Dec;9(2):235-239. doi: 10.4103/njms.NJMS_36_18.
9. Konstantinovic VS, Lazic V., Ihde S. Disk implants retained nasal epithesis. Case report and literature review. *J Craniofac Surg* 2010;21: (1) 33-36
10. Barrachina-Diez J.M. et al. Long term outcome of one-piece Implants. Part I: Implant Characteristics and Loading Protokols. A systematic Literature Review with Meta Analysis *Int J Oral Maxillofac Implnts* 2013; 28:503-518



Methods No.	
1a General	<p>Multidirectional insertion of implants, with implants inserted under an angle to each other. To allow the insertion of prosthetics the following steps are then performed:</p> <p>The abutment heads are parallelized by bending the shafts/necks of the implants or by using angulation adapters (as intermediate elements), or by grinding the abutment heads. Prosthetic constructions and implants are connected by prosthetic screws (for Multi-unit design of Corticobasal® implants).</p>
1b General	<p>Placement of implants in Strategic Position and adding stabilizing implants in other parts of the jaw bone.</p>
1c General	<p>Anchorage of implants in the 2nd or 3rd cortical, independent of the “alveolar bone”. Preferred places of anchorage are resorption stable corticals.</p>
1d General	<p>Placement of Corticobasal® implants in cases with profound and active periodontal involvement. Under protection of strong topical disinfection agents the teeth and subsequently the periodontally involved soft tissues are removed. Corticobasal® Implants are placed instantly and they are then splinted by a rigid prosthetic construction.</p>
1e General	<p>Spongious and alveolar bone areals are avoided for anchorage. Achieving “osseointegration” is not the primary aim of implant placement.</p>
1f General	<p>Fixation of polished implant bodies made from implantable material with the aim of achieving mechanical anchorage in cortical bone areas of the maxillo-facial skeleton. Subsequent splinting by the prosthetic construction in an immediate loading protocol.</p>
1g General	<p>Creating anti-rotation features for an implant by bending intra-osseous parts of the shaft of the implant.</p>
1h General	<p>Achieving primary stability by vertical condensation of the spongious bone by <u>wide body</u> BCS. Wide body = big volume of implant material at the thread.</p>

Regional Methods

For every region of the jaw bones there are one or several distinct methods for placement of cortical implants.

Method 2

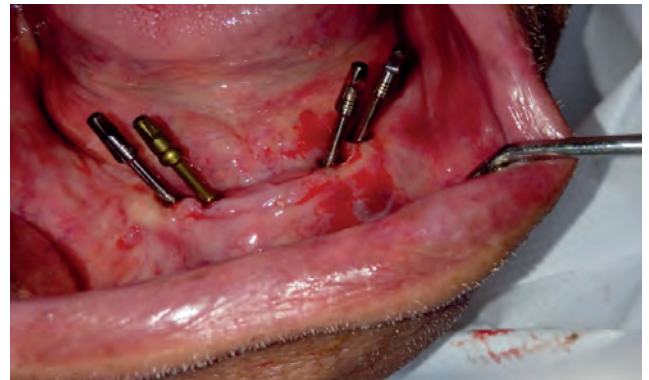


Placement of implants between the mental nerves (in edentulous mandibles), with or without necessity for anchorage in the 2nd (basal) cortical of the mandible.

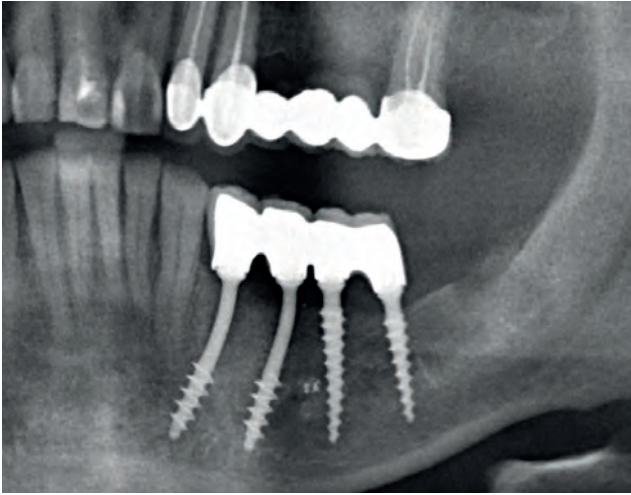
This positioning has three advantages:

- threads are in highly mineralized bone
- mental nerve can be avoided
- the span to the heads of distal implants is reduced

Method 2 Application example



Method 3

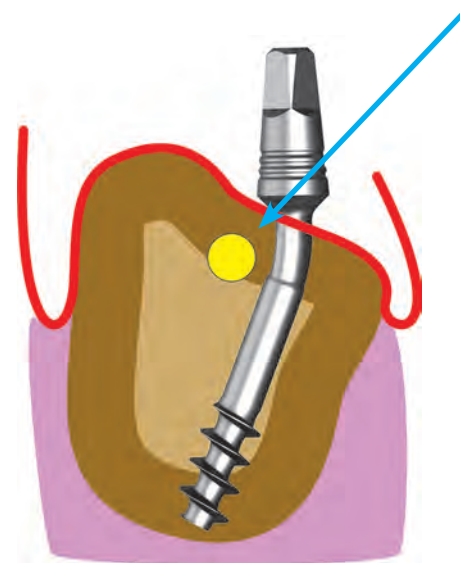
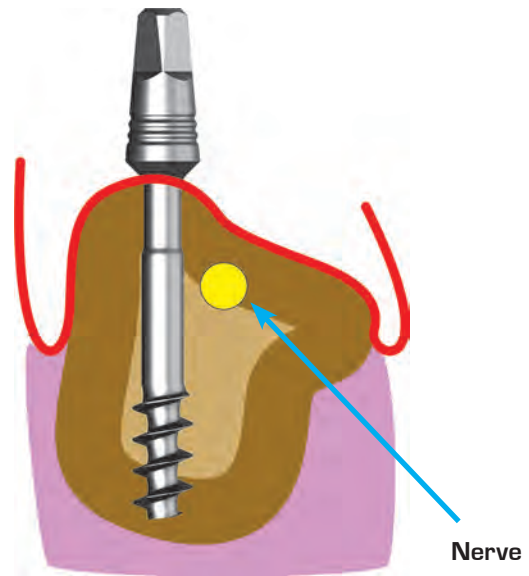


Anterior anchorage of a segment with one or two implants between the mental nerve and the root of the canine.

Method 4a

Nerve Bypass

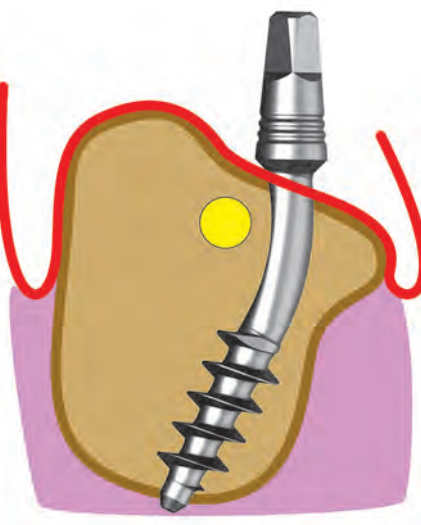
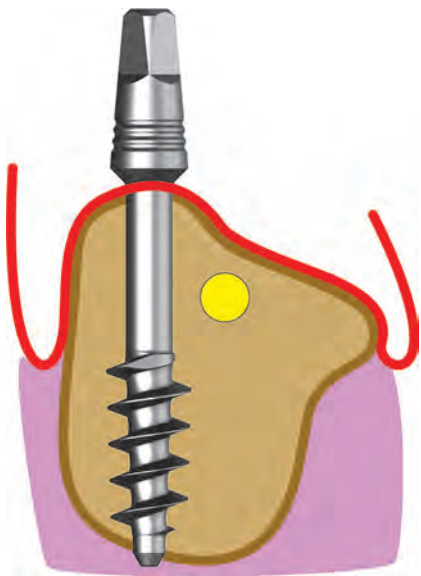
Without prepenetration of the basal cortical.
Stabilisation by using highly mineralized bone are-
als (D1-D3)



Method 4b

Nerve Bypass

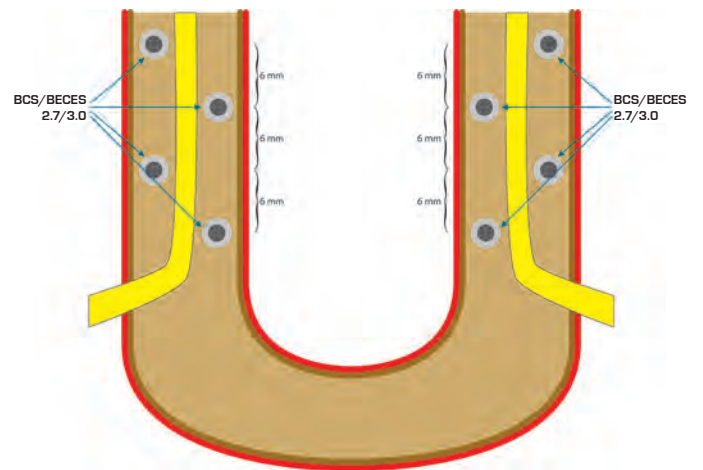
With penetration of the basal cortical
Required thread Diameter: 3.5mm or larger



Method 4a/b

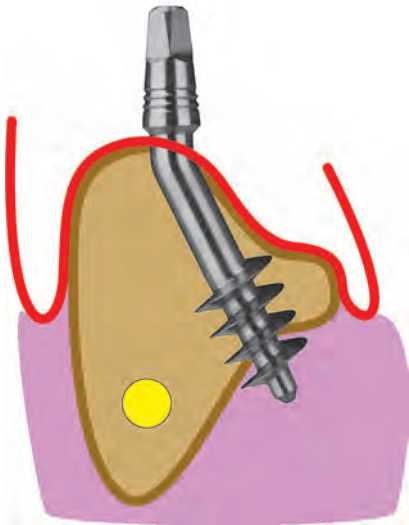
Nerve Bypass

Keep 6mm distance between the implants in case
of strong atrophy in the distal mandible



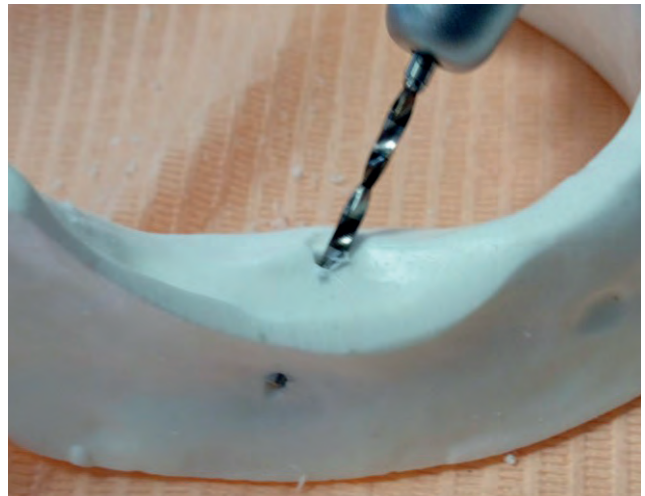
Method 5a

Lingual cortical engagement in the distal mandible



Method 5b

Vestibular cortical engagement in the distal mandible
The drilling must be done with the straight hand-piece to allow for easy insertion of the implant.

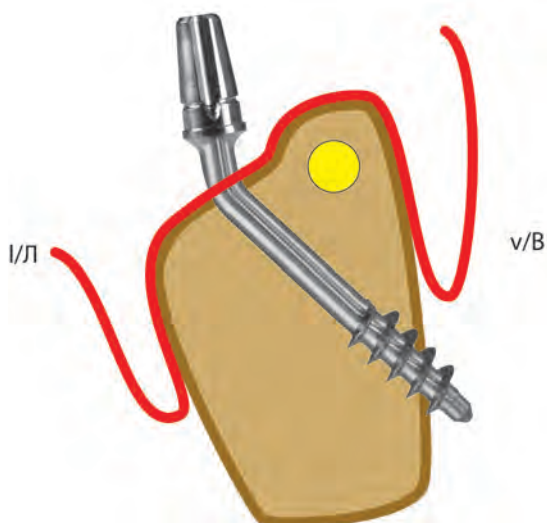
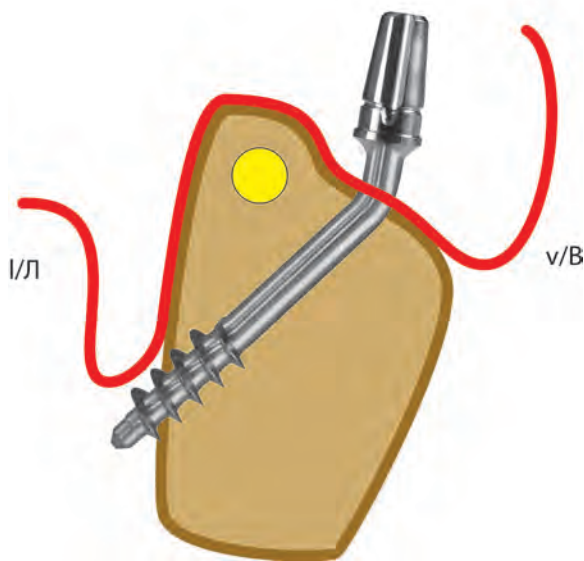


Lingual cortical engagement in the distal mandible. Methods 5a and 5b can be combined, especially for segments.



Method 5c

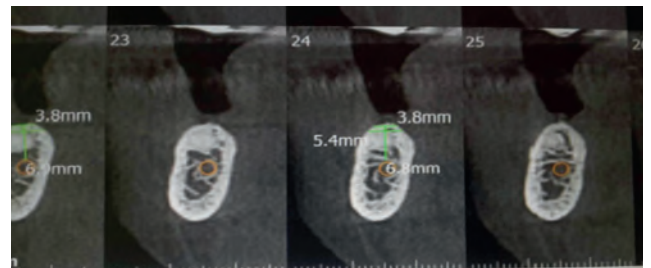
Vestibular or lingual cortical engagement in the distal mandible, with the implant running below the mandibular nerve.



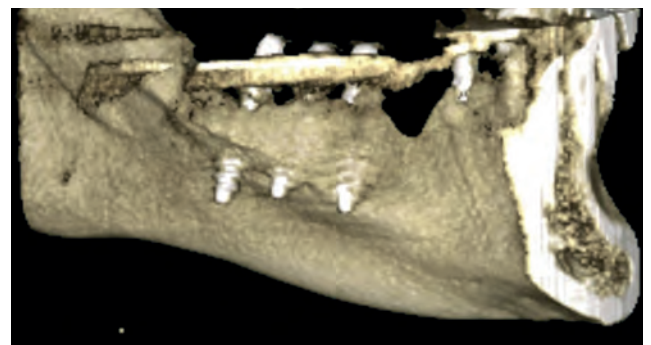
Method 5a Application example



A lower jaw without lingual undercut



In the distal area of the mandible three implants have been placed correctly. All threads penetrate the lingual cortical in the area of the undercut, and they reach the floor of the mouth region. Penetration is required to provide stability against extrusive and intrusive forces.

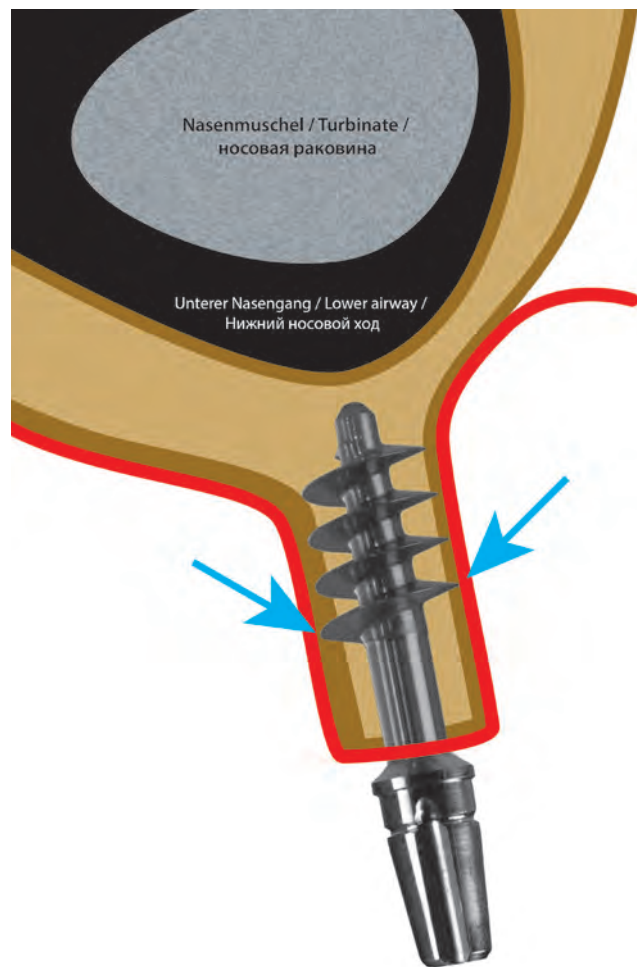


Method 6

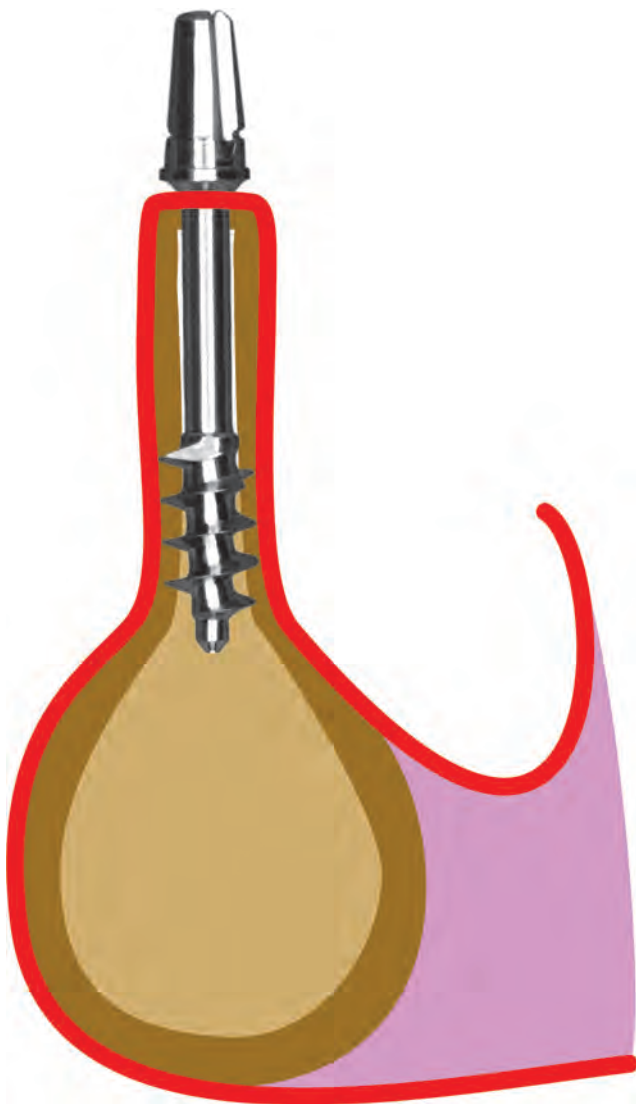
Placement of an implant, for anchoring in the vestibular and palatal/lingual cortical; without usage of the 2nd cortical in axial direction.



