

Eric Van Dooren | Florin Cofar
Victor Clavijo | Gustavo Giordani | Venceslav Stankov



Interdisciplinary Esthetic Dentistry

_complications

**Retreatments
and maintenance**

The
big
Picture

Volume 3

Interactive videos

Augmented reality in this book!

This book contains augmented reality videos available free of charge from your smartphone or tablet.

Easy to use, reliable, instantly accessible, and available offline, you can find selected multimedia content created by the authors to enrich your reading experience.



Download

the app “Quintessence Van Dooren-Cofar” from the Apple Store (iOS) or Google Play (Android).

Select a chapter

among those with augmented reality content.

Locate

clinical photographs with the augmented reality symbol.

Roll over

these photos on your smartphone or tablet using the app to play the videos.



Final prosthetic rehabilitation

This one-step protocol, the use of a dental...
is an essential element. It will allow
perfect isolation of the surgical field.
The prosthetic elements can then be
assembled in complete safety, protected
from blood and saliva. The surgical field
before guarantees the durability

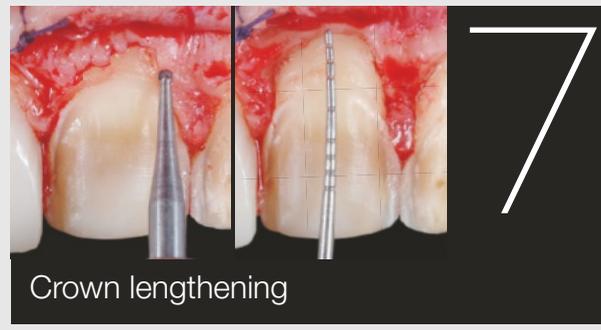
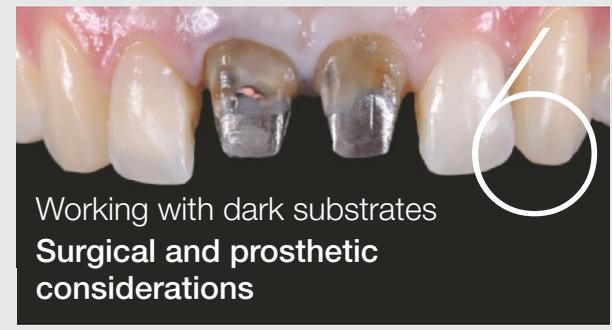
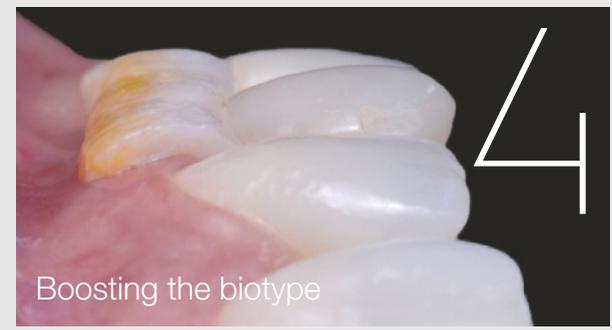


copyright by
not for publication
Quintessen

_basics Planning and execution – Volume 1

Contents

Interactive videos.....IV
Suggested reading..... 1 239



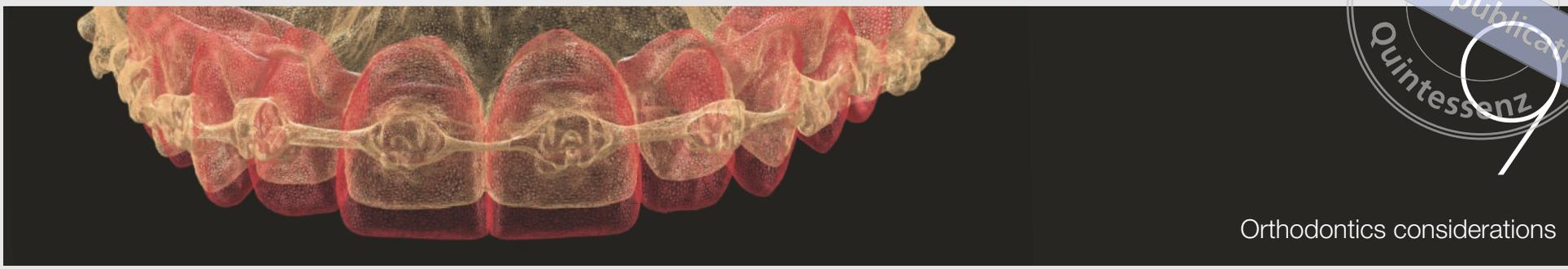
Interactive videos

This book contains augmented reality

videos available for free from your smartphone or tablet.

copyright by
not for publication
Quintessenz

_synergies Optimising complex cases – Volume 2



Orthodontics considerations

_complications Retreatments and maintenance – Volume 3

10

Delaying implant..... 857

11

The central-lateral incisor dilemma 893

12

Full arch 967

13

Retreatment 1 1015

14

Retreatment 2 1069

15

Connective tissue hyperplasia 1131

16

Vertical maxillary growth in young adults 1151

17

Vertical maxillary growth and implant removal 1171

18

The pink gingival restoration..... 1207



Step one

Observe

Backgrounds

- 22-year-old male
- Dental trauma 10 years ago with avulsion of the left central incisor

Complaint

- Unesthetic appearance of the left central incisor

Face

- Low smile line
- Infra-position of his left central incisor

Smile

Cases of ankylosis have many characteristics in common with the long-term outcome in cases of implant placement in young adults with craniofacial growth:

- shorter crown (incisal edge);
- higher gingival margins than the adjacent teeth;
- thinner soft tissue around the ankylosed tooth;
- buccal position of the ankylosed tooth compared to the adjacent teeth;
- open contact points (more in the posterior teeth).