Placement of an implant, for anchoring in the vestibular and palatal/lingual cortical; without usage of the 2nd cortical in axial direction.

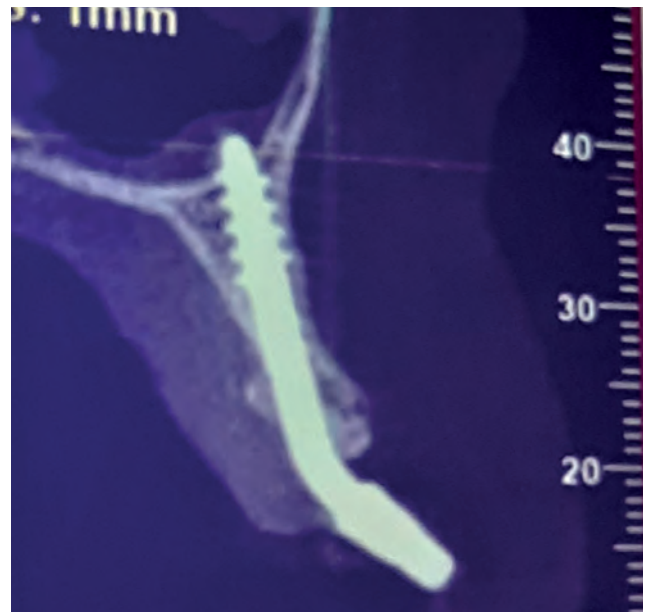


Placement of an implant, for anchoring in the vestibular and palatal/lingual cortical; without usage of the 2nd cortical in axial direction.



Method 7a

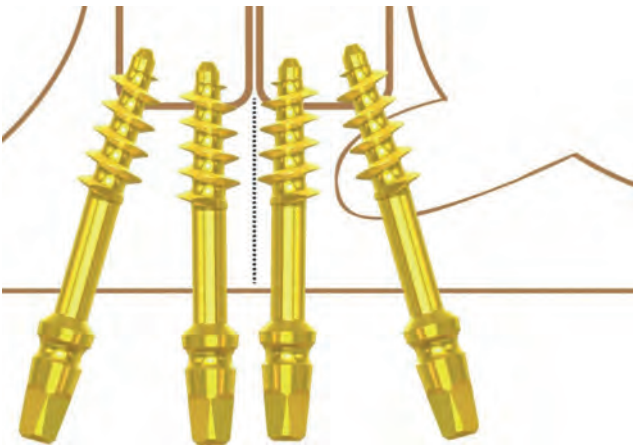
Anchorage of an implant in the cortical floor of the nose. With full penetration of the cortical (to provide retention against extrusive and intrusive forces) and sometimes the mucosa also.



Full penetration of the cortical floor of the nose to provide retention against extrusive and intrusive forces.

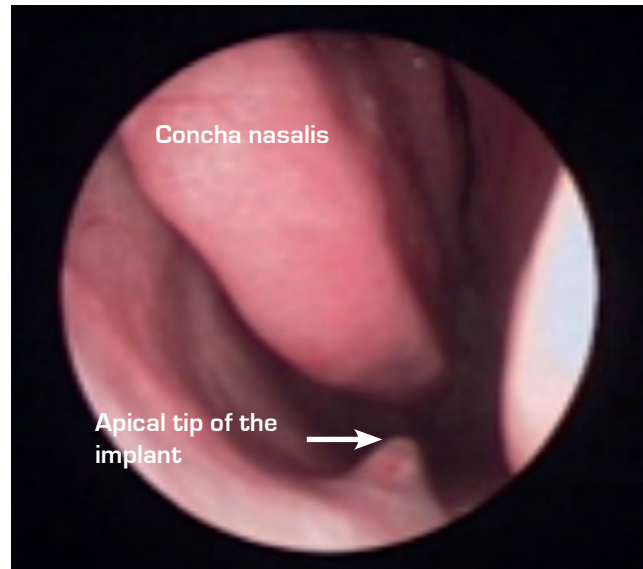


Full penetration of the cortical floor of the nose to provide retention against extrusive and intrusive forces.



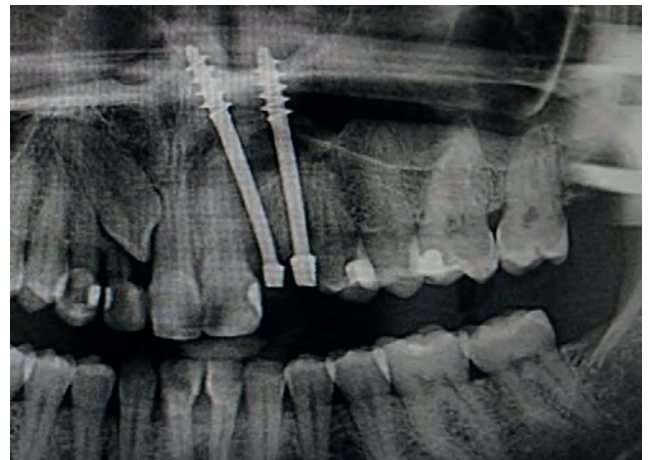
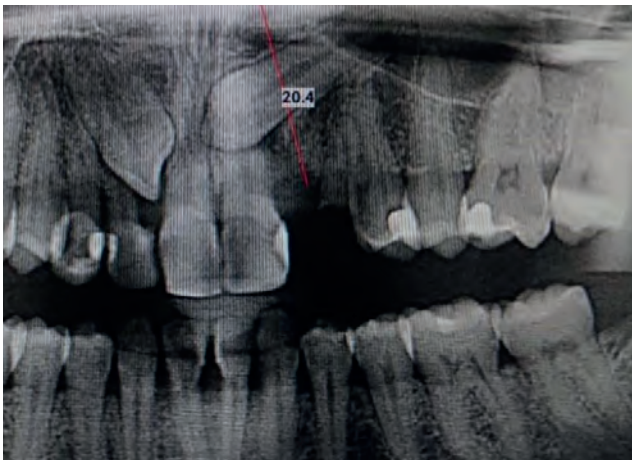
Method 7

In order to achieve a secure anchorage in the floor of the nose, the implant must be screwed through the cortical and slightly into the nose. The implant may be exposed into the lower airway of the nose or it may be covered by mucosa (as shown here).



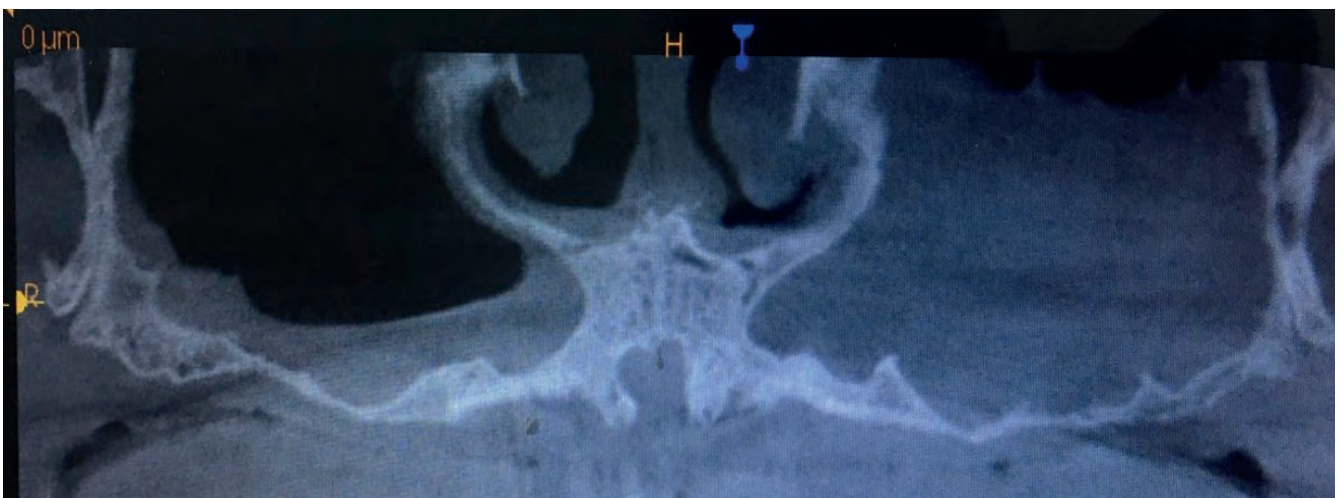
Method 7a

Replacement of 22/23 immediately after removal of the retented canine. Anchorage in the cortical floor of the nose.



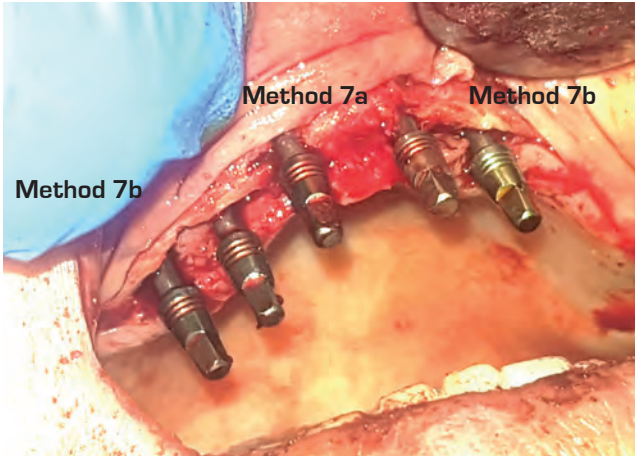
Pre-operative picture

Although very little bone is available this case can be treated by applying standard methods.

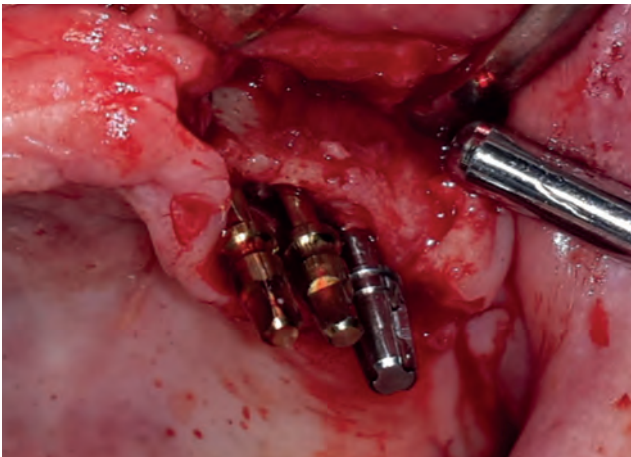


Method 7b

Placement of the implant directly into the 2nd cortical, if there is not enough alveolar bone (knife-edge ridge).



Direct insertion of the implant into the cortical floor of the nose, with the implant being positioned on the palatal side of the alveolar crest.



Method 8

Anchorage in the cortical of the floor of the maxillary sinus.

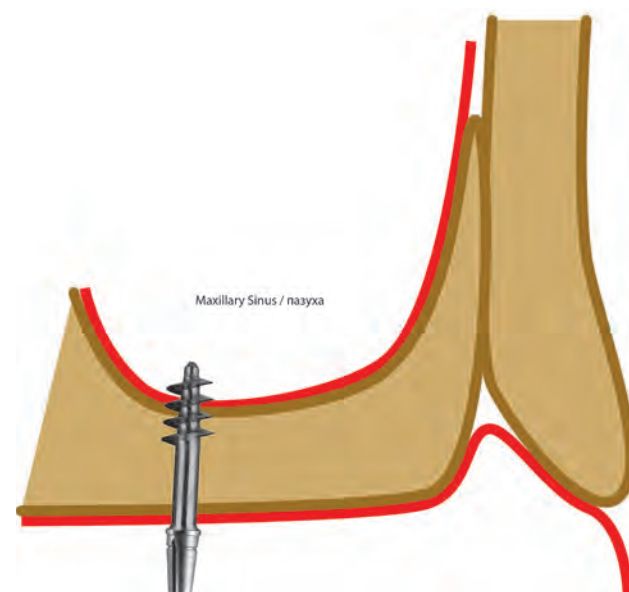


Multi-directional anchorage in the cortical of a septum inside the maxillary sinus.



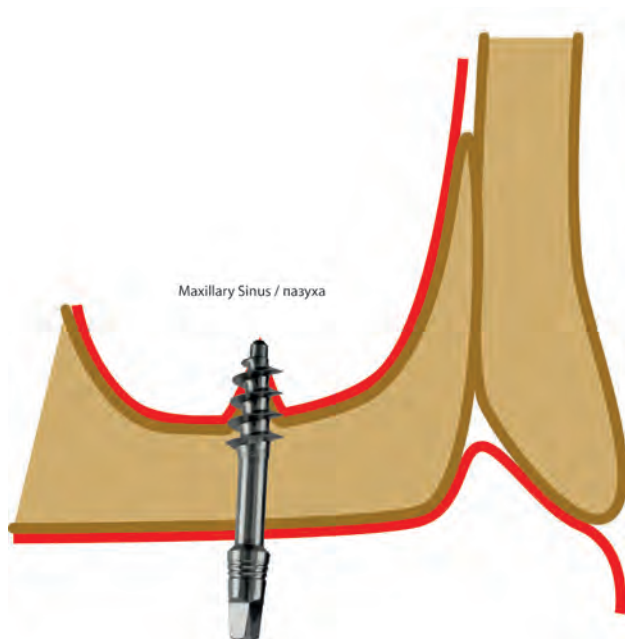
Method 8a

Anchorage in the cortical of the floor of the maxillary sinus.



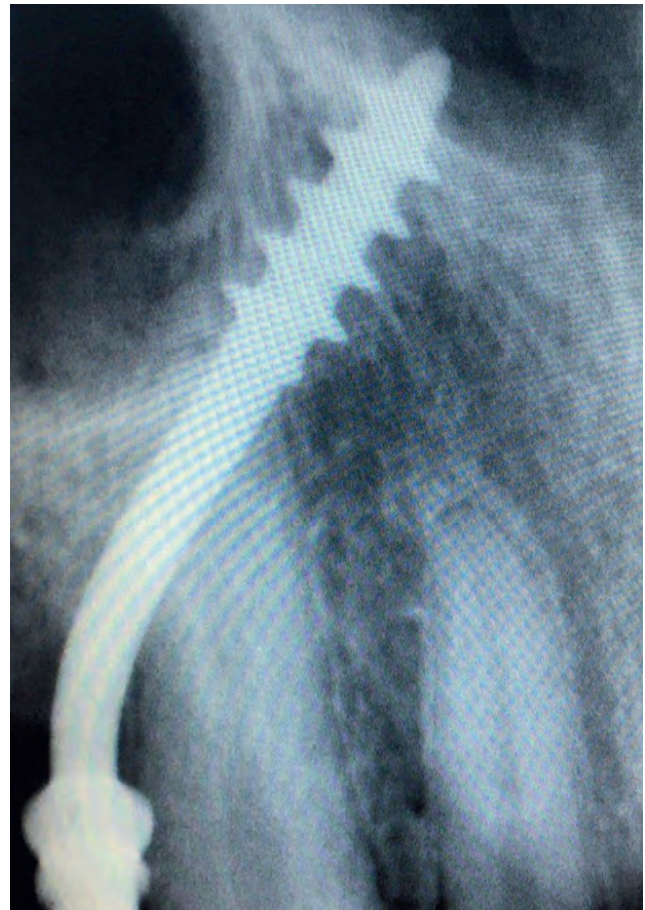
Method 8b

Multi-directional anchorage in the cortical of a septum inside the maxillary sinus.



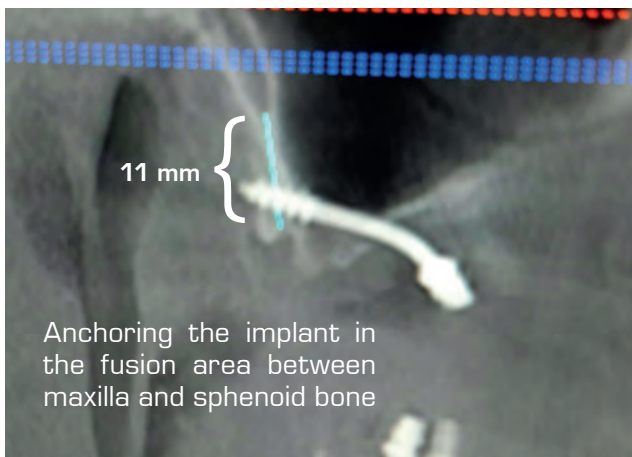
Method 9

Anchorage of the implant in the cortical floor of the nose. The implant enters the 1st cortical in the area of the 1st or 2nd upper premolar and passes by the canine on the palatal side of the root.

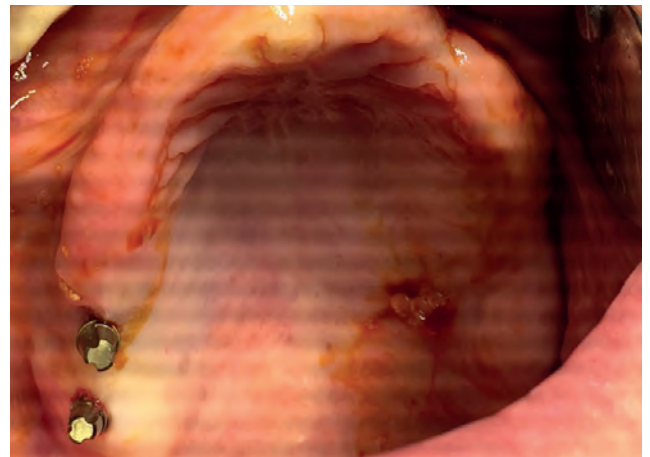


Method 10

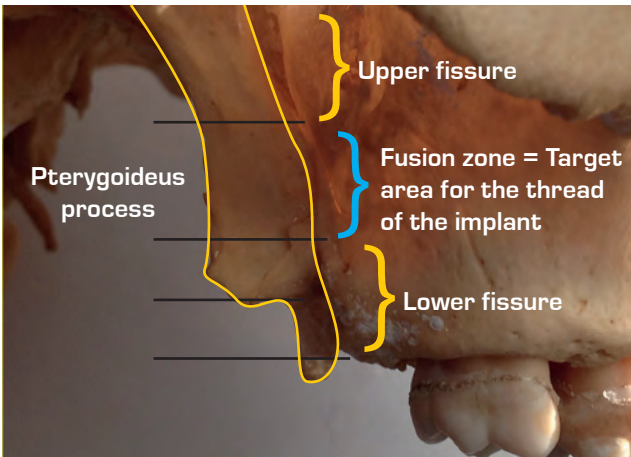
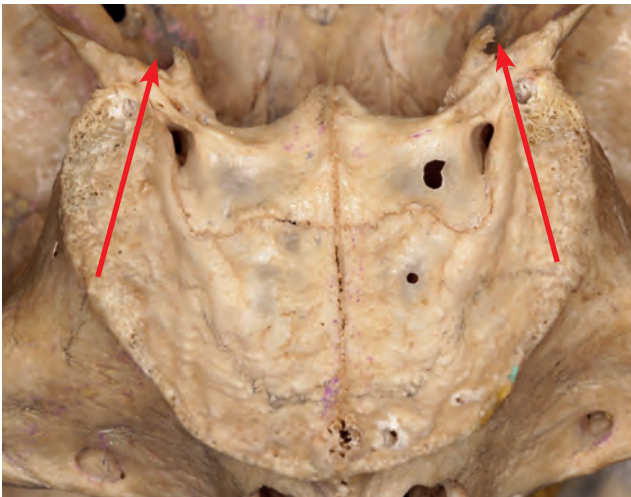
Anchorage of the most distal implant in the upper jaw into the fusion zone between the distal maxilla and the pterygoid process of the sphenoid bone.



Intra-oral view after placement and parallelisation of two tubero-ptyergoid implants.



Direction of insertion for Tubero-ptyergoid implants in a standard case. The apical end of the implant is positioned in the attachment area of the lateral pterygoid muscle.



Method 11a

Insertion of the implant into the bone on the palatal side of the maxillary sinus.

Variants

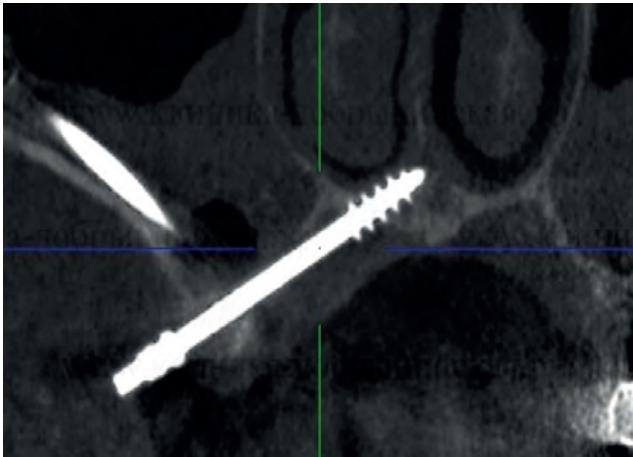
Anchorage with and without reaching the cortical of the (floor of the) nose.

11b Anchorage in the Sutura (Raphe) mediana of maxillary bone.

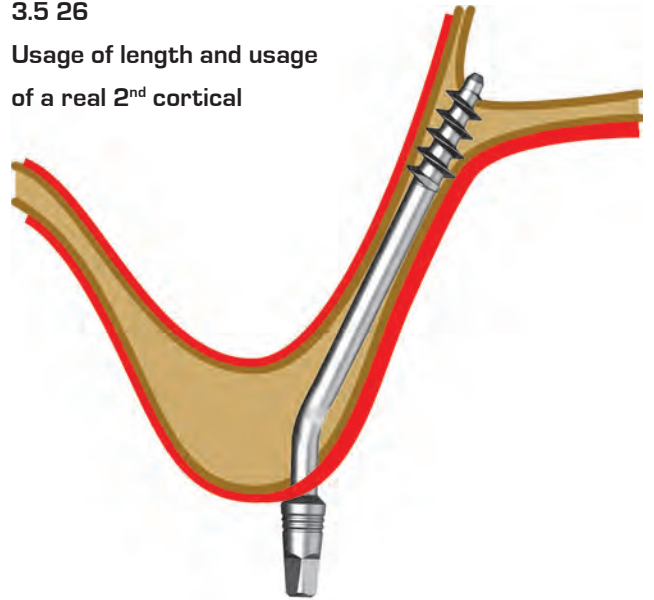


Method 11b

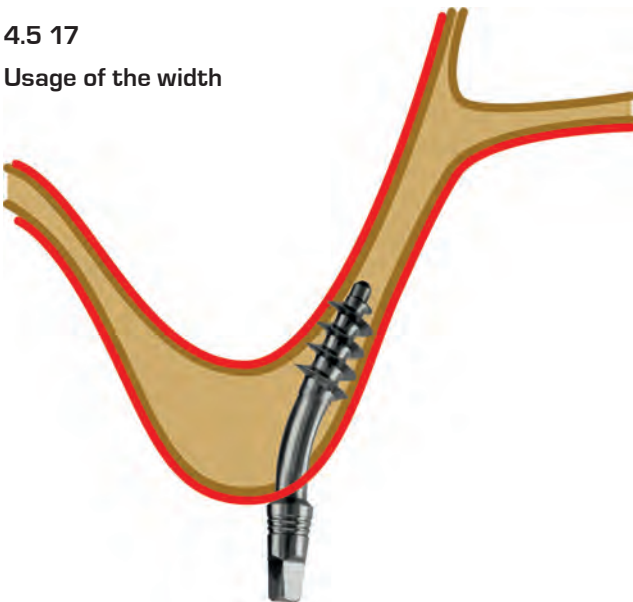
Anchorage in the Sutura (Raphe) mediana of maxillary bone.



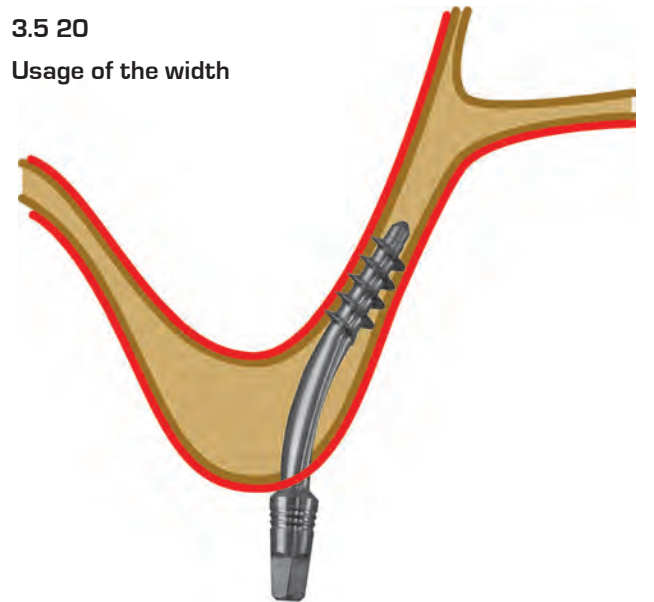
3.5 26
Usage of length and usage of a real 2nd cortical



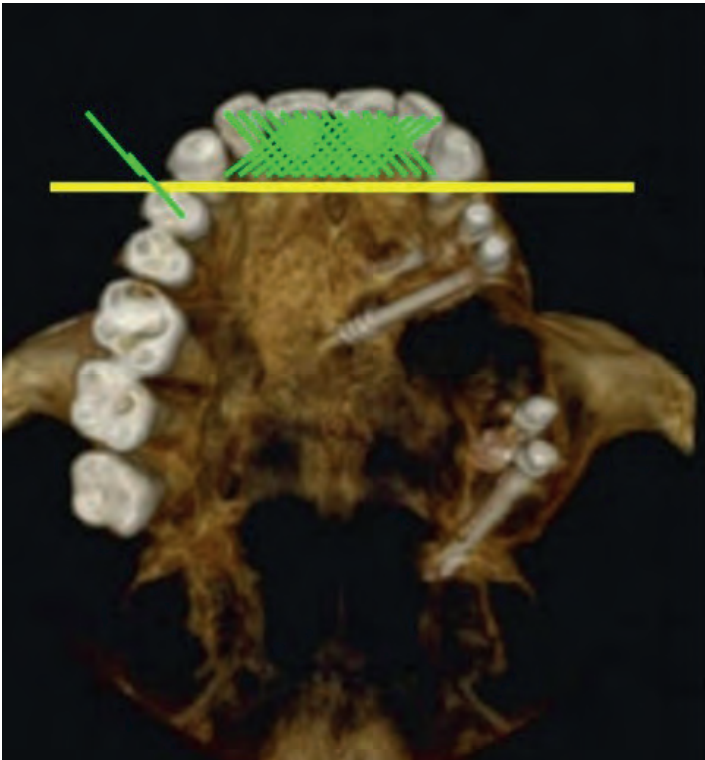
4.5 17
Usage of the width



3.5 20
Usage of the width



Method 9 vs. Method 11b



METHOD
11



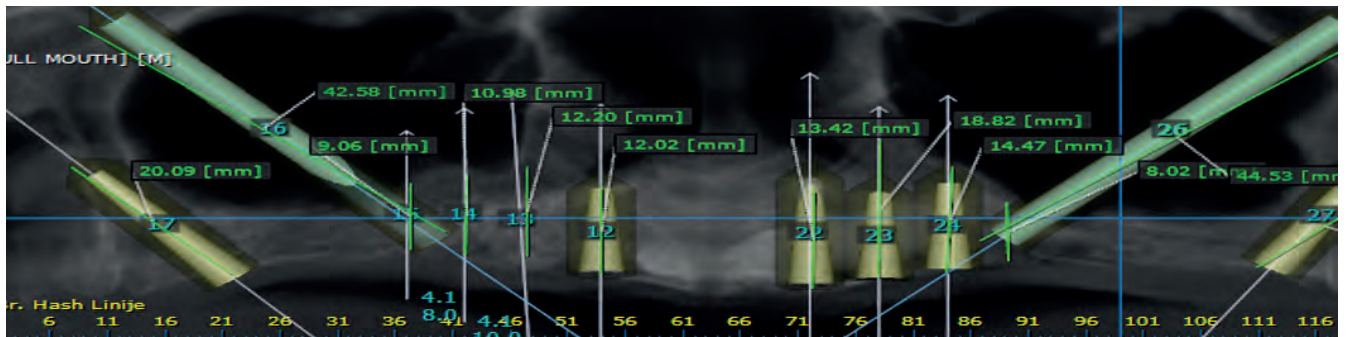
METHOD
9

[Canine Bypass]

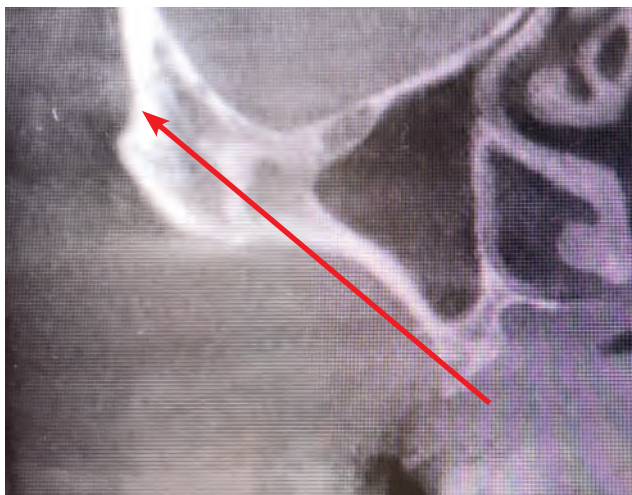
Method 12

Anchorage of the implant in the body of the zygomatic bone

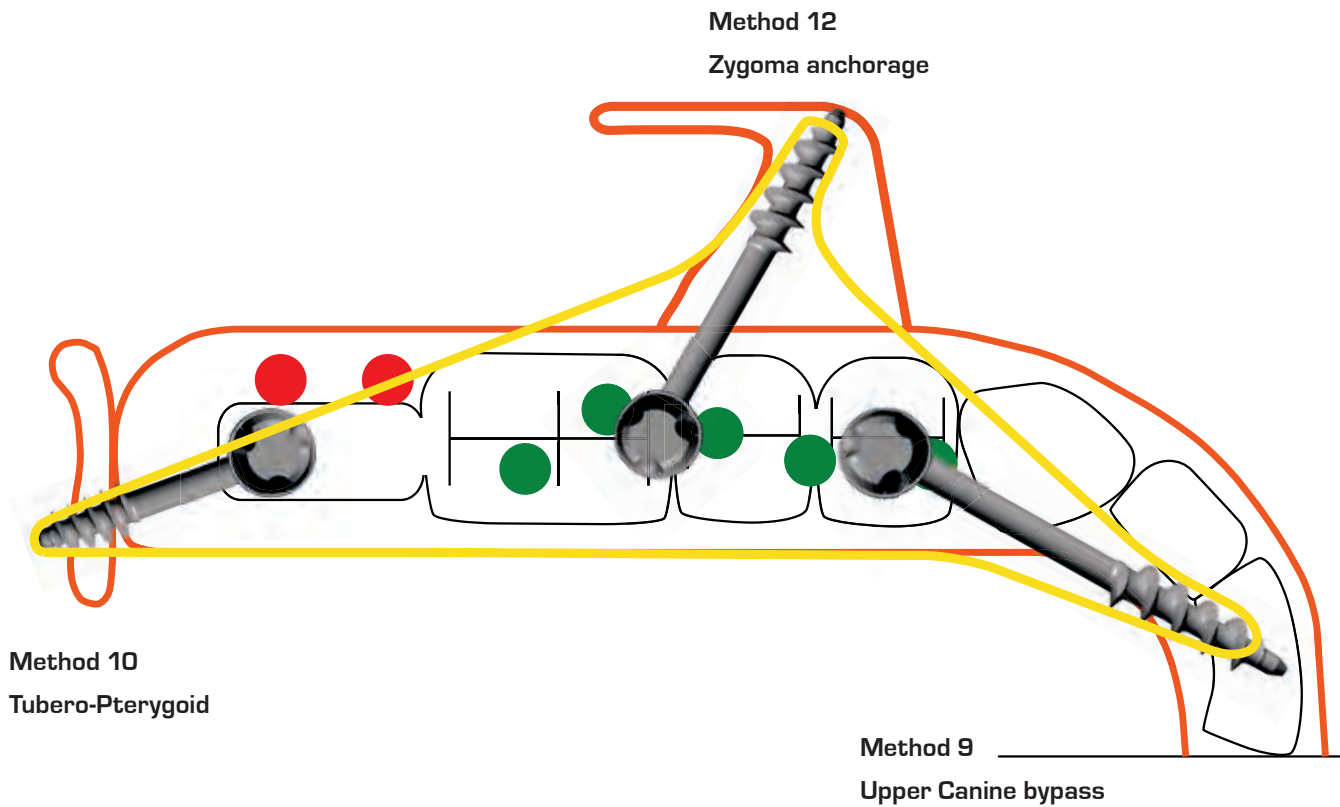
- on a direct way, without transition of the maxillary sinus
- through a trans-sinusal approach



Extra-sinusal path of the zygomatic implant (anatomy here permits this type of placement).

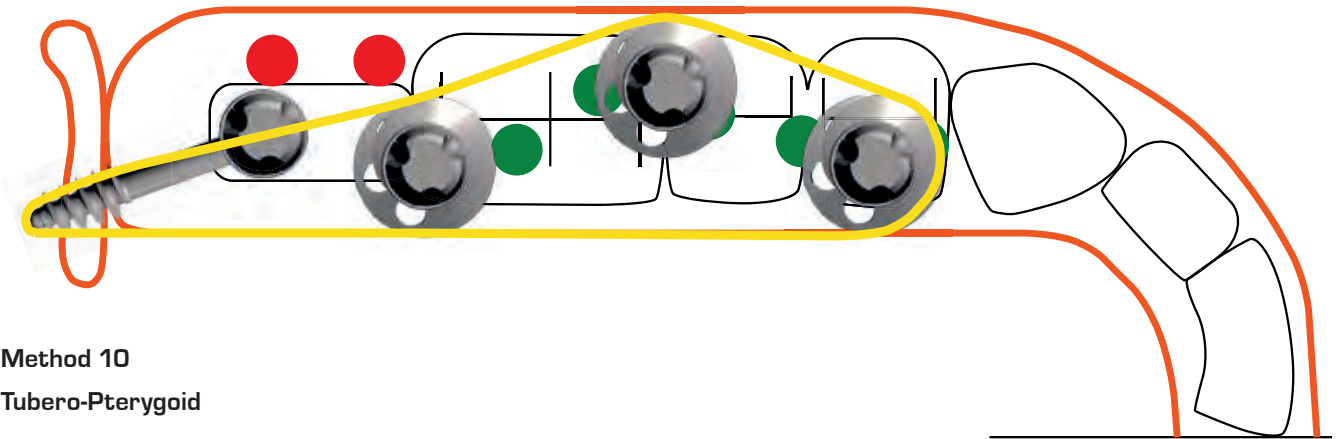


Considerations regarding the combination of methods and the size of the achievable supporting polygon



Considerations regarding the combination of methods and the size of the achievable supporting polygon

Method 6
Vestibular/palatal anchorage,
or Method 8a/8b
Anchorage in the basal cortical of the maxillary sinus



Method 10
Tubero-Pterygoid

Method 13

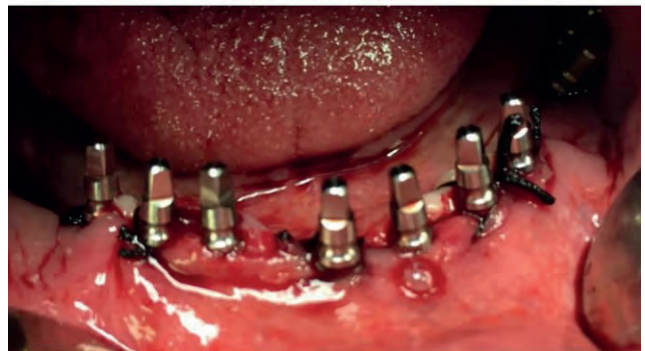
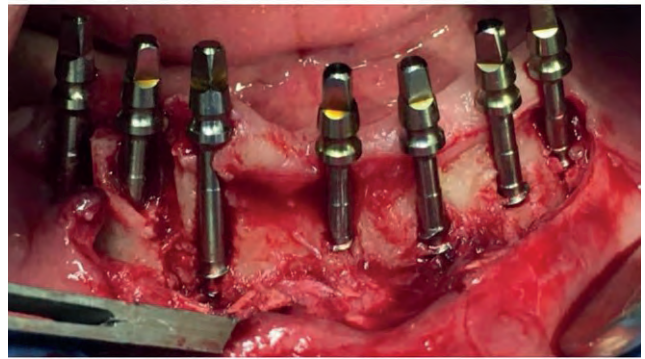
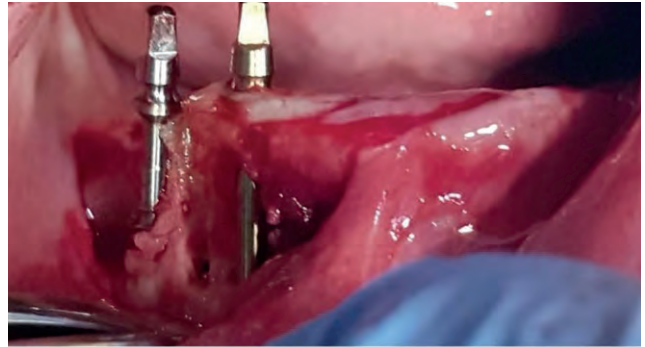
Insertion of the implant from the vestibular aspect of the anterior mandible.

Implant diameters: 2.7 and 3.0 mm

The implant will work partially as a subperiosteal implant. Anchorage is achieved in the cortical base of the mandible.



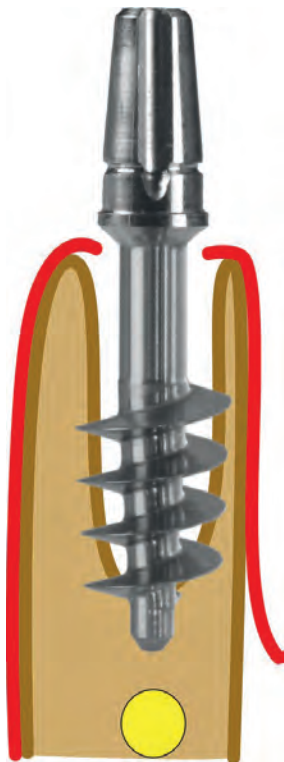
Treatment example Method 13.