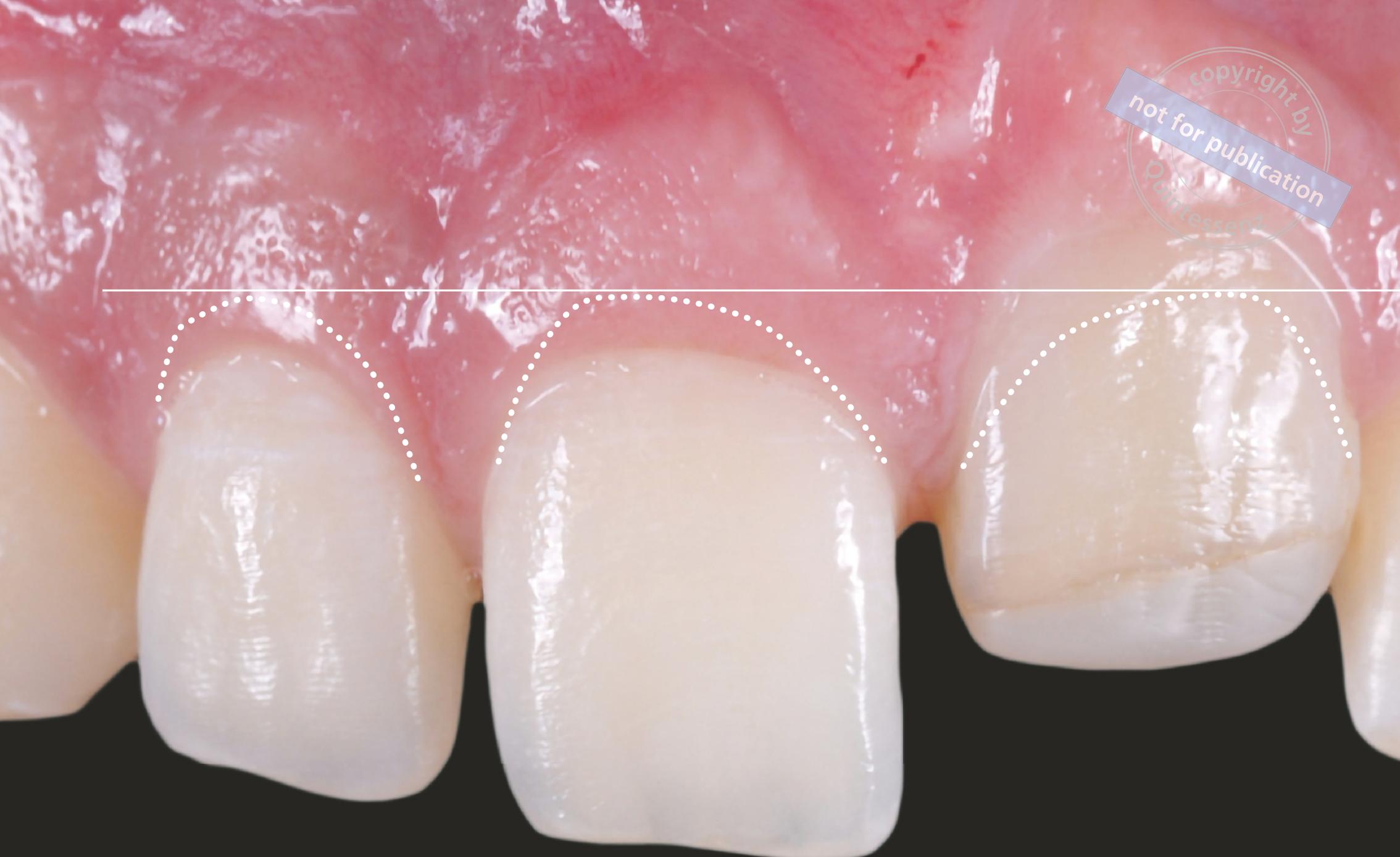
Radiologic findings

- Even if there is a severely resorbed and short root, the tooth is still very stable.

“ Due to the process of continuous vertical maxillary growth, teeth and bone continue to grow whereas an ankylosed tooth or implant stays in place together with the surrounding dentogingival complex. ”



copyright by
not for publication
Quintessen[®]





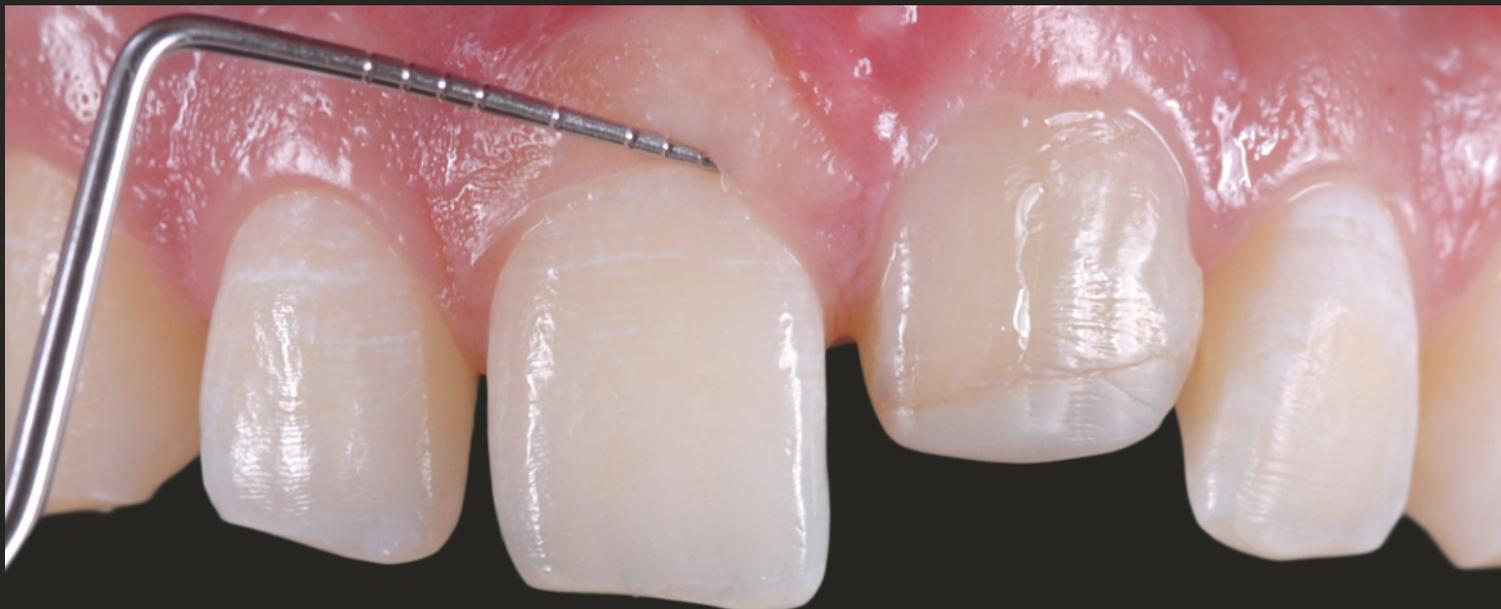
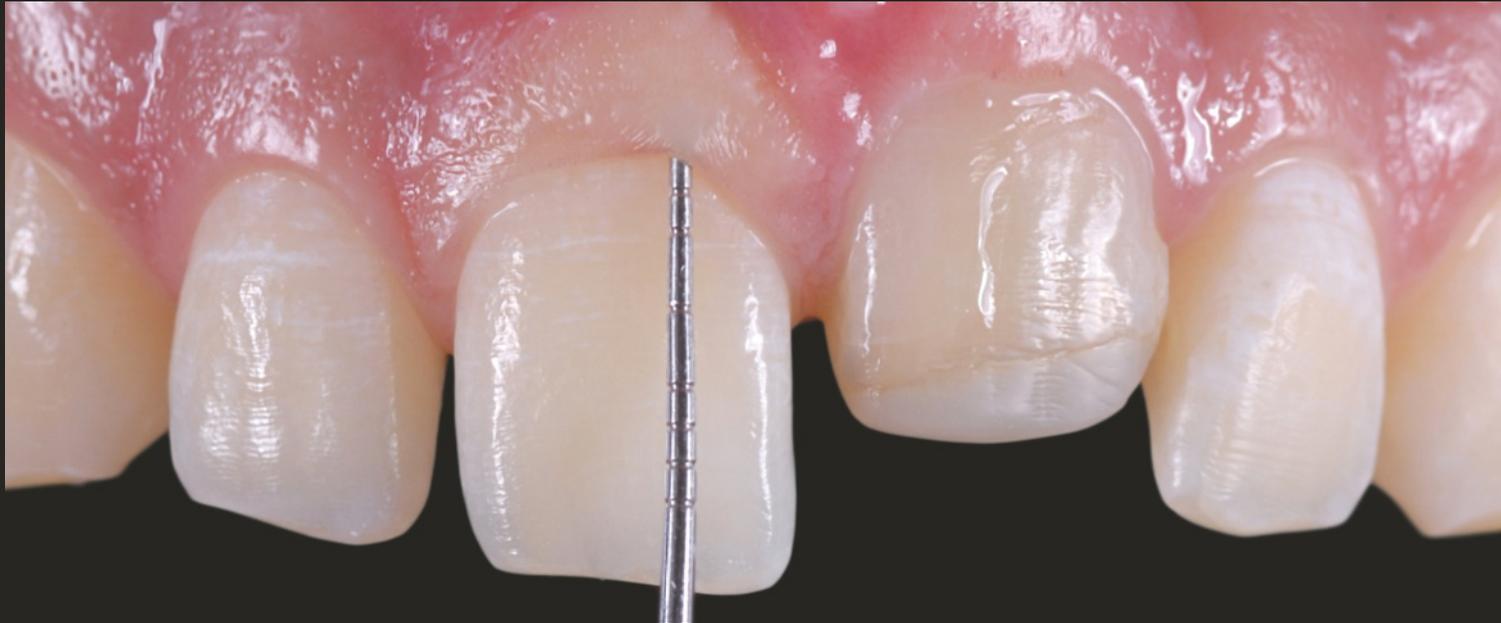
Step one

Start with the end result in mind

In cases with vertical gingival defects, the most difficult part is to address the vertical component during the grafting procedure, in this case the grafting of the left central incisor, to create harmony in the gingival levels. In general, the rule is that we can graft and gain vertically as much as half of the height of the shortest papilla, in this case, the distal papilla of the left central incisor.

If we think in terms of the blood supply for the connective tissue graft, we need to be realistic in terms of our expectations. This is exactly why, when having a vertical defect, we always first evaluate the neighboring teeth. In this case, crown lengthening of the right central and right lateral incisor would allow us to compensate for the amount of connective tissue grafting that is needed.

Periodontal evaluation



“ Precise probing and periodontal evaluation of the cemento-enamel junction and bone will give the clinician an idea of how much they can crown-lengthen the teeth and if flapless surgery is an option. ”

copyright by
not for publication
Quintessence



copyright by
not for publication
Quintessenz



Crown lengthening

Connective tissue graft

Step two Building the project

As the left central incisor is labially positioned, simulation of the correct tooth form and position is only possible after reduction of the tooth on the plaster model. The tooth and gingival volume are reduced because of this buccal position. It is important to simulate on the model the desired gingival augmentation in pink wax for two reasons:

- to verify that the planned augmentation is realistic and technically feasible;
- to reduce the existing tooth and make a wax-up of a tooth with a correct form, position, and especially a correct emergence profile of 10–15 degrees. Visualization of the emergence angle is only possible with the correct gingival profile in place.



“ The evaluation of this emergence profile is extremely important because the emergence profile of the future tooth will guide the healing of the graft. ”



copyright by
not for publication
Quintessence



“ The three-dimensional (3D) root configuration can easily be modified to fit the needs of the surgery and the optimal prosthetic configuration. ”

Step three Preparations

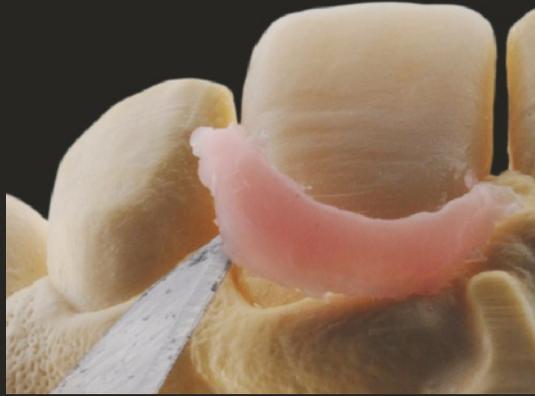
After crown lengthening of the right central and lateral incisors, a symmetrical preparation was performed on the left central incisor. Care was taken to have a correct zenith position and to open space between the left lateral central and lateral incisors. The opening of the distal space allows the coronal migration of the distal papilla. The buccal surface was reduced from the new preparation outline into the sulcus to

compensate for the buccal version of the tooth and to reduce the pressure on the marginal gingiva in preparation for surgery. Because of the reduced retention, but also because of the small amount of enamel remaining after removal of the old composite, a slight extra incisal anchorage was performed. Retraction cords were only needed for an accurate impression in the papillae areas.