Method 14

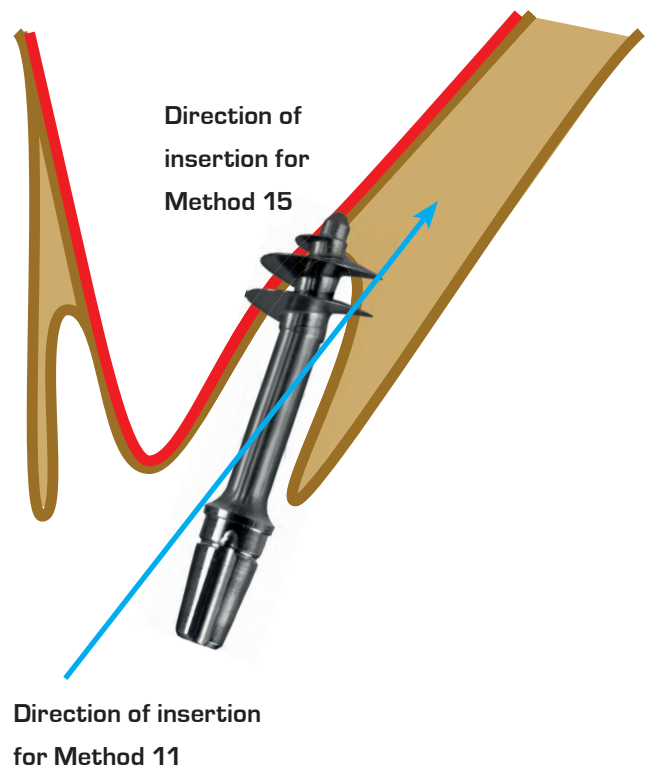
Anchorage of an implant with slightly larger diameter in the extraction socket of a lower or upper premolar. The diameter should be 4.5 or 5.5.

Typically there is not enough space for placement of two implants of 5.5 mmd in both sockets of the lower or upper premolars.



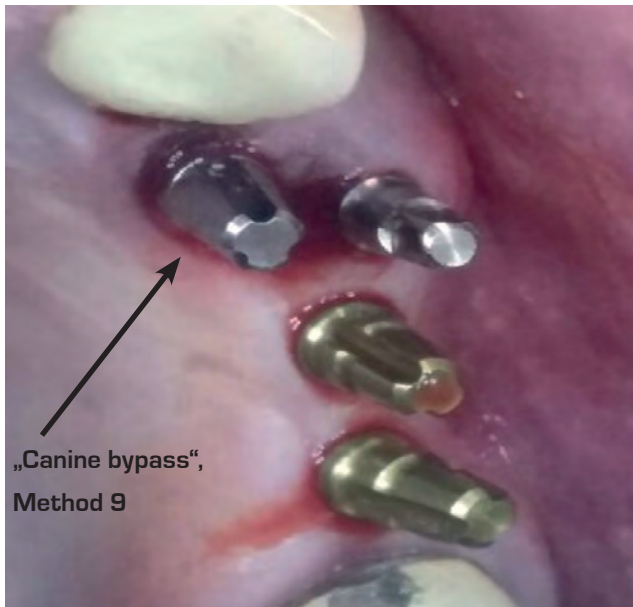
Method 15

Insertion of one implant with diameter 4.6 – 9 mm into the extraction socket of the 1st or 2nd upper molar. Usage of the palatal root region only.



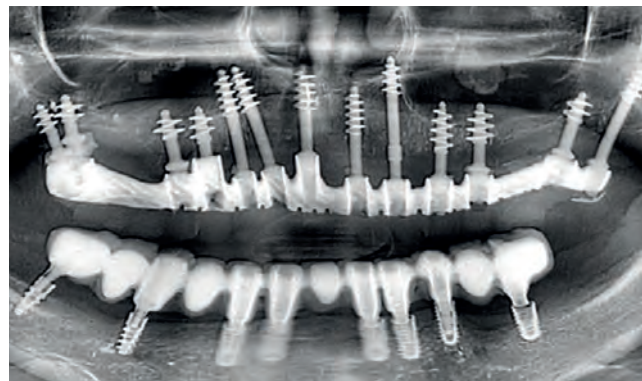
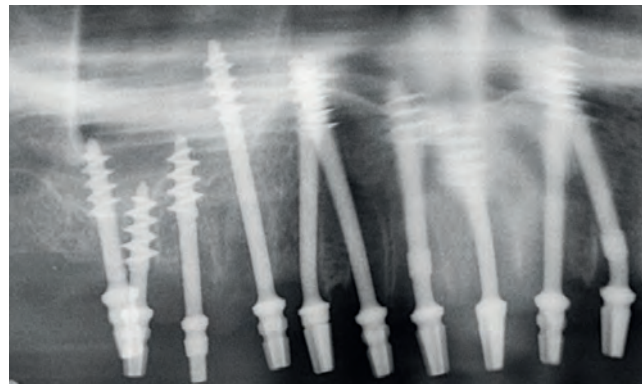
Method 16a

Placement of two implants into the two separate extraction sockets of one upper premolar. The implant on the palatal side is directed to the floor of the nose.



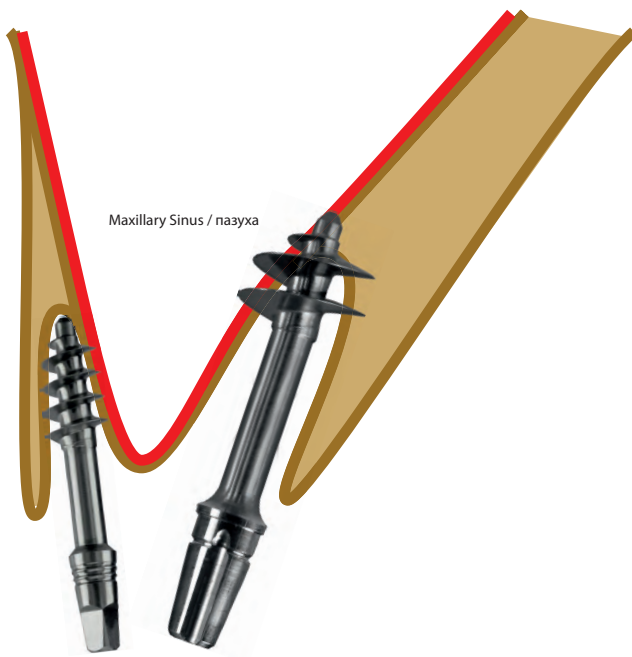
Method 16b

Usage of two different extraction sockets of upper 1st or 2nd molars for two cortico-basal implants.



Method 16b

Usage of two different extraction sockets of upper 1st or 2nd molars for two cortico-basal implants.



Консенсус, посвященный 16 признанным и клинически подтвержденным методам и субметодам установки кортикобазальных дентальных имплантатов (CORTICOBASAL® ORAL IMPLANTS)

Авторские права: International Implant Foundation, Munich, Германия 2018/2019/ 2020. Эта третья версия консенсуса, которая заменяет все предыдущие версии, и в последний раз он был пересмотрен в январе 2020.

Уровень достоверности: S3 (основано на принципах доказательной медицины, систематически разработанное консенсусное руководство).

Другие применимые правила и документы:

Общие правила лечения в области травматологии и оперативной ортопедии.

Indications and treatment modalities with corticobasal jaw implants. IF Consensus Document 2019. Ann Maxillofac Surg 2019;9:379-86.

Литература (выдержка):

1. Dobrinin O., Lazarov A, Konstantinovic V.K., et al. Immediate-functional loading concept with one-piece implants (BECES/BECES N /KOS/ BOI) in the mandible and maxilla- a multi-center retrospective clinical study. J. Evolution Med. Dent. Sci. 2019;8(05):306-315, DOI: 10.14260/jemds/2019/67
2. Lazarov A. Immediate functional loading: Results for the concept of the Strategic Implant®. Ann Maxillofac Surg 2019;9:78-88.
3. Pałka ŁR, Lazarov A. Immediately loaded bi-cortical implants inserted in fresh extraction and healed sites in patients with and without a history of periodontal disease. Ann Maxillofac Surg 2019;9:371-8.
4. Ihde S., Ihde A., Lysenko V., Konstantinovic V, Pałka ŁR New Systematic Terminology of cortical Bone areals for osseo-fixated Implants in Strategic Oral Implantology; J.J.Anatomy, 2016, 1(2), 007
5. Gaur V., Doshi A., Ihde S., Ihde A., Palka L. Multi-unit connection for the Strategic Implant®: an innovative way for achieving retrievability of prosthetics on fully polished single piece implants used in an immediate loading protocol. CMF Impl Dir 2020; 14: 3 - 34
6. Motaz Osman, Abdelnasir G. Ahmad, and Fadia Awadalkreem A Novel Approach for Rehabilitation of a Subtotal Maxillectomy Patient with Immediately Loaded Basal Implant-Supported Prosthesis: 4 Years Follow-Up ; Hindawi Case Reports in Dentistry Volume 2020, Article ID 9650164, 7 pages <https://doi.org/10.1155/2020/9650164>
7. Fadia Awadalkreem, Nadia Khalifa, Abdelnasir G. Ahmad, Ahmed Mohamed Suliman, Motaz Osman; Prosthetic Rehabilitation of maxillary and mandibular gunshot defects with fixed basal implant supported prostheses: a 5 year follow-up case report. Int J. of surgery Case reports 68(2020) 27-31
8. Ihde S, Palka L. Anchorage possibilities in case of unilateral maxillary defect using the concept of the Strategic Implant(R) Natl J Maxillofac Surg. 2018 Jul-Dec;9(2):235-239. doi: 10.4103/njms.NJMS_36_18.
9. Konstantinovic VS, Lazic V., Ihde S. Disk implants retained nasal epithesis. Case report and literature review. J Craniofac Surg 2010;21: (1) 33-36
10. Barrachina-Diez J.M. et al. Long term outcome of one-piece Implants. Part I: Implant Characteristics and Loading Protokols. A systematic Literature Review with Meta Analysis Int J Oral Maxillofac Implnts 2013; 28:503-518

Метод No	
1a Общий	<p>Мультинаправленная установка имплантатов, при которой имплантаты устанавливаются под углом друг к другу. Для создания возможности введения ортопедической конструкции осуществляются следующие шаги: Параллельность абатментов достигается за счет сгибания стержня/шеек имплантатов, или при помощи угловых адаптеров (в качестве промежуточных элементов), или шлифования абатментов.</p> <p>Ортопедическая конструкция и имплантаты соединяются при помощи ортопедических винтов (для Multiunit дизайна имплантатов Corticobasal®).</p>
1b Общий	<p>Установка имплантатов в стратегических позициях и добавление дополнительных поддерживающих имплантатов в других областях кости челюсти.</p>
1c Общий	<p>Фиксация имплантатов во 2-ом и 3-ем кортикальном слое, независимо от «альвеолярной кости».</p> <p>Предпочтительными областями для фиксации являются кортикальные области, не подвергающиеся резорбции.</p>
1d Общий	<p>Установка имплантатов Corticobasal® в случаях активного и тяжелого поражения тканей пародонта. Под прикрытием сильных местных дезинфицирующих средств удаляются зубы и последовательно пораженные мягкие ткани пародонта. Сразу же устанавливаются кортикобазальные имплантаты Corticobasal®, которые потом шинируются при помощи жесткой ортопедической конструкции.</p>
1e Общий	<p>Для фиксации имплантатов следует избегать областей, где располагается губчатая альвеолярная кость. Достижение «остеоинтеграции» не является первоочередной задачей лечения при установке имплантатов.</p>
1f Общий	<p>Установка полированных тел имплантатов, изготовленных из материала, пригодного для имплантации, с целью достижения механической фиксации в кортикальных костных зонах челюстно-лицевой области. В последующем проводится их шинирование при помощи ортопедической конструкции согласно протоколу немедленной нагрузки.</p>
1g Общий	<p>Придание имплантату антиротационных свойств за счет сгибания внутрикостной части вертикального стержня имплантата.</p>
1h Общий	<p>Достижение первичной стабильности при помощи вертикальной конденсации губчатой кости за счет <u>широкого тела</u> имплантатов VCS. Широкое тело= большой объем тела имплантата в области резьбы.</p>

Зоноспецифические методы

Для каждой области челюстных костей существует один или несколько отдельных методов установки кортикальных имплантатов.

Метод 2

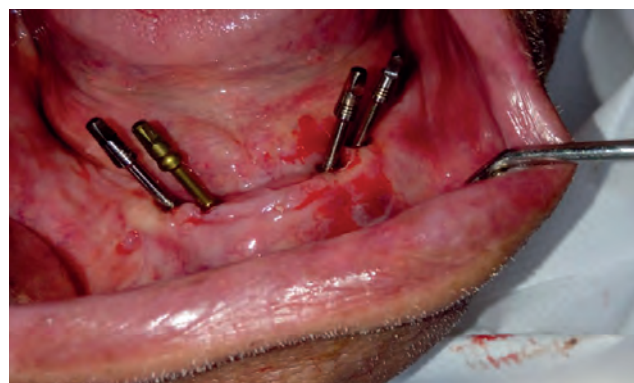


Установка имплантатов между ментальными отверстиями (при адентии нижней челюсти) с или без необходимости фиксации во 2-ом (базальном) кортикальном слое нижней челюсти.

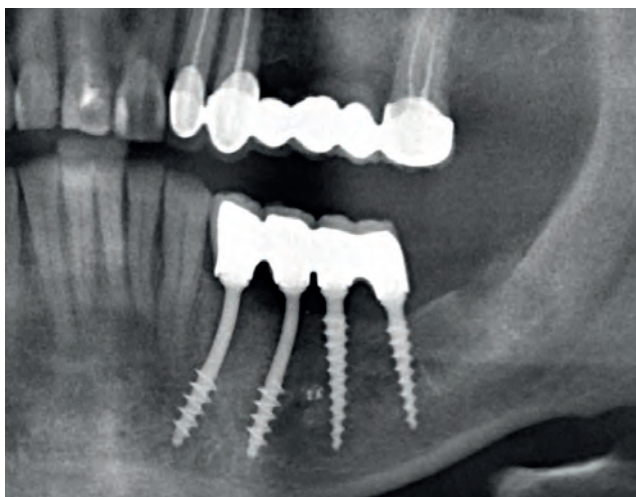
Такое позиционирование имеет 3 преимущества:

- резьба находится в высоко минерализованной кости
- можно обойти нижнечелюстной нерв.
- уменьшается промежуточная часть до абатментов дистальных имплантатов.

Метод 2 Пример применения



Метод 3

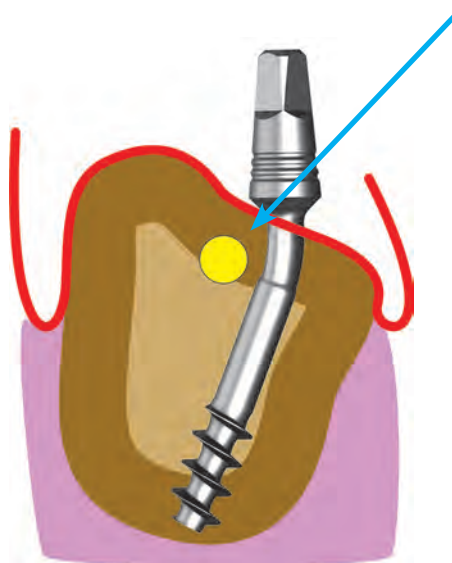
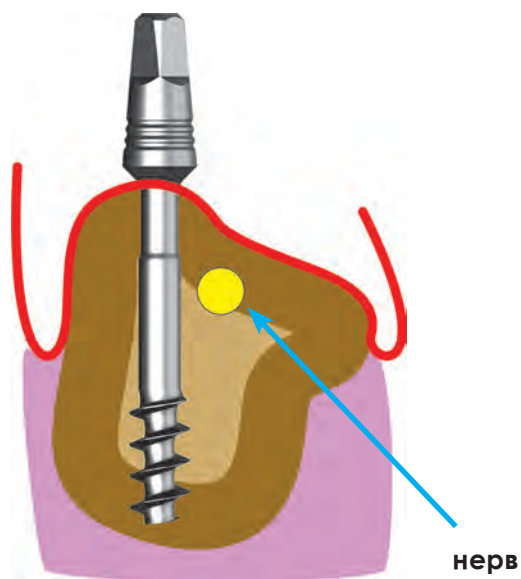


Установка одного или двух имплантатов в промежутке между корнем клыка и ментальным отверстием для опоры передней части сегментарного мостовидного протеза.

Метод 4а

Байпас (обход) нерва (Nerve Bypass)

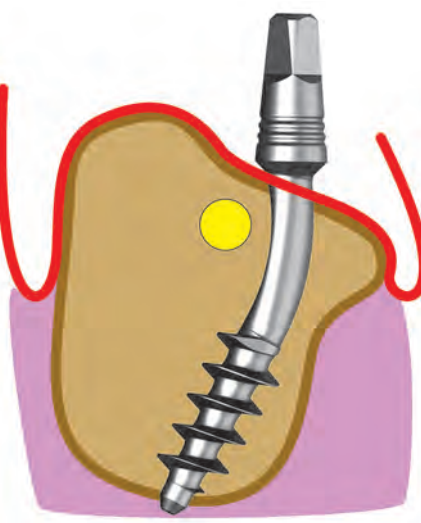
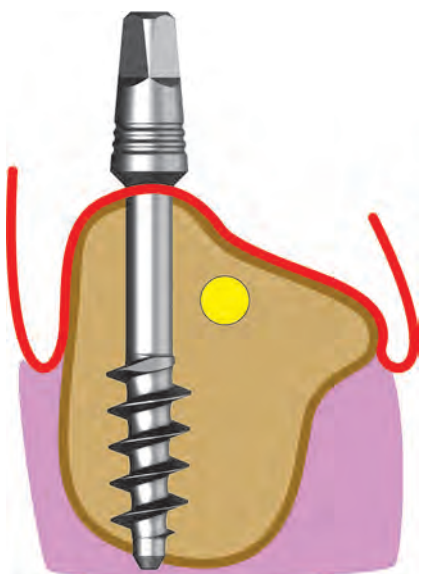
Без пенетрации базального кортикального слоя. Стабилизация с использованием сильно минерализованных участков кости (D1-D3)



Метод 4b

Байпас (обход) нерва (Nerve Bypass)

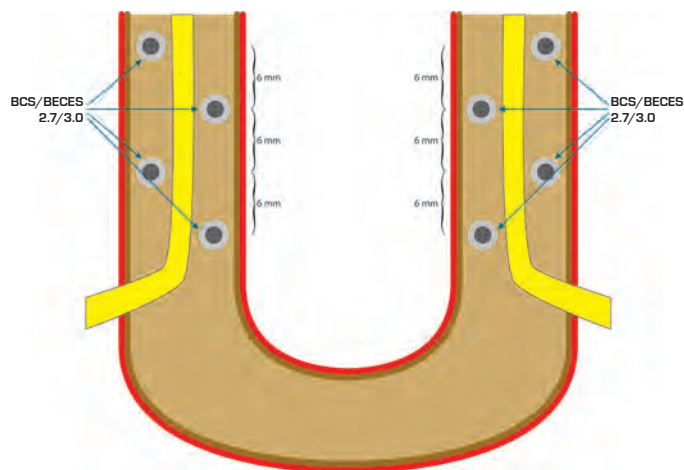
базального кортикального слоя. Необходимый диаметр резьбы 3.5mmd или больше



Метод 4a/b

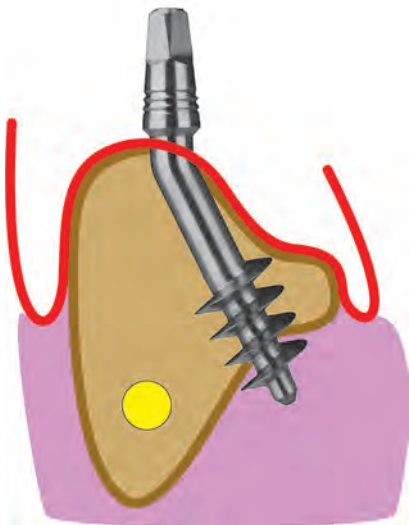
Байпас (обход) нерва (Nerve Bypass)

Соблюдайте расстояние 6 мм между имплантатами в случае сильной атрофии в дистальном отделе нижней челюсти



Метод 5a

Лингвальная кортикальная фиксация в дистальном отделе нижней челюсти



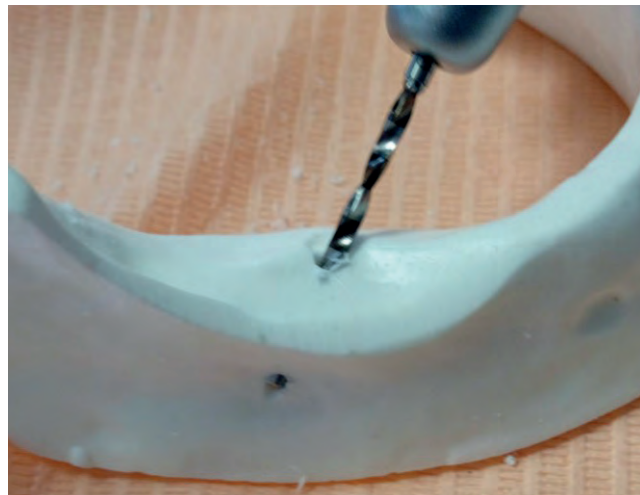
Лингвальная кортикальная фиксация в дистальном отделе нижней челюсти. Методы 5a и 5b можно комбинировать, особенно для сегментов.