Laboratory work





“ Special attention is paid to the emergence profile of the tooth. The removable pink wax-up allows us to visualize the root coverage procedure on the model and facilitates the evaluation of the wax-up. ”



copyright by
not for publication
Quintessenz

Laboratory work

It is always possible to slightly reconfigure the root profiles on the working model and implement these when trying in the second bake of the crown before the final glazing. In this specific case, for example, insufficient space was provided for the papilla at the time

of preparation and the impression between the roots of the lateral and central incisors. As the position of the ankylosed tooth was distalized compared to the ideal wax-up, the technician simulated the ideal root recontouring on the model, removing the volume of the e.max

coping and plaster die exactly where the space was needed. Because the solid model does not allow us to copy the recontouring done on the individual die, the e.max crown will have a step between the coping and the original preparation.





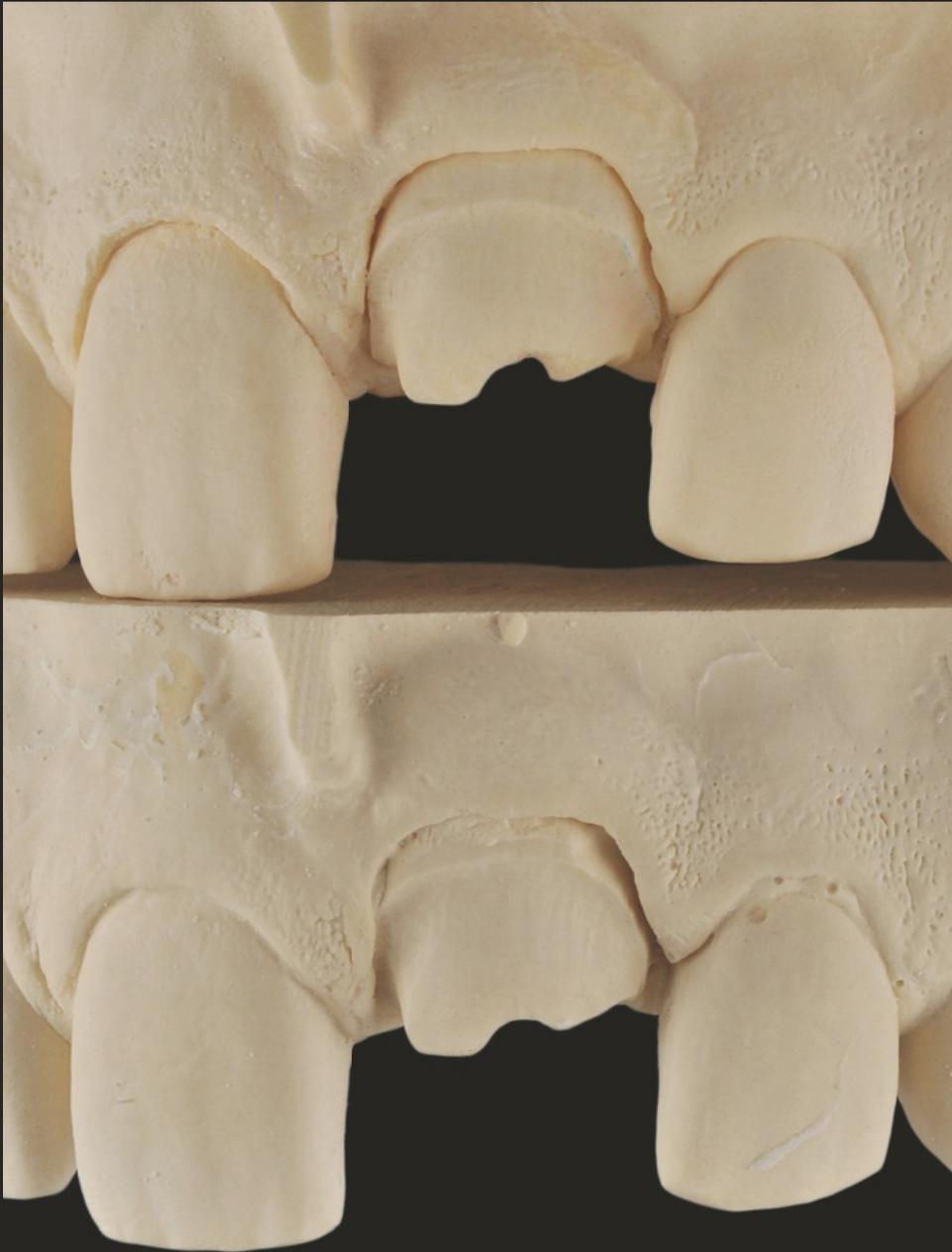
“ Because the solid model does not allow us to copy the recontouring done on the individual die, the e.max crown will have a step between the coping and the original preparation. ”



copyright ©
not for publication
Quintessenz



copyright by
not for publication
Quintessenz





“ While securing the non-glazed crown in position, the interdental root profile is reshaped with a diamond burr. Space is created for gaining adequate papillary volume and height. In this specific case and for educational purposes, a new model was made after root reshaping. It clearly shows the difference after the interdental root recontouring procedure. ”

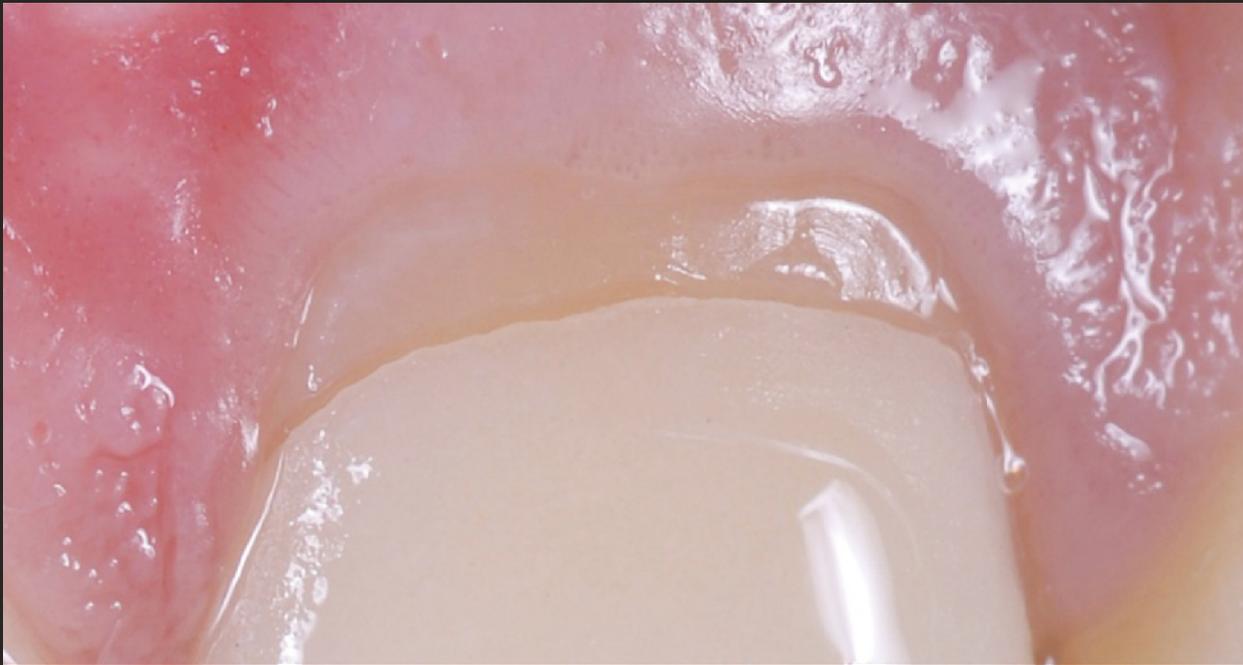


copyright by
not for publication
Quintessenz



Step four Final prosthetic rehabilitation

After final glazing of the crown to obtain the optimal color, texture, and form, the pressed and layered e.max crown is cemented with dual-curing cement. After cementation, the zone apical to the cementation line will be conditioned with a round burr.