Метод 5b

Вестибулярная кортикальная фиксация в дистальных отделах нижней челюсти

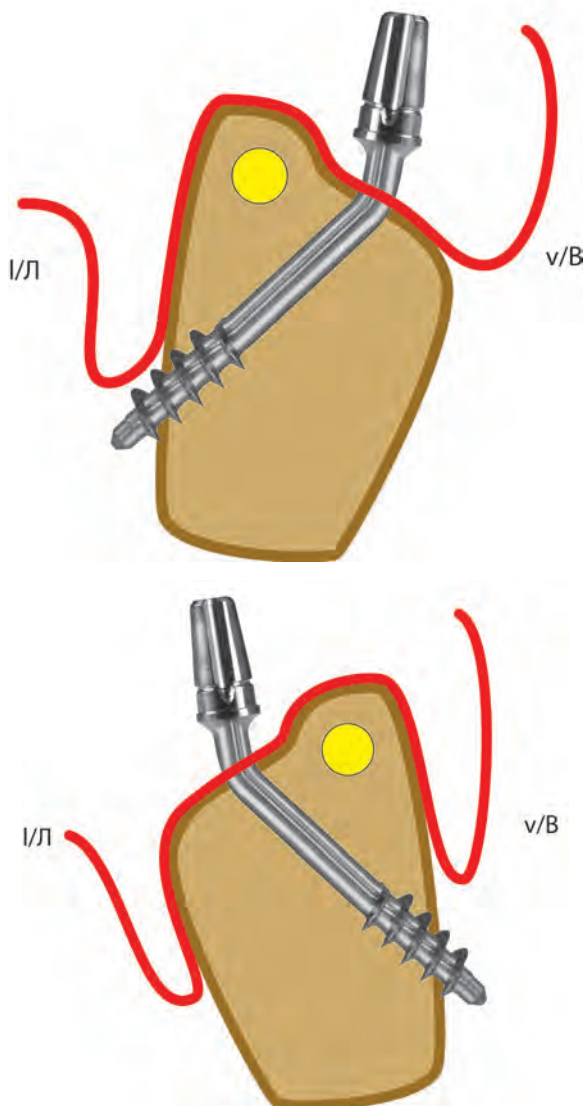
Сверление должно выполняться с помощью прямого наконечника, чтобы можно было легко установить имплантат.



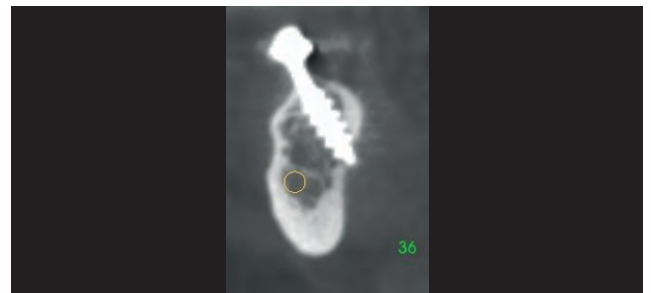
Метод 5с

Вестибулярная или лингвальная кортикальная фиксация в дистальном отделе нижней челюсти,

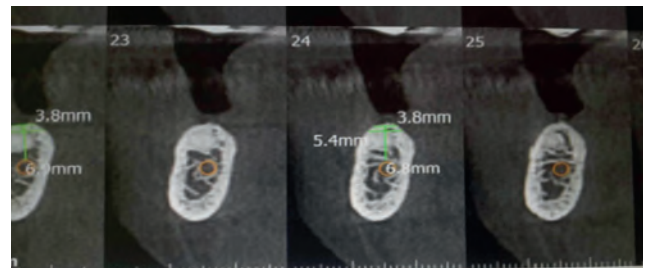
когда имплантат проходит ниже нижнечелюстного нерва.



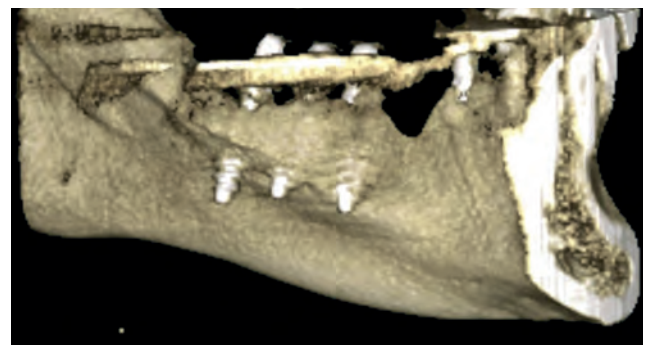
Метод 5а Пример применения



Нижняя челюсть без лингвального поднутрения



В дистальном отделе нижней челюсти три имплантата расположены правильно. Все нити резьбы пенетрируют лингвальную кортикальную пластину в области поднутрения и достигают дна полости рта. Проникновение требуется для обеспечения устойчивости против экстрозионных и интрузионных сил.

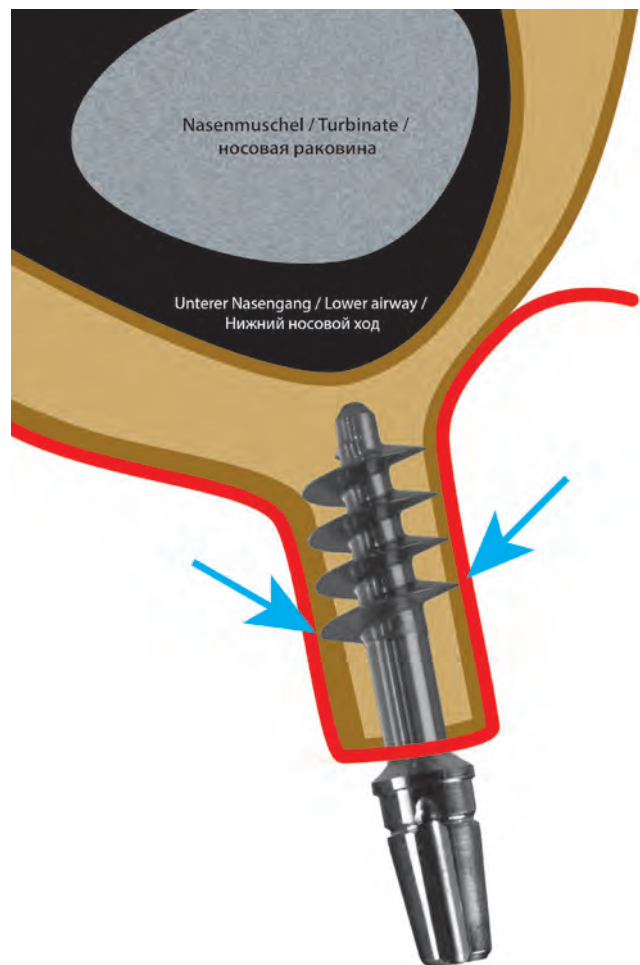


Метод 6

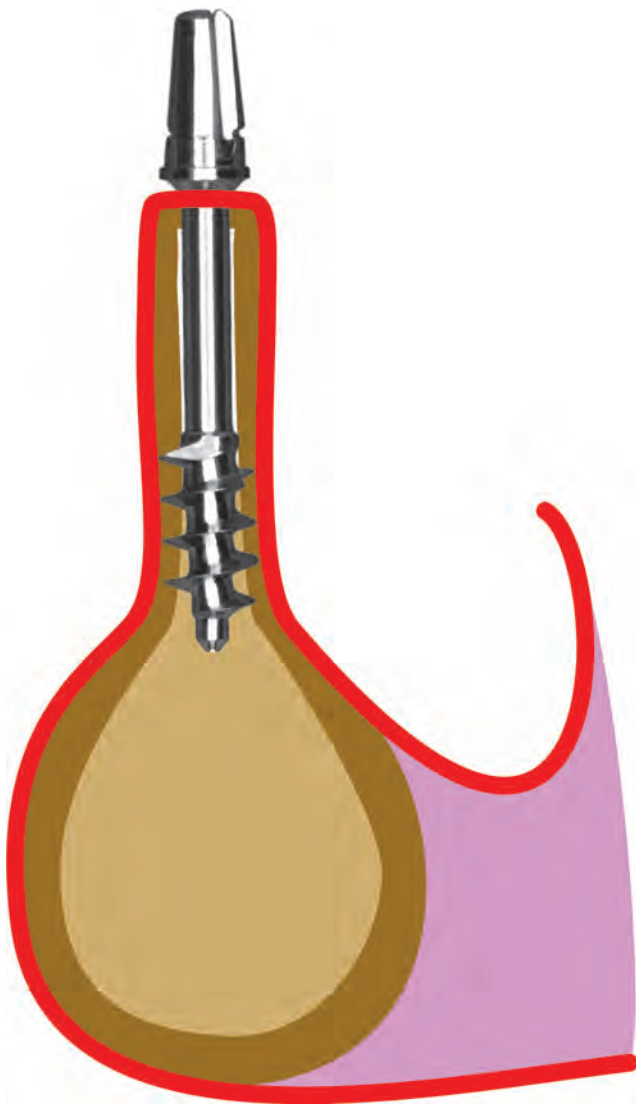
Установка имплантата для фиксации в вестибулярном и небном/ лингвальном кортикальном слое; без использования 2-ой кортикальной пластины в осевом направлении.



Установка имплантата для фиксации в вестибулярной и небной / лингвальной кортикальной пластине; без использования 2-ой кортикальной пластины в осевом направлении.

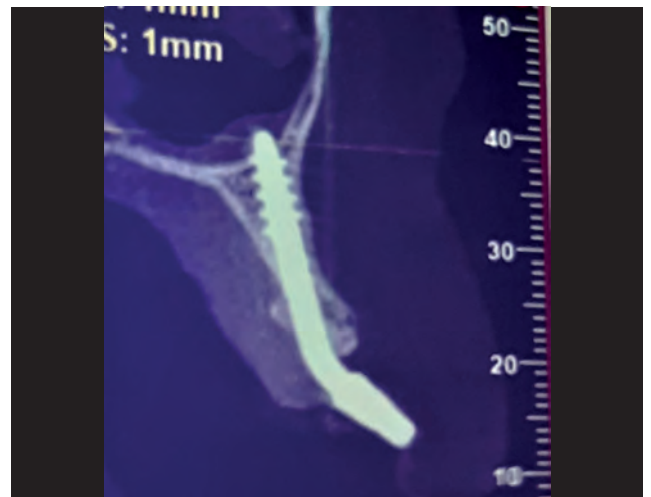


Установка имплантата для фиксации в вестибулярной и небной/ лингвальной кортикальной пластине; без использования 2-ой кортикальной пластины в осевом направлении.

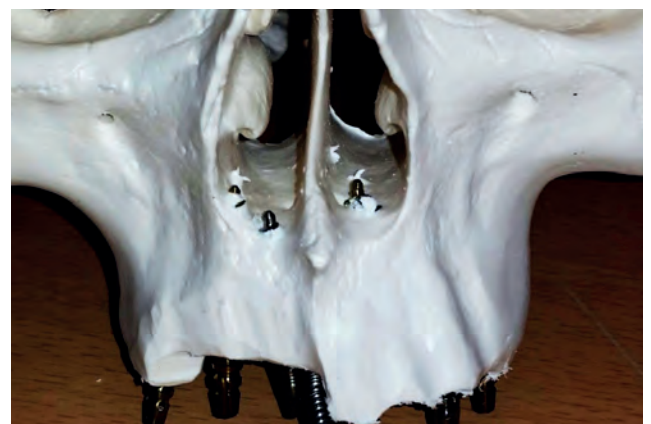


Метод 7a

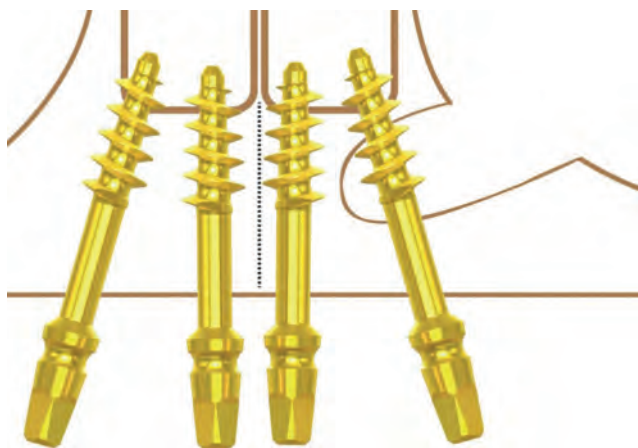
Фиксация имплантата в кортикальном слое дна полости носа. При полном проникновении через кортикальную пластину (для обеспечения удержания от экстрозионных и интрузионных сил), а иногда и через слизистую оболочку.



Полное проникновение в кортикальное дно полости носа для обеспечения удержания от экстрозионных и интрузионных си.

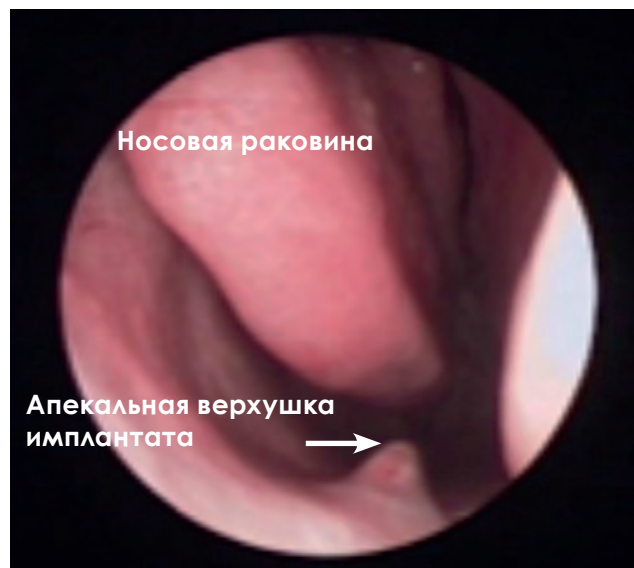


Полное проникновение в кортикальное дно полости носа для обеспечения удержания от экструзионных и интрузионных сил.



Метод 7

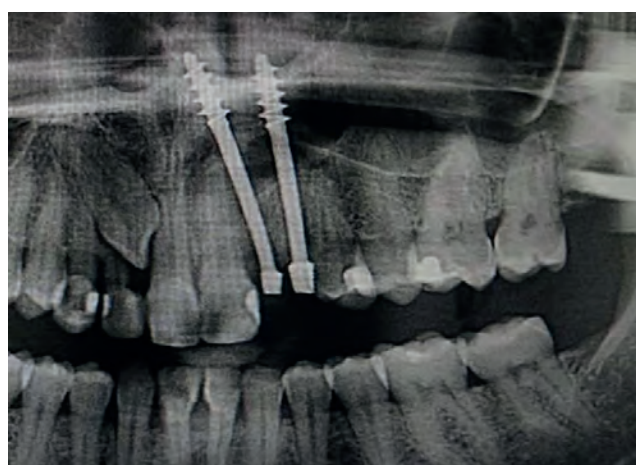
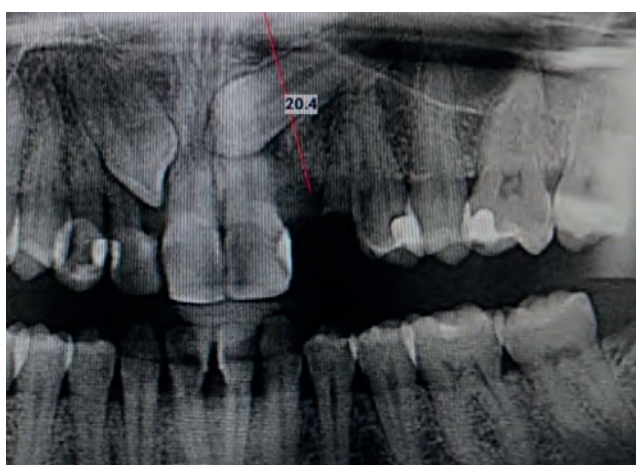
Для того, чтобы добиться безопасного закрепления в области дна полости носа, имплантат должен пройти через кортикальную пластину и слегка в полость нос. Имплантат может проникнуть в нижние дыхательные пути носа или он может быть покрыт слизистой оболочкой (как показано здесь).



Метод 7а

Пример лечения

Замена 22/23 сразу после удаления ретинированного клыка. Фиксация в кортикальной пластине дна полости носа.



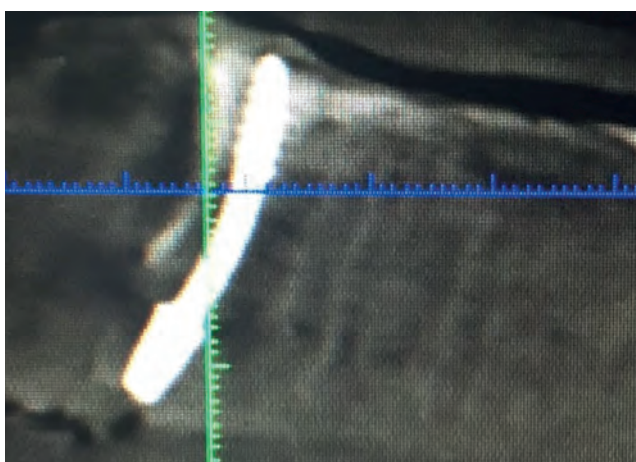
Предоперационная картина

Хотя доступно очень мало кости, этот случай можно лечить, применяя стандартные методы.