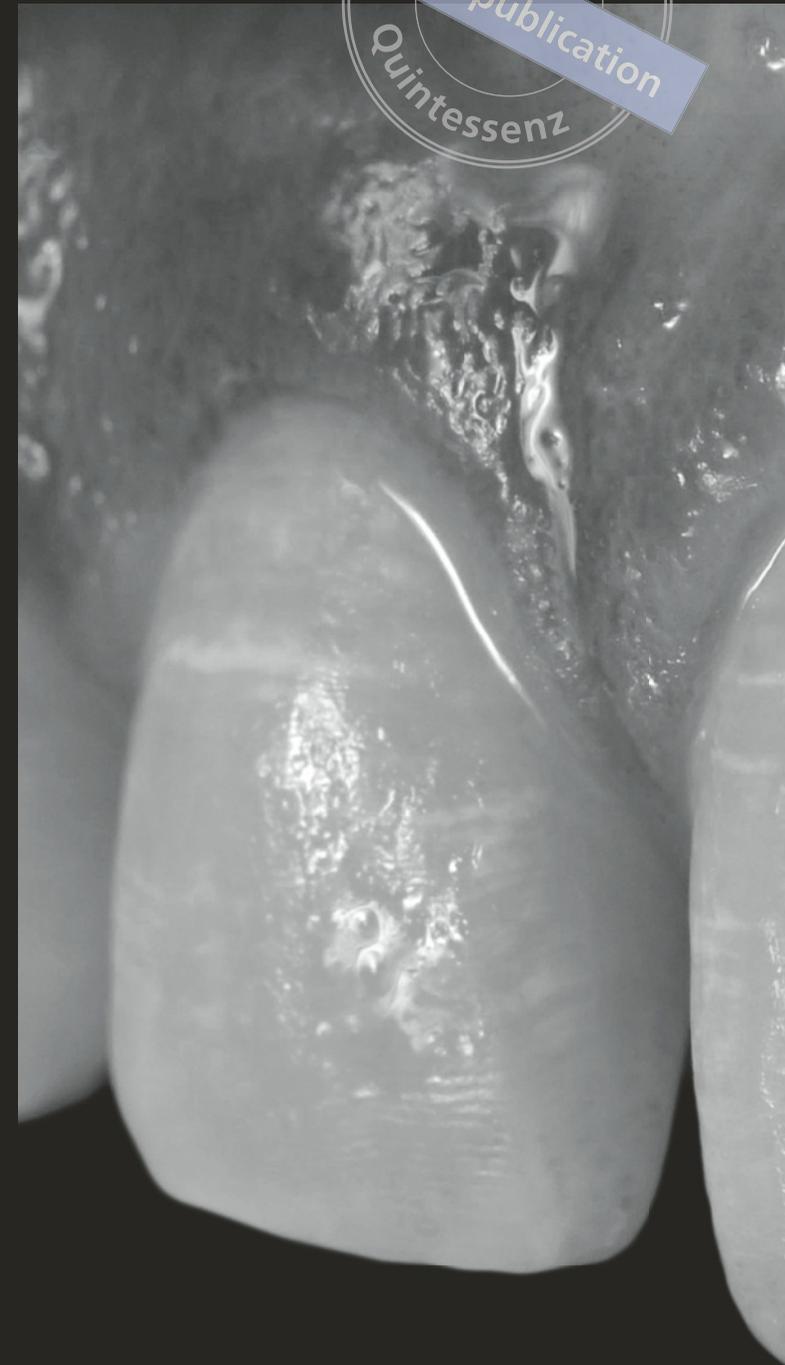


Try-in

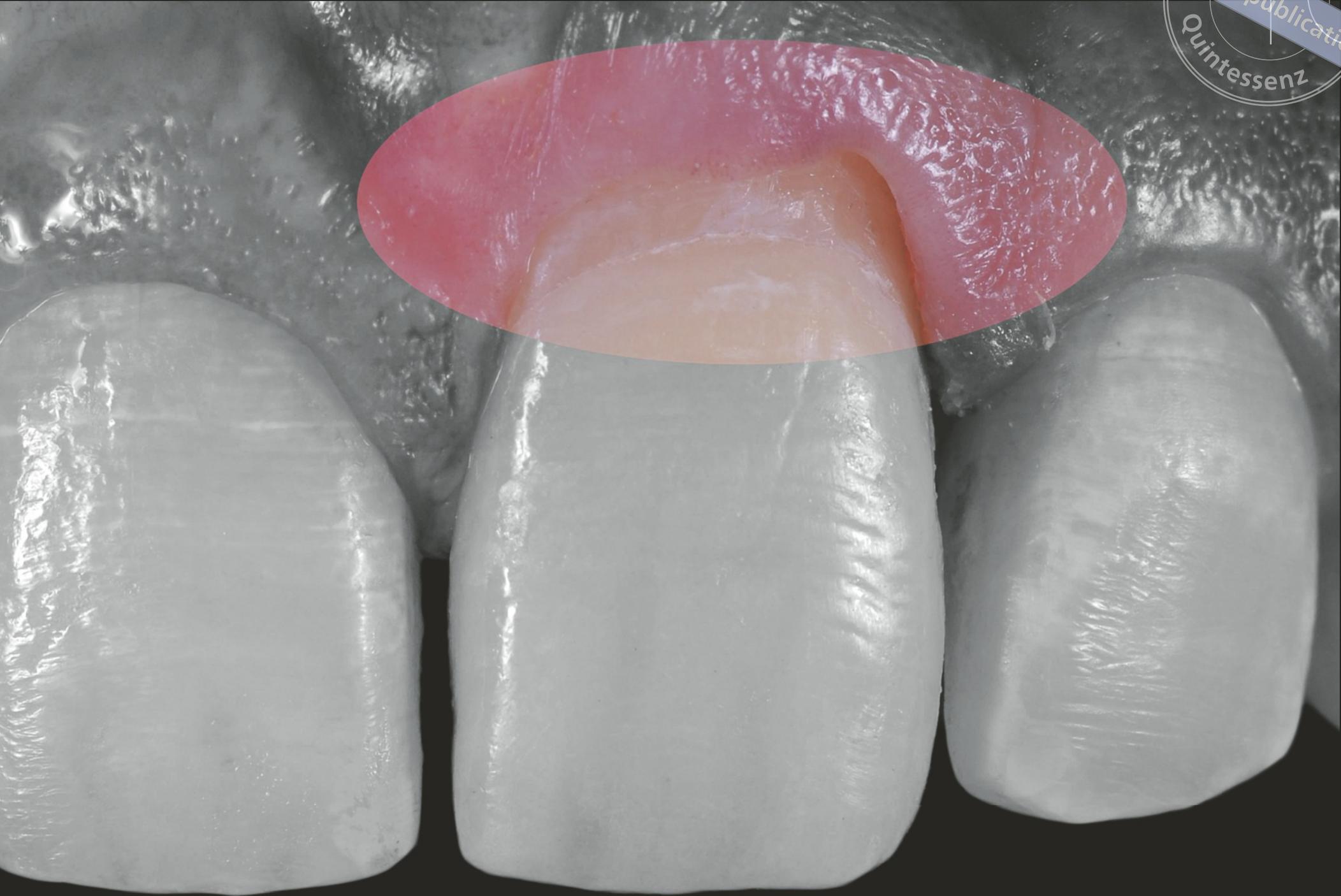


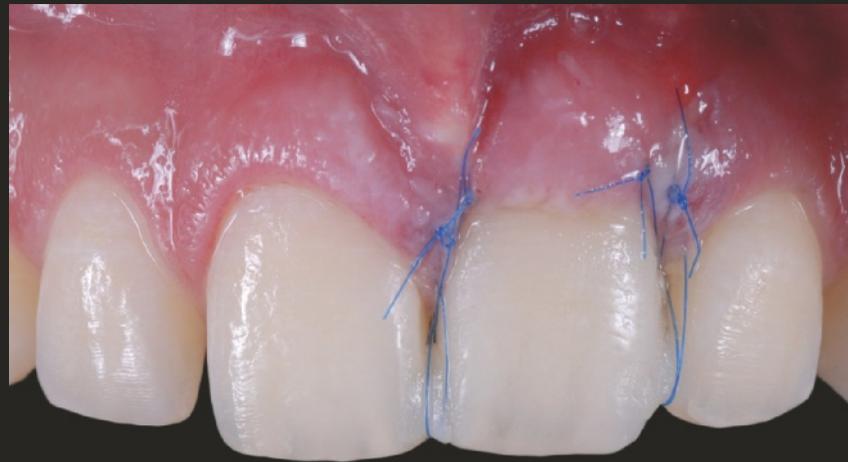
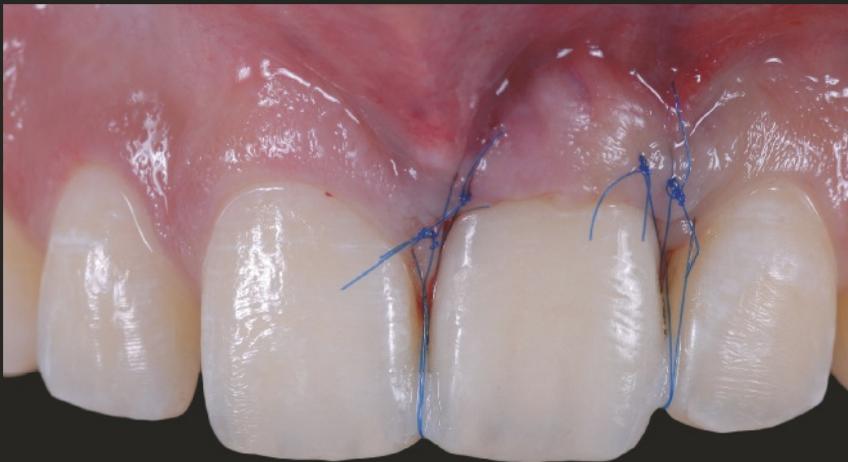
After cementation and rootplasty

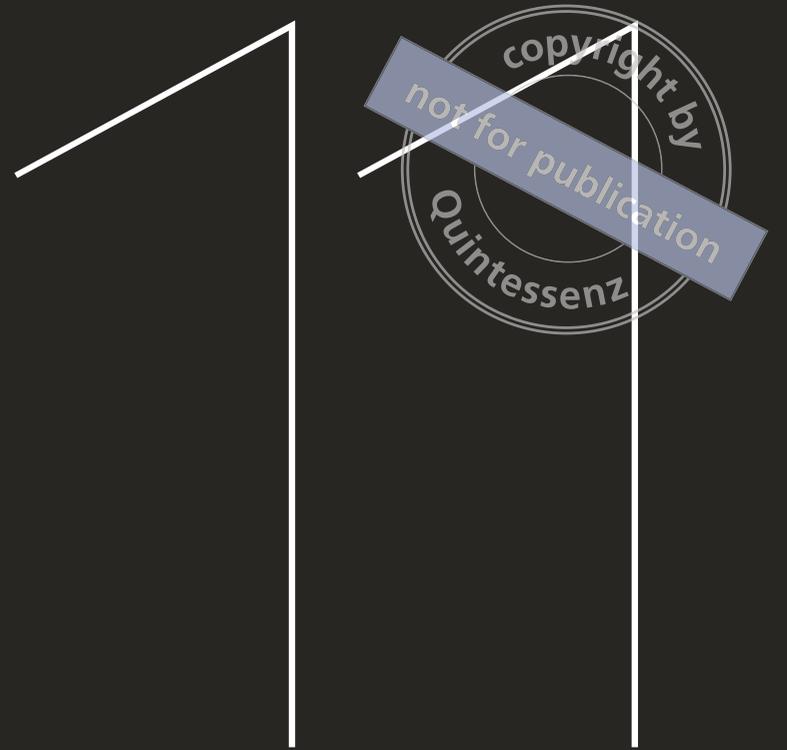
“ It is important to create a concavity with a round burr apically to the cemented crown. This will allow for symmetry in thickness of the grafted area, removal of the enamel, and will provide a receptor bed for the graft. ”



copyright by
not for publication
Quintessenz



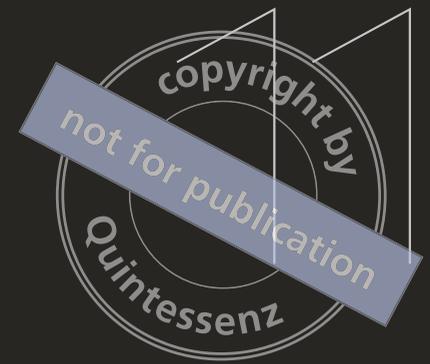




The central-lateral
incisor dilemma



copyright by
not for publication
Quintessenz



Introduction

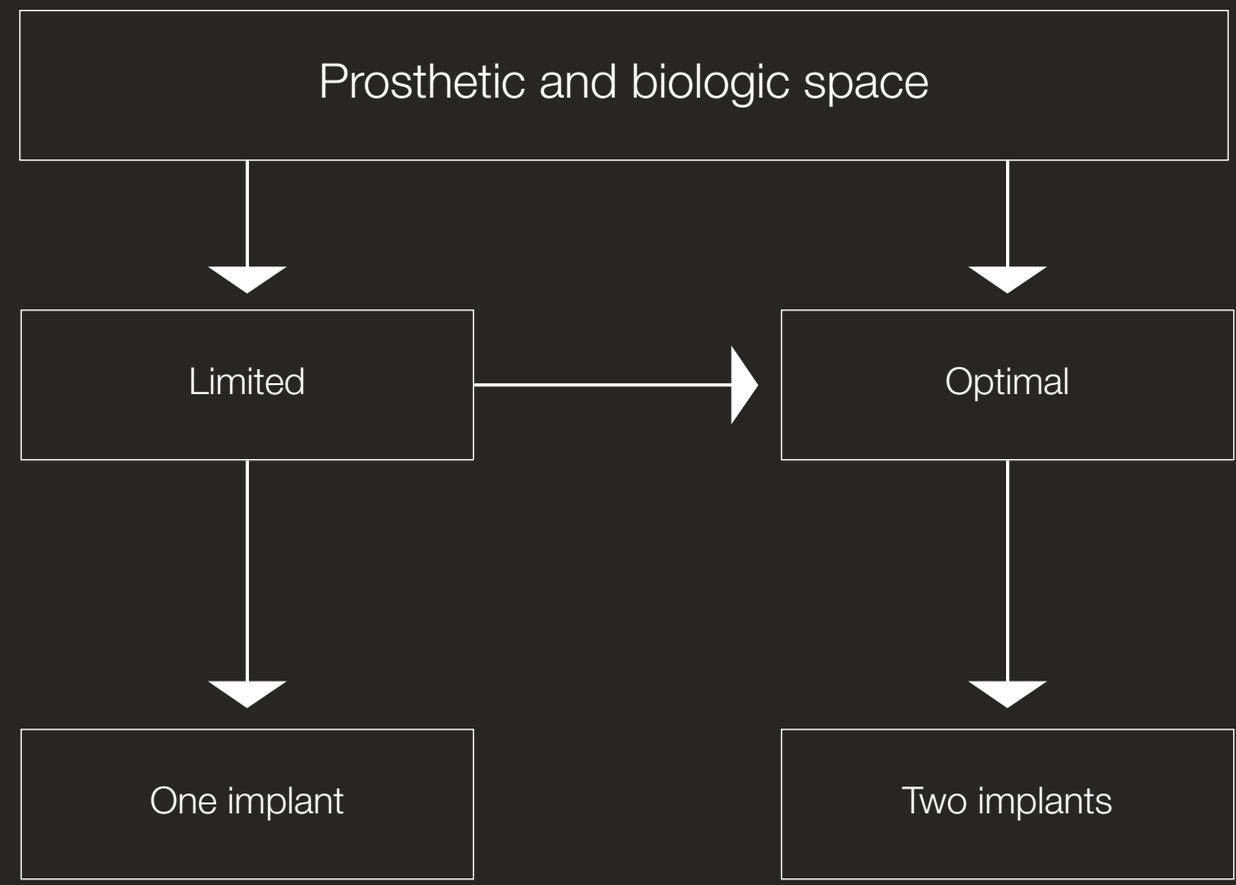
The simultaneous replacement of lateral and central incisors with dental implants can be a source of concern for obvious reasons. Despite improvements in design, connections, and surface treatment, bone remodeling should always be expected after placement of an implant. When replacing two adjacent teeth with implants, this physiologic remodeling can result in unesthetic clinical results.