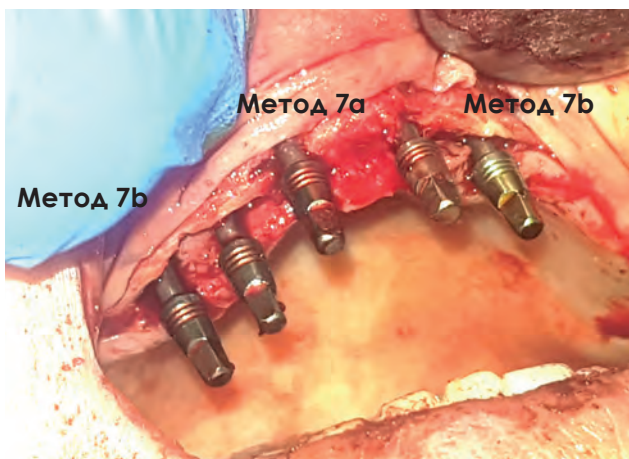
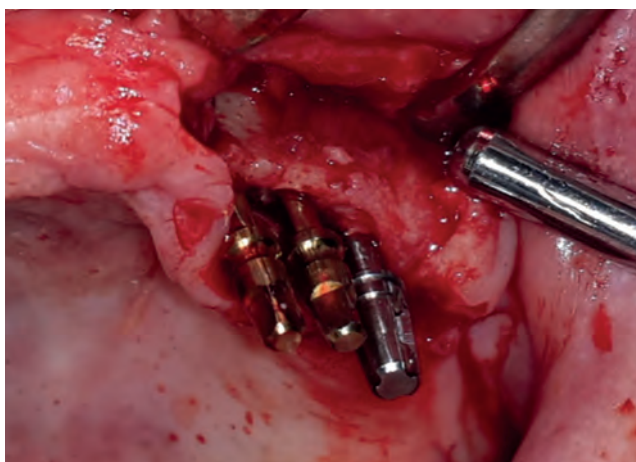


Метод 7b

Установка имплантата непосредственно во 2-ую кортикальную пластину, если не хватает альвеолярной кости (гребень – как острие ножа).

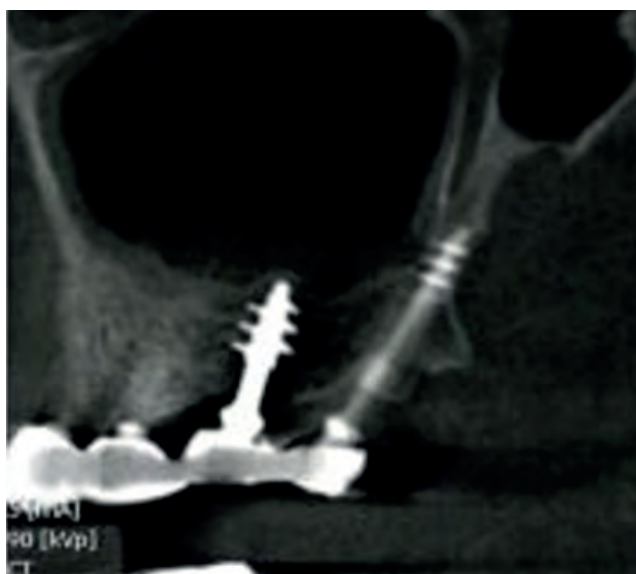


Непосредственная установка имплантата в кортикальную пластинку дна полости носа, при этом имплантат располагается на небной стороне альвеолярного гребня.



Метод 8

Фиксация в кортикальной пластине дна верхнечелюстной пазухи.

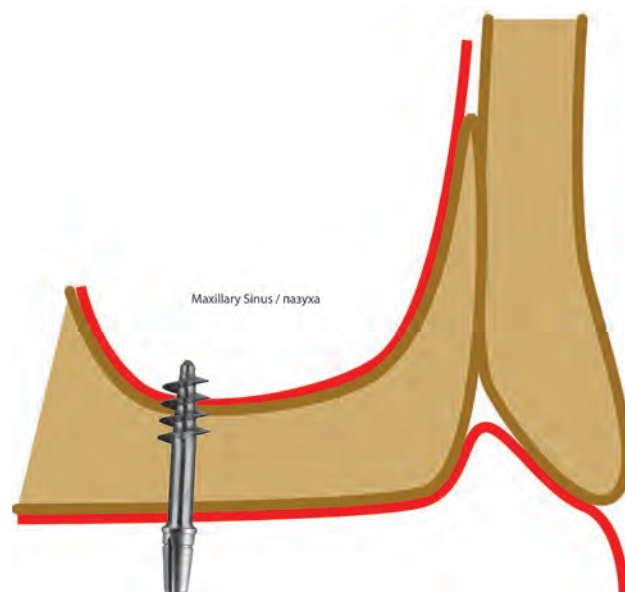


Разнонаправленная фиксация в кортикальной пластине перегородки (септы) внутри верхнечелюстной пазухи.



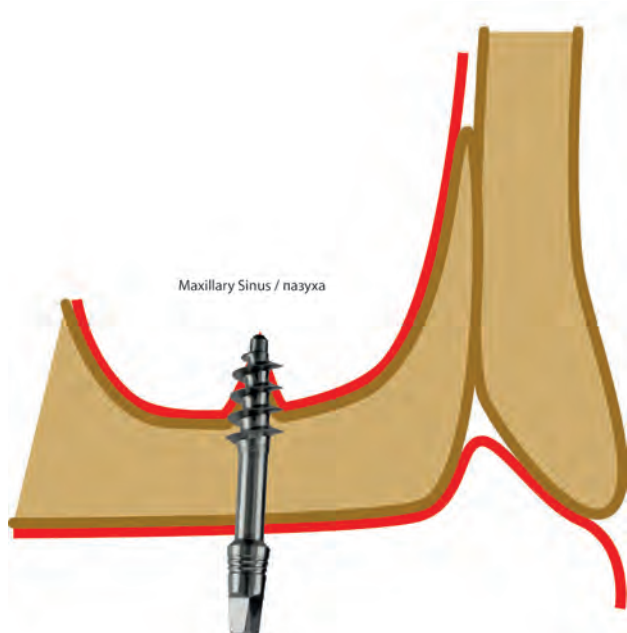
Метод 8a

Фиксация в кортикальной пластине дна верхнечелюстной пазухи.



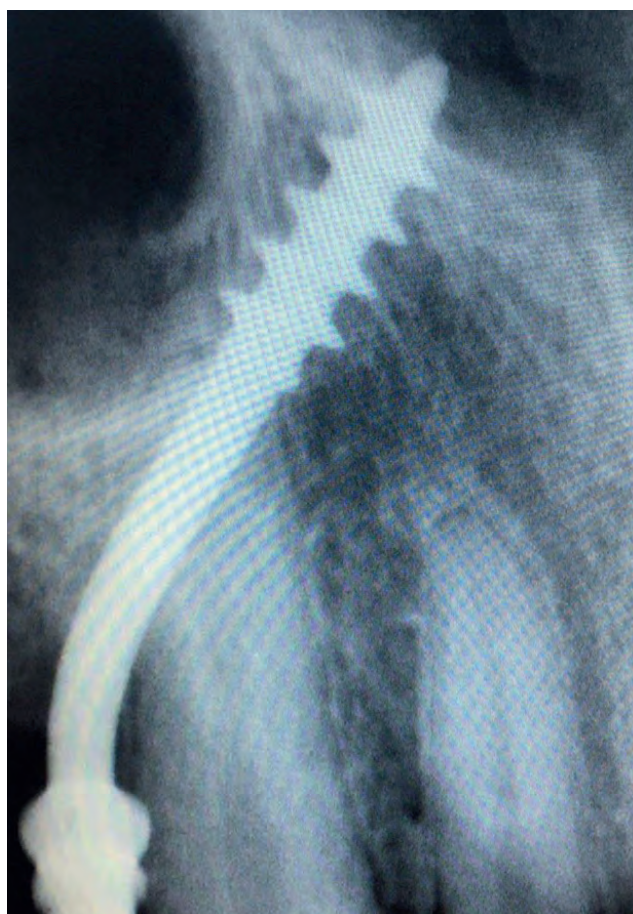
Метод 8b

Разнонаправленная фиксация в кортикальной пластине перегородки внутри верхнечелюстной пазухи.



Метод 9

Закрепление имплантата в кортикальном дне полости носа, начиная с области 14/15, проходя по небной стороне корня клыка.

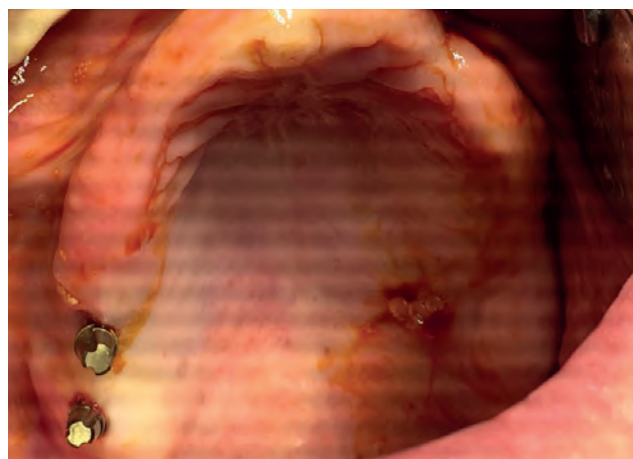


Метод 10

Фиксация дистального имплантата на верхней челюсти в области соприкосновения между дистальным отделом верхней челюсти и клиновидной костью (в области крыловидного отростка).

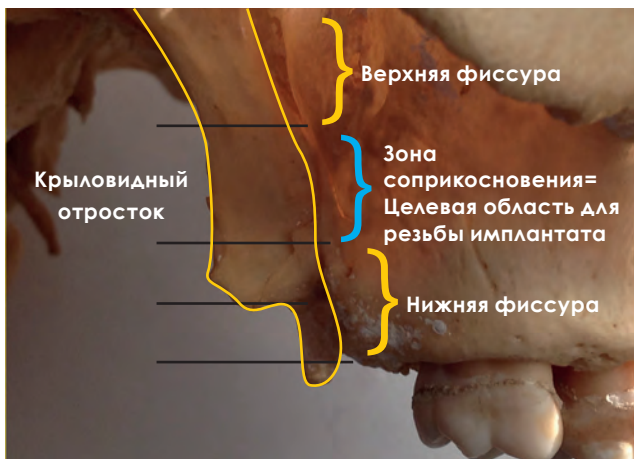
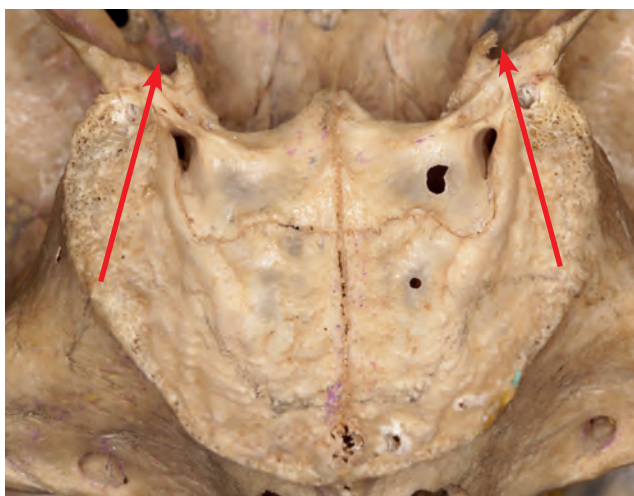


Внутриральный вид после установки и создания параллельности между двумя бугорно-крыловидными имплантатами.



Направление установки бугорно-крыловидных имплантатов в стандартном случае.

Апикальная верхушка имплантата расположена в области прикрепления латеральной крыловидной мышцы.



Метод 11a

Установка имплантата в кость по небной стороне верхнечелюстной пазухи.

Варианты

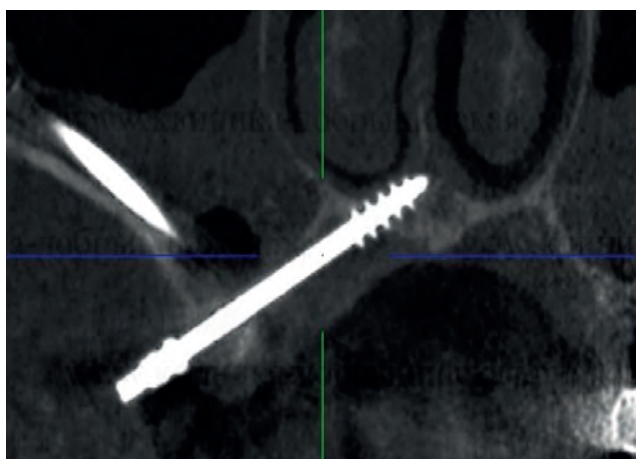
11a Фиксация с и без достижения кортикальной пластины дна полости носа.

11b Фиксация имплантата в срединном небном шве верхней челюсти.

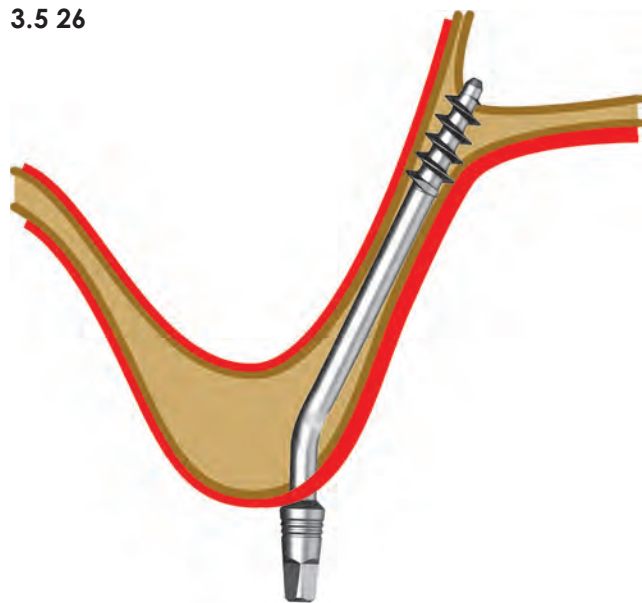


Метод 11b

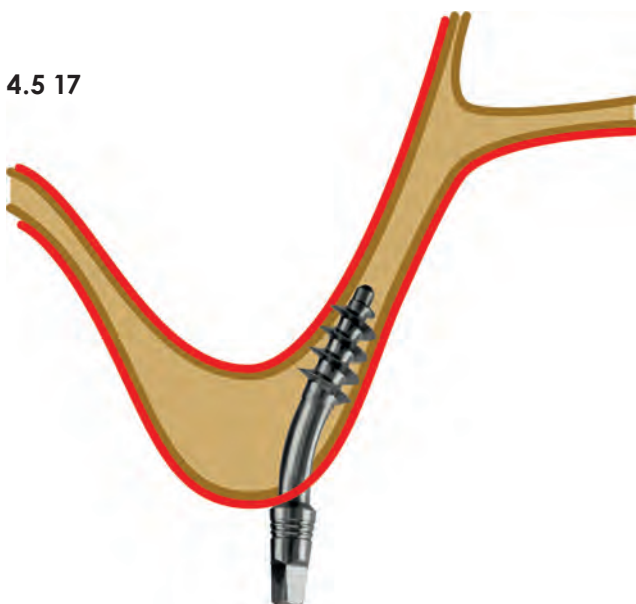
Фиксация имплантата в срединном небном шве верхней челюсти.



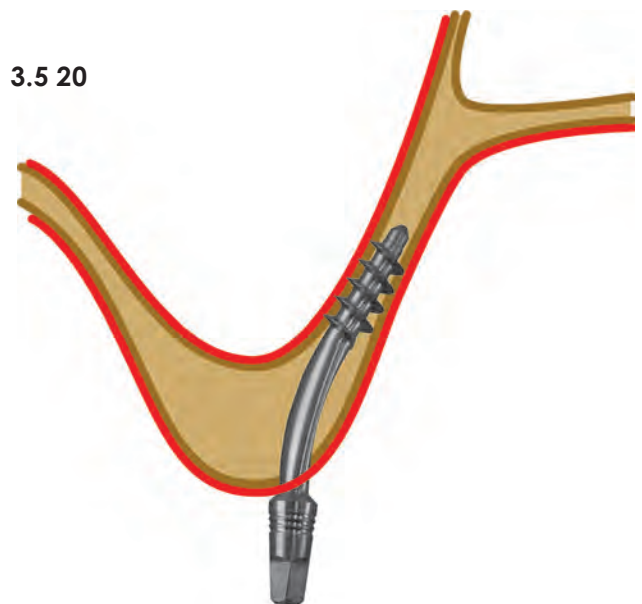
3.5 26



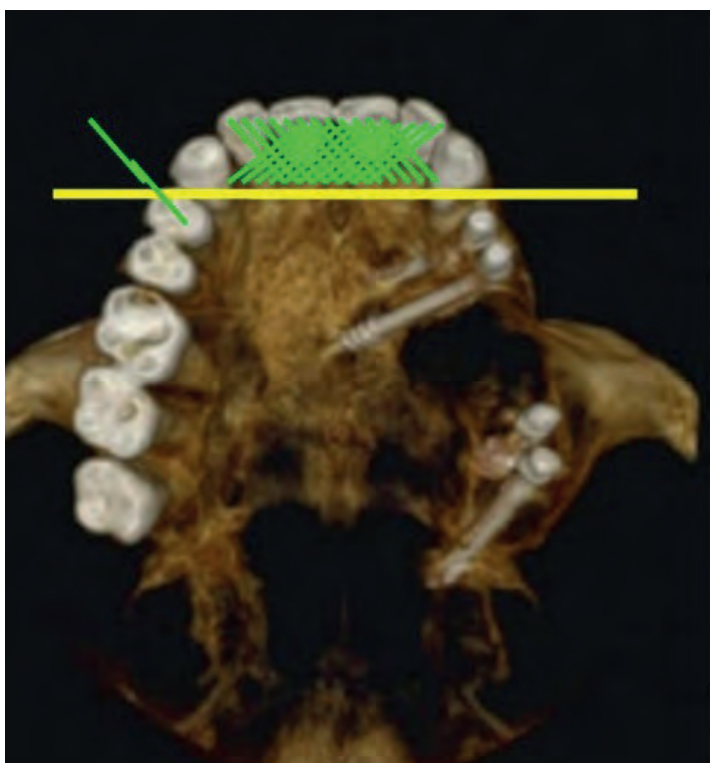
4.5 17



3.5 20



Метод 9 в сравнении с 11b



METHOD
11



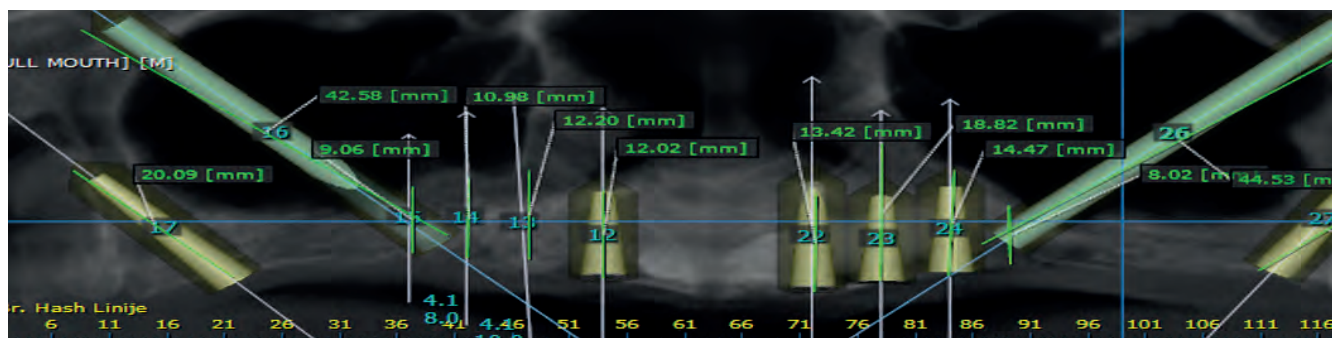
METHOD
9

(Canine Bypass)

Метод 12

Установка имплантата в тело скуловой кости

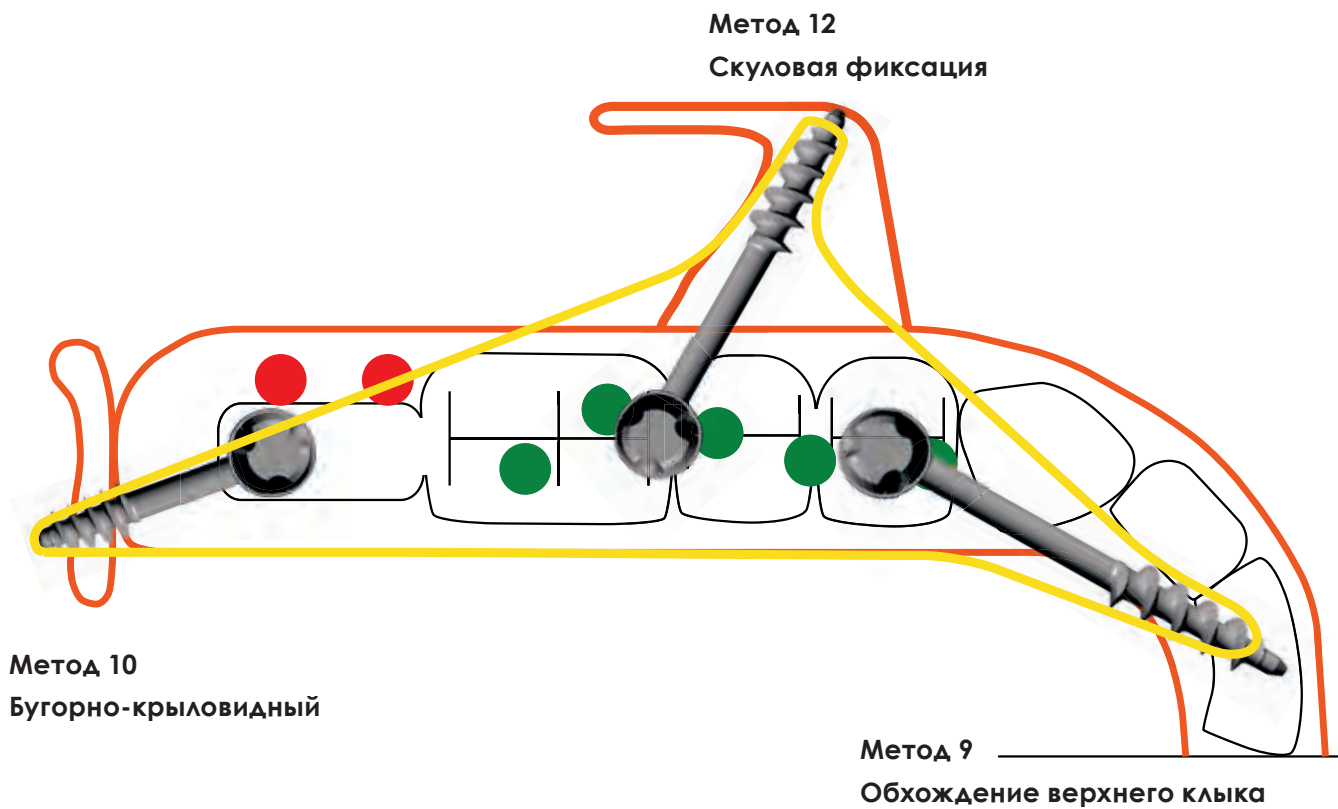
- прямой, внесинусальный
- транссинусальный



Внесинусальный путь скулового имплантата (анатомия в данном случае позволяет этот тип размещения).

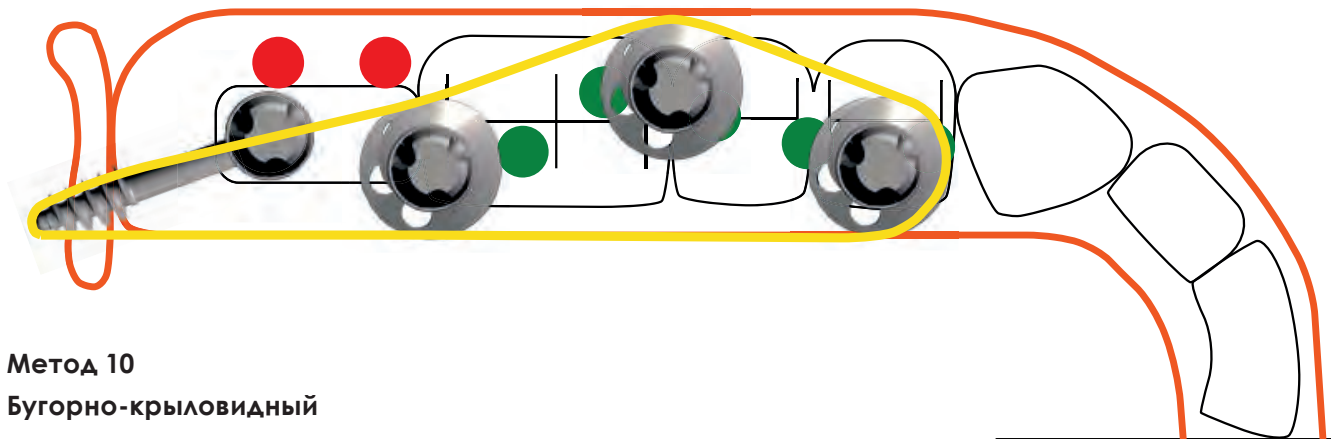


Обсуждение относительно комбинации методов и размера образуемого опорного многоугольника



**Обсуждение относительно
комбинации методов и
размера образуемого
опорного многоугольника**

Метод 6
Вестибулярное / небное закрепление
Или метод 8a/8b
Фиксация в базальной кортикальной
пластине пазухи



Метод 10
Бугорно-крыловидный

Метод 13

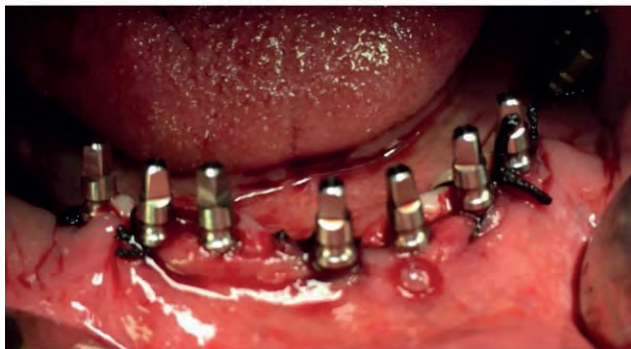
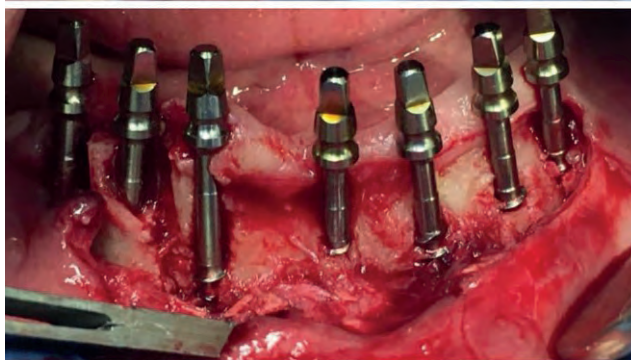
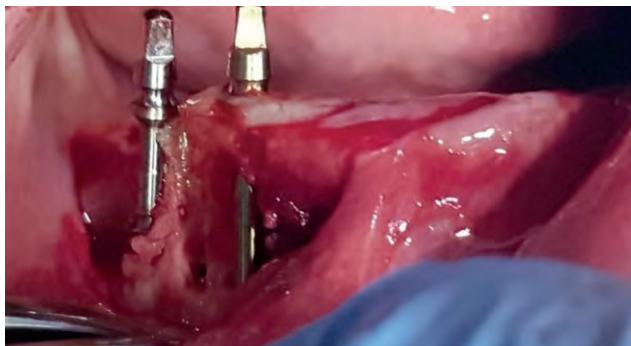
Имплантат устанавливается вестибулярно от острого фронтального гребня

Диаметр: 2.7 и 3.0 mm

Имплантат иногда бывает субпериостальным. Фиксация резьбой.



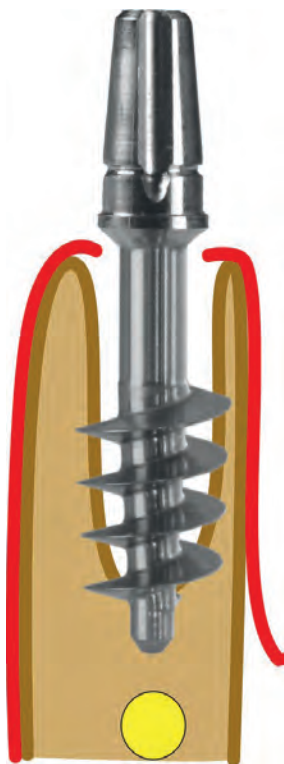
Пример лечения по методу 13.



Метод 14

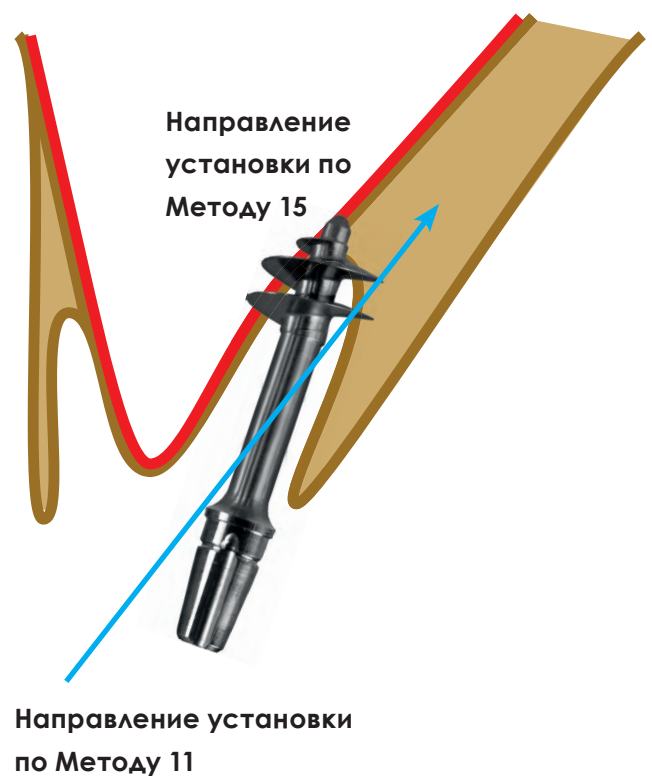
Фиксация имплантата немного большего диаметра в лунку удаленного нижнего или верхнего премоляра. Диаметр должен быть 4,5 или 5,5мм.

Как правило, для размещения двух имплантатов по 5,5 мм в обе лунки нижних или верхних премоляров места недостаточно



Метод 15

Установка одного имплантата диаметром 4,6 - 9 мм в лунку удаленного 1-го или 2-го верхнего моляра. Использование только области небного корня.



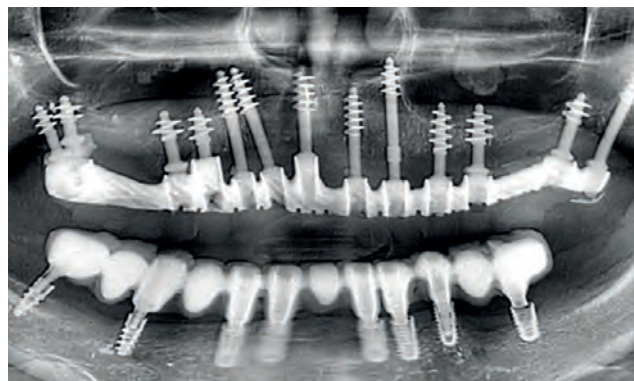
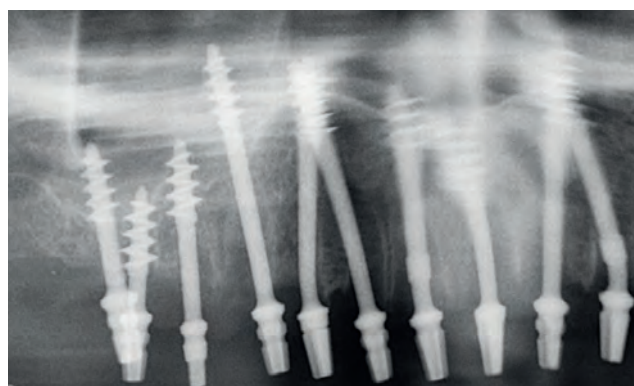
Метод 16a

Установка 2-х имплантатов в две отдельные лунки одного верхнего премоляра. Имплантат с небной стороны направлен в сторону дна полости носа).



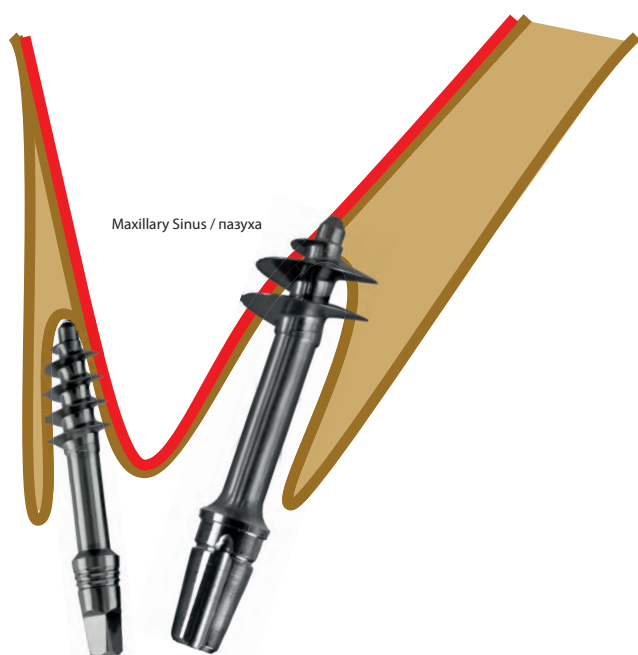
Метод 16b

Использование 2-х различных лунок после удаления верхнего 1-го или 2-го моляра для установки 2-ух кортико-базальных имплантатов.



Метод 16b

Использование 2-ух различных лунок удаленного верхнего 1-го или 2-го моляра для 2-ух кортико-базальных имплантатов.



Funkcionalna i estetska indikacija za tretman dentalnim implantatom i momentalno opterećenje

Prikaz slučaja i razmatranja: Tipični stavovi stomatologa (i njihovih sindikata) o vađenju zuba i sprečavanju ranih, efikasnih i korisnih tretmana dentalnim implantatima u EU

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² Protetski implantolog, Međunarodno udruženje za implantate, Odeljenje za istraživanje i razvoj, Minhen, Nemačka.

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Apstrakt

Tehnologija Strategic Implant[®] olakšava tretman zubnim implantatima skoro bez obzira na raspoloživu kost. Ovo objašnjava njegovu sve veću upotrebu u rešavanju problema sa zubima sredovečnih pacijenata na radikalni način, jednostavnim vađenjem preostalih zuba i postavljanjem implantata. Dok se radikalna promena u paradigmi lečenja implantatima javila u nekim zemljama, u drugim zemljama, stomatolozi se trude da u svom radu ne koriste implantate ili ih koriste samo kao krjanju opciju. Oslobođanje pacijenata od tereta sopstvenih zuba ne zagovaraju stomatološki fakulteti, jer se njihova glavna oblast podučavanja bavi popravkom zuba i konvencionalnim načinima zamene. Ovaj prikaz slučaja predstavlja standardni tretman uz Strategic Implants[®], diskutujući o temi sa gledišta praktičara, univerziteta i drugih strana uključenih u donošenje odluka. Autori zaključuju da se interesi pacijenata ne poštuju u mnogim slučajevima jer uključene strane imaju interes u drugim načinima lečenja.

Ključne reči: redukcija alveolarne kosti, zubni implantat, Strategic Implant[®], momentalno funkcionalno opterećenje, ispravljene vertikalne pozicije prednjih zuba

Uvod

Dentalna implantologija je više od 70 godina posebna specijalistička disciplina u okviru stomatologije.

Njene glavne indikacije su zamena korena jednog, više ili svih zuba implantatima u cilju obezbeđenja sidrišta za fiksne ili uklonjive proteze. Prihvatanje uklonjivih proteza koje podržava tkivo je na veoma niskom nivou u vreme kada se šanse za uspeh tretmana zubnim implantatom i momentalnim funkcionalnim opterećenjem stalno uvećavaju i trenutno su veoma velike. U nekim delovima vilice, kortikalno usidreni implantati obezbeđuju značajno bolje rezultate u odnosu na tradicionalne konstrukcije implantata.ⁱⁱ

Čim delimično bezubi pacijenti budu spremni za ekstrakciju punog luka u obe vilice, implantolog ima mogućnost da odredi položaj novih zuba nezavisno od starih (izvađenih) zuba.ⁱⁱⁱ Pored zahteva za ispravnim ugrizom, uglavnom je estetika presudna za odluke u ovoj situaciji. Iako je preporučljivo u kontekstu konvencionalnih zubnih implantata da se održi dovoljno vertikalne kosti, u kortikobazalnoj implantologiji to je irelevantno sve dok je drugi kortikaliv dostupan za sidrenje.

Današnja dentalna implantologija olakšava značajna poboljšanja u estetici lica. Pacijenti bez zuba koji se odluče za implantološku terapiju imaju više izbora i bolje izbore u odnosu na pozicije njihovih zuba u poređenju sa delimično

bezubim pacijentima. Jedan od razloga je da proteze podržane implantatima obično ne samo da zamenjuju zube, već i deo desni. Na taj način se može napraviti lep prelaz između novih zuba i gingiva se može svrsishodno postignuti u dobro opremljenoj stomatološkoj laboratoriji. Ovde takođe kortikobazalni implantati imaju jasne prednosti u odnosu na konvencionalne dentalne implantate, koji zahtevaju razvoj vidljivog profila i često brojne dodatne intervencije na mekom tkivu.

Ovaj prikaz slučaja ilustruje tretman koji je indikovani i vođen estetskim zahtevima pacijenta.

Materijal i metode

52-godišnji pacijent, hroničan pušač, tražio je generalno poboljšanje njegove intraoralne situacije. Žalio se na poteškoće tokom uzimanja hrane, na neprirodan položaj zuba i znatno izmenjenim prednjim zubima čestim prelomima ispuna (Sl.1) a estetika mu je bila ugrožena prilikom osmehivanja (Sl.2).



Slika 1 Preoperativni intraoralni pogled na odnos vilica klase 2 po Anglu i ozbiljno nepravilan zagriz. Gornji prednji segment je jako izdužen, kao i alveolarna kost. Duboki džepovi sa gnojnim eksudatima su pronađeni u svim kvadrantima.



Slika 2 Preoperativni izgled pacijentovog normalnog osmeha.



Slika 3 Preoperativna panoramska radiografija koja prikazuje bezubne prostore, duboku zahvaćenost parodonta, zube sa paro/endo defektima, resorpcije korena i nepotpune tretmane vađenja živca. Na ovoj slici (tomografija), elongacija segmenta gornje prednje kosti nije vidljiva.

Pacijentu je utvrđen skeletni odnos klase 2 po Anglu i potreba za značajnim prilagođavanjem tvrdih i mekih tkiva obe vilice. Svi zubi zahtevaju uklanjanje. Linija grebena mekog tkiva (linija osmeha) određena je i registrovana fotografijom lica nasmejanog pacijenta. Svi zubi u obe vilice i neophodna količina čvrstih i mekih tkiva su uklonjeni pod lokalnom anestezijom). Moxifloxacina 400 mg (1 tableta preoperativno i 1 tableta/dnevno još 4 dana) i jedna doza fluconazole 150 mg su primenjeni za antibiotsku profilaksu. Tokom postupka, oblast je održavana gotovo sterilnom uz pomoć rastvora Betadina od 5%.

Nakon izravnavanja kosti, umetnuti su implantati i režnjevi zatvoreni uz pomoć svilenih šavova 2-0. Uzeti su otisci implantata i registrovan je ugriz.

Korišćeni su implantati BECES Strategic Implants® (Simpladent, Gommiswald, Švajcarska) različitih dužina i prečnika da bi se bezbedno obuhvatio drugi kortikal.

Mostovi su proizvedeni tehnikom obrnutog dizajna. Ubrzo nakon intervencije, pokušano je postavljanje. Pacijentu je pružena prilika da testira vertikalnu dimenziju i fonetsku i (u nekoj meri) žvačnu sposobnost buduće restauracije i oceni estetski izgled mostova, što je i odobrio.

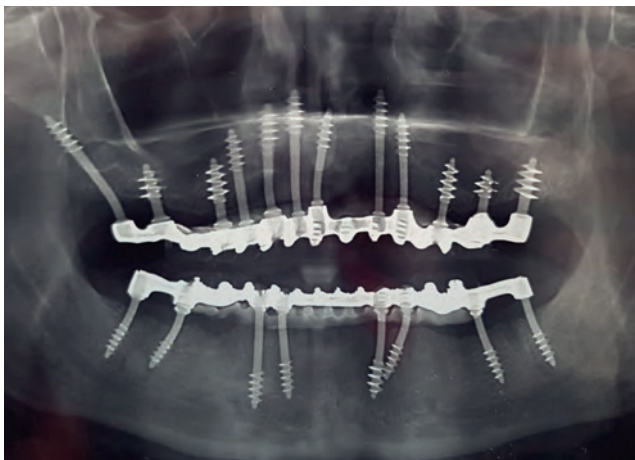
Digitalni radni proces je korišćen za izradu metalnog okvira za probu sledećeg dana. Zubi i metalni okvir su povezani odmah nakon toga a ružičasta smola je dodata da bi se prilagodile gingivalne praznine i obezbedio estetski izgled. Mostovi su kontrolisani intraoralno da bi se postigla pravilna okluzija i žvakanje, te prethodno polimerizovani standardnim uređajima za svetlosnu polimerizaciju, a zatim temeljno polirani. Trećeg postoperativnog dana, mostovi su trajno cementirani Fuji Plus (GC) trajnim cementom.

Rezultati

Odmah nakon što su mostovi cementirani, pacijentu je dozvoljeno da jede normalno. Prva kontrola okluzije i žvakanja obavljena je narednog dana. Pravila za dizajn okluzalnih kontakata i žvačnih površina su opisani u Ihde i Ihde,v čija su pravila pažljivo praćena.



Slika 4 Intraoralna situacija odmah nakon trajne cementacije dva mosta.



Slika 5 Postoperativna panoramska radiografija koja prikazuje tipičnu distribuciju Strategic Implants® u obe vilice. Svi implantati su postavljeni u skladu sa IF metodama koje je definisalo Međunarodno udruženje za implantate.

Šablon žvakanja pacijenta se promenio odmah nakon umetanja restauracija sa strogo prednjeg (Klasa II po Anglu) na bilateralni. Nije bilo potrebe za obukom da bi se postigao ovaj rezul-

tat. Čim je prednja blokada uzrokovana previše izbačenim zubima otklonjena, stvorene su adekvatne bilateralne okluzalne površine i žvačne padine i postignuta je prihvatljiva vertikalna dimenzija, što je normalno kod ljudi. Postoje engrami za oba šablona žvakanja od rane mladosti, što omogućava pacijentima da odmah pređu na (normalnu) obostranu funkciju.

Diskusija

Ishod koji je ovde prikazan omogućen je tehnologijom Strategic Implant®. Nijedan drugi sistem ili tehnologija implantata ne bi omogućila implantate u redukovanoj kosti tamo gde je prvi kortikal potpuno uklonjen. Ova tehnologija omogućava rekonstrukciju u jednom koraku u roku od 2 do 3 dana, zavisno od napretka rada u stomatološkoj laboratoriji. Mogućnost završetka tretmana za nekoliko dana dodatno povećava stopu prihvatanja ovog tretmana kod pacijenata i u potpunosti opravdava "dentalni turizam" u koji se određeni pacijenti upuštaju.

Nedavno objavljena studija o tehnologiji pokazala je da su ovi implantati praktično bez rizika od periimplantitisa. Dobrinin i ostali pokazali su u velikoj retrospektivnoj studiji 4095 implantata da nije uočen perimimplantitis ni oko jednog implantata tokom period posmatranja od 19 ± 8.3 meseci. To olakšava donošenje odluke o umetanju velikog broja implantata.

Ostaje pitanje zašto je pacijent sa dovoljno sredstava za implantate, koji živi u centralnom

delu Evrope (Francuska) u tako katastrofalnom oralnom zdravstvenom stanju dok je okružen sa 345.000 licenciranih zubara u EU.

Postoji nekoliko odgovora na ovo pitanje.

1. Tradicionalna stomatologija ne obezbeđuje/ nudi prihvatljiv tretman za pacijente kod kojih je uništenje zuba napredovalo do tačke prikazane na slici 3. Šta god da bi tradicionalna stomatologija pokušala, ne bi rešila niti estetske probleme niti probleme nedovoljne žvačne funkcije. Pacijenti su (nažalost) obučeni od ranog detinjstva da posete zubara kada se pojave problemi u usnoj duplji. U stvari, pacijenti sa tako katastrofalnim zubima danas ne mogu očekivati adekvatnu pomoć u zubarskoj ordinaciji.
2. Tradicionalna stomatologija ne daje nadu ni na kratko za obostranu ravnomernu funkciju žvakanja na fiksnim zubima ovakvom pacijentu.
3. Konvencionalna dentalna implantologija bi zahtevala ekstrakciju, a zatim periode lečenja, a zatim sledi postavljanje implantata. Sveukupni tretman kroz koji pacijent prolazi bez fiksnih zuba traje najmanje 6 meseci.
4. Iz nepoznatih razloga, prosečna cena za konvencionalni tretman zubnim implantatima obe vilice je ogromna. Pacijenti plaćaju više za terapiju zubnim implantatima nego za redovnu stomatologiju. (Ovo nije opravdano zato što je vreme provedeno na stolici za rešenje implantata kraće nego za restauraciju podržanu zubima za ovog pacijenta, i

potražnja za preciznošću u stomatološkoj laboratoriji je manje zahtevna nego kod restauracija podržanih zubima.)

Kako pokazuje ovaj primer, Strategic Implant® tehnologija rezultirala je prihvatljivom estetikom i fiksnim zubima za samo nekoliko dana. Dok je ovaj pacijent odabrao tretman sa Strategic Implant® odmah, razlozi 1 do 4 gore (a možda i dodatni razlozi) su ga sprečavali da izabere konvencionalni tretman implantatima dugi niz godina.

Pacijent je odavno shvatio da njegov glavni estetski problem nikada neće biti rešen dok i osim ako se (barem sa njegove tačke gledišta) gornji prednji zubi (ili poželjno svi maksilarni zubi) ne uklone. Ali nijedan stomatolog nije bio spreman da to uradi. Svaki stomatolog kog je konsultovao samo je pričao o "spasavanju" i popravljanju zuba. To nije imalo smisla za pacijenta; odustao je od posete zubarima, koji nisu razumeli njegove potrebe i njegove probleme. Pacijent je zaključio da nijedan od 345.000 stomatologa u EU ne bi bio voljan ili sposoban da mu pomogne. Stoga je otišao u inostranstvo da konsultuje visoko specijalizovane pružaoce tretmana, koji ne rade u okviru "sistema".

Zapravo je lako spekulirati zašto ti stomatolozi nisu pružili nikakvu pomoć. Evo nekih od razloga:

- Stomatolozi su obučeni da popravljaju zube. To je njihov primarni posao. Kada njihova klijentela više nema zuba, situacija sa njihovim prihodima će se pogoršati.

- Ako je preostalo samo mali broj zuba, oni nastavljaju sa izradom više ili manje komplikovanih proteza, koje bi trebalo da se delimično podupiru zubima što je duže moguće (prema mišljenju tradicionalnog stomatologa).
- Svako uklanjanje zuba potencijalno može pojesti buduće prihode zubara. Do najgore situacije dolazi kada se isporuče dve potpune proteze, jer te dve proteze će trajati praktično zauvek i koštati skoro ništa.
- Pacijentima se tokom celog života govori da je važno spasiti svaki zub što je duže moguće, kako bi se "omogućila podrška" budućoj protezi.
- Pacijenti u toj fazi svog života retko shvataju da nikada neće biti voljni da nose protezu koja se može ukloniti, niti shvataju da njihovi predantno "spaseni" zubi uopšte ne pomažu čim dođe do određenog nivoa raspada njihovih zuba (a to se događa ranije nego što se može zamisliti). Samo fiksni zubi (na prirodnim zubima ili na implantatima) pružaju otpornost na žvačne sile.
- Očigledno, velika većina današnjih stomatologa u mnogim zemljama radi po zastarelim (sa tehničke tačke gledišta) parametrima, ciljevima i uverenjima. A kao rezultat toga, veliki broj pacijenata u Evropskoj uniji ostaje nelečen.
- Treba takođe napomenuti da je naš tretman, iako je mnogo pomogao pacijentu, dovelo do umanjenja prihoda nepoznatog broja stomatologa. Sve u svemu, stomatolozi su izgubili mnogo više novca nego što smo naplatili

pacijentu. Ako se to dogodi, može zapravo biti štetno po širenje date tehnologije, posebno u visoko regulisanim zdravstvenim sistemima ili u zdravstvenim sistemima gde se tržište (konvencionalnih) dentalnih implantata drži u zatočeništvu od strane nekoliko hirurga.

- Stomatolozi u većini zemalja preferiraju umetanje složenih dizajna na zubima (krunice na zubima, konusne krunice, teleskopi kombinovani sa kompleksnim protezama) jer su finansijske nagrade značajne i jer ovi projekti mogu biti prodati delu populacije koji sebi to može priuštiti.
- Hirurški orijentisani praktičari, tačnije maksilofacijalni hirurzi, „po prirodi“ nisu zainteresovani za jednostavna stomatološko-implantološka rešenja jer stvaraju najmanje 30% prihoda vezanih za implantate dodavanjem "augmentacije kosti" u plan tretmana. U stvari, ova interesna grupa gubi najveći deo svog posla sa pojavom tehnologije Strategic Implant®: transplantacije košanog bloka ranije su bile njihov domen, a tipično su i izvršavali terapija susednih implantata. Tehnologija Strategic Implant® stavlja implantologiju kao takvu u ruke posebno obučenog stomatologa-implantologa.
- Treba takođe pomenuti da se praktična i efikasna dentalna implantologija trenutno ne predaje ni na jednom univerzitetu u EU.

Kao što je prikazano na slikama 1 i 2, previše izbačeni maksilarni zubi i elongirani segment gornje prednje kosti uzrokovali su velike estetske probleme. Bez uklanjanja i kosti i gornjih pred-

jih zuba, prihvatljiva estetika ne bi bila ostvari-
va. Nema smisla da se "spasavaju" zubi koji su
previše izbačeni ili čak i na pogrešnim pozici-
jama ako su ti zubi površno "zdravi".

Previše izbačeni prednji zubi ne samo da bloki-
raju lateralne pokrete mandibule već i predis-
poniraju pacijenta za prednji šablon žvakanja -
neprirodan i štetan za oralno zdravlje.

Smatramo da je mogućnost neograničenog
bilateralnog žvakanja preduslov za funkcio-
nalno zdravlje žvačnog sistema. Ako se taj cilj
ne dostigne, nijedna protetska rehabilitacija,
bilo na zubima ili na implantima, ne može biti
dugoročno uspešna.

Ovaj tretman ilustruje jednostavan i efikasan
način pomaganja pacijentima da im se ukloni
obolela denticija i da se odmah odluče za fiksne
zube na implantatima. Mnogi pacijenti starosti
40 do 60 godina imaju zube koji se jednostavno
ne mogu restaurirati stomatolozi - ovim pacijen-
tima je potreban iskusan implantolog.

Tokom poslednje dve decenije, razvile su se dve
različite tehnologije u pogledu dentalnih implan-
tata:

- **Konvencionalna dentalna implantologija**,
koju promoviše više univerziteta.
- **Kortikobazalna implantologija** (koncept Stra-
tegic Implant®), tehnologija koja je mnogo
efikasnija od bilo kojeg drugog koncepta u
okviru dentalne implantologije.

Tradicionalna stomatološka implantologija nije
imala sreće kada je nekoliko nepraktičnih dogmi
uvedeno tokom poslednje tri decenije, kao što
je „postavljanje implantata u protetski željenu
poziciju” i “praćenje koncepta vidljivog profila”.
Slično tome, verovanje da su određene površine
implantata bolje od drugih i čitav koncept os-
eointegracije su - sa stanovišta onoga što dan-
as znamo – više prokletstvo nego pomoć. Pret-
postavka da određena površina implantata radi
bolje nego polirani titanijum nije opravdana
naukom. To je jednostavno “priča” koju su sas-
stavili veliki proizvođači implantata. Naročito
univerziteti nastavljaju da budu verni pratioci
“oseointegracije”, i oni to čine zato što uticajni
ljudi tamo dobijaju isplate od proizvođača. Čak
i pojedinačni hirurzi često dobijaju takve isplate
od proizvođača implantata (ili lokalnih distrib-
utera) - novac dolazi sa svakim implantom koji
on/ona postavi. I to je upravo razlog zašto hirurg
postavlja dati implantat umesto boljeg.

Sve te ideje i razvoji odvedi su celu profesiju u
pogrešnom smeru. Konvencionalni dentalni im-
plantati sa svim svojim manama opravdali su
augmentaciju kosti, čineći da pacijenti pate
više zbog dugotrajnih protokola lečenja, često
provodeći godine u lečenju.

Sve ovo je danas nepotrebno ako se koristi
tehnologija Strategic Implant®. Ona ima za cilj
osesofiksaciju delova implantata u kortikalima
koji prenose opterećenje, bez čekanja na “os-
eointegraciju”. Koncept podseća na tehnologije

koje se koriste u traumatologiji i ortopedskoj hirurgiji više od 50 godina. U određenim situacijama, momentalno opterećenje je i dalje moguće i uspešno čak i za pojedinačne implantate ili zamene jednog zuba (sa više od jednim implantatom).

Umesto stvaranja "vidljivog profila", tanki polirani vertikalni delovi implantata (2 mm u prečniku) postavljeni su lingvalno i palatalno, pružajući veliku slobodu stomatološkom tehničaru da stvori visoko estetski rezultat (slike 4 i 5). Prelaz između prirodne gingive i kompozitne (ili akrilne, ili čak keramičke) zamene se postavlja striktno u nevidljivoj zoni i skriven je usnama. Zbog toga nije potreban "vidljiv profil" i pozicije implantata nisu diktirane pozicijama kruna.

Zaključci

1. Prihvatljiv estetski rezultat moguć je čak i u estetski teškim situacijama ako su svi zubi u obe vilice uklonjeni i meka tkiva i linija kosti se izjednačavaju s namerom da se pomeri prelazna zona na gore u gornju vilicu ili na dole u donju vilicu.
2. Tehnologija Strategic Implant® ne zavisi od dostupnosti vertikalne kosti - sve što joj je potrebno je stabilni drugi ili treći kortikal za usidrenje implantata.
3. Klinički vidljivi zubi su postavljeni nezavisno od kosti i mesta sidrenje (strateško pozicioniranje implantata). Ovo olakšava kreiranje visoko estetskog protetskog rezultata.
4. Ovakav estetski rezultat se mnogo lakše i predvidljivije postiže izravnavanjem alveolarne kosti i uklanjanjem suvišnog mekog tkiva nego augmentacijom kosti i mekog tkiva u estetskoj zoni.
5. Primarni cilj svakog tretmana zubnim implantatima je jednaka i istovremena okluzija obe strane, kao i bilateralna i neograničena žvačna funkcija. Bilo koji zub i bilo koji segmenti kosti koji bi se suprotstavili ovom cilju (i sprečili održavanje istog) moraju biti uklonjeni jer bi onemogućili da tretman ispuni očekivanja pacijenta.

6. Kompleksni tretmani koji kombinuju fiksne restaurirane zube i uklonjive proteze moraju se apsolutno izbegavati. Plan lečenja za ljude treba uvek težiti stvaranju i održavanju fiksnih zuba tokom čitavog života. Ovo je takođe jeftinije od izrade kompleksnih restauracija.
7. U mnogim zemljama razni ilegalni finansijski dogovori između proizvođača implantata i njihovih distributera ometaju napredak u dentalnoj implantologiji i sprečavaju da profesija ide u pravcu koji bi korisnik želeo da vidi.
8. Čini se da u oblasti dentalne implantologije nijedna od uključenih strana nije spremna da poštuje interese pacijenata. Osim ako se to profesionalni nemar ne ispravi, nezdravi razvoj društva u celini biće neizbežan rezultat.

Literatura

1. Dobrinin O., Lazarov A., Konstantinovic V., et al. Immediate-functional loading concept with one-piece implants in the mandible and maxilla – A multi-center retrospective clinical study; J. Evolution Med. Dent. Sci./ eISSN- 2278-4802, pISSN- 2278-4748/ Vol. 8/ Issue 05/ Feb. 04, 2019
2. Ng P, Hu X, Wan S, Mo H, Deng F. Clinical outcomes of bicortical engagement implants in atrophic posterior maxillae: a retrospective study with 1 to 5 years follow-up.
3. Ihde S., Sipic O.:Dental implant treatment in immediate functional loading.Case report & considerations regarding the extended treatment possibilities of the Strategic Implant®and regarding indications for comprehensive dental implant treatment. Stomatologist 2/2019, 74–78
4. Ihde S., Ihde A., Lysenko V., Konstantinovic V, Palka L. New systematic terminology of cortical boneareals for osseo-fixated Implants in strategic oral implantology.J.J.Anatomy, 2016, 1(2), 007
5. Ihde S. Ihde A: Cookbook Mastication, 3rd edition; International Implant Foundation Publishing,2019; ISBN 987-3-945889-12-1
6. International Implant Foundation:Consensus on 16 methods for the placement of basal implants: <http://implantfoundation.org/en/consensus-16-approved-methods-2018-menu-en>
7. Ihde S. Principles of BOI; 2004; Springer Verlag, Heidelberg, ISBN 3-540-21665-0
8. Olson M. Rise and Decline of Nations, Yale University Press 1982