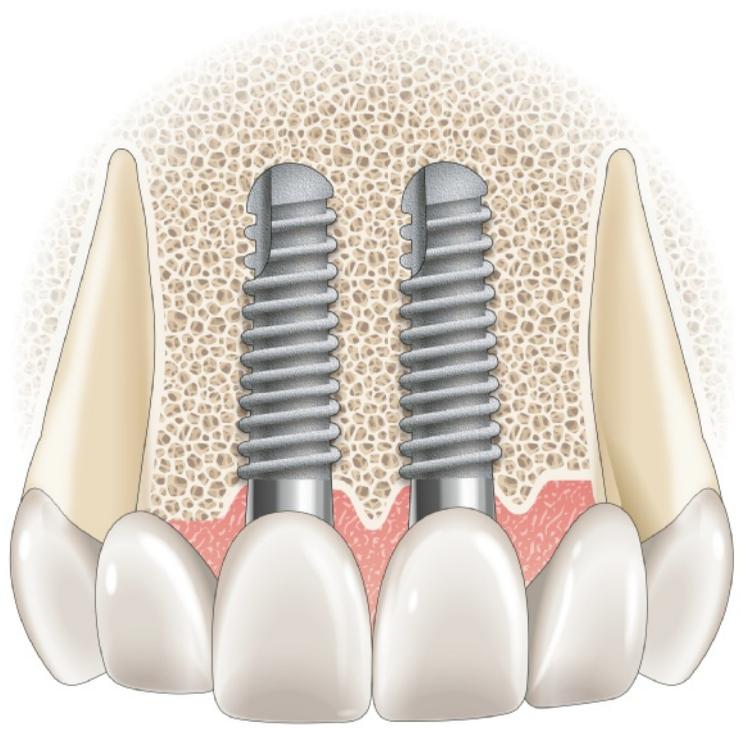
The clinician will almost always be faced with the difficult choice of placing one or two implants. Decision-making in this specific clinical situation is multifactorial, but the available mesiodistal space between implants and the tooth form are probably the most important factors.



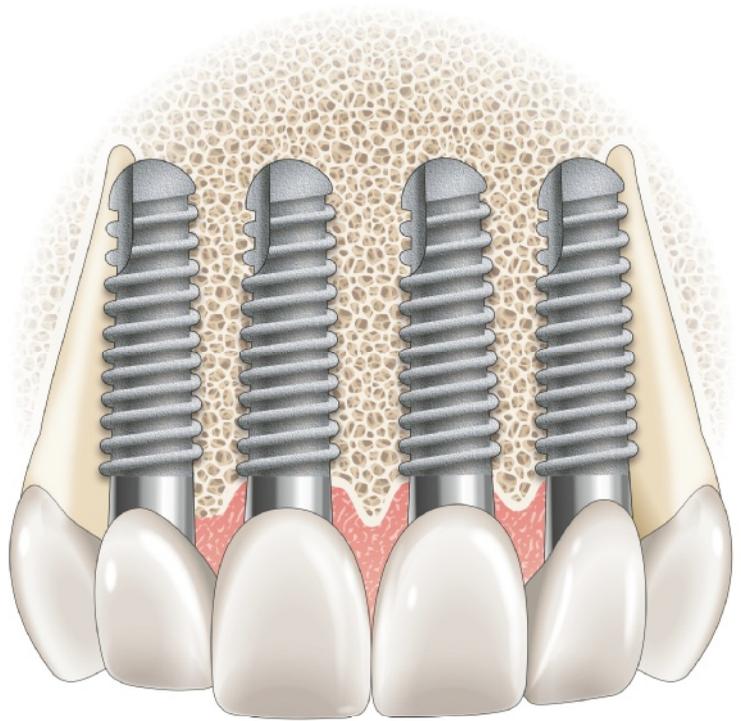
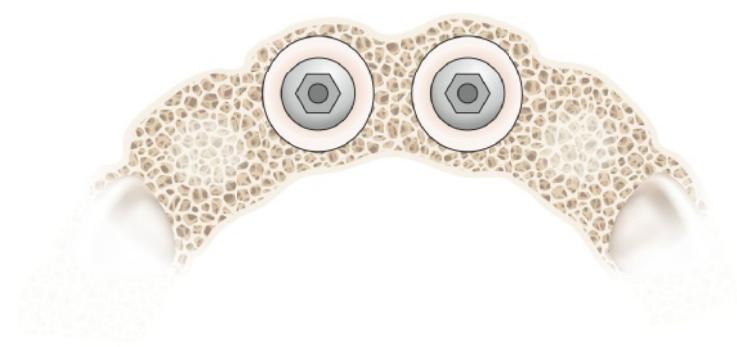
Tips and tricks One or two implants?

This choice is often a choice between theoretical potential and pragmatic benefit.
If **all conditions** are optimal, two implants will be better than one. If **any condition** is not optimal, one implant will be better than two.
Keep in mind that conditions can be optimized. Orthodontics can be used to optimize prosthetic space.
Guided bone regeneration (GBR) can be used to optimize biologic space. Theoretically, not having a connector **can** mean improved esthetics and cleanability. However this is only true under **optimal conditions**.

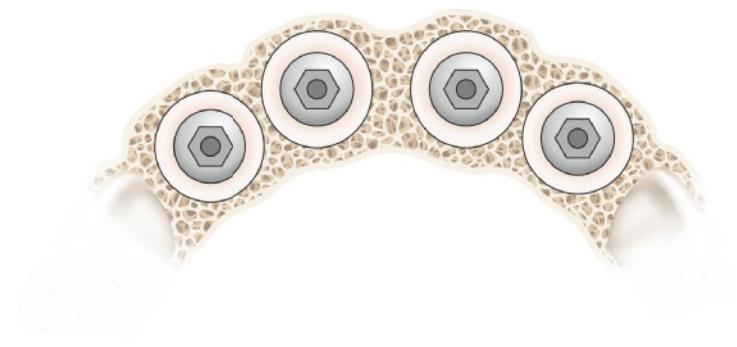




Limited space

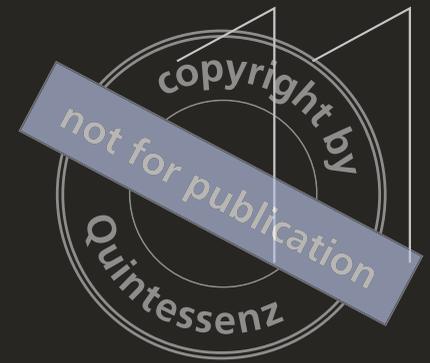


Optimal space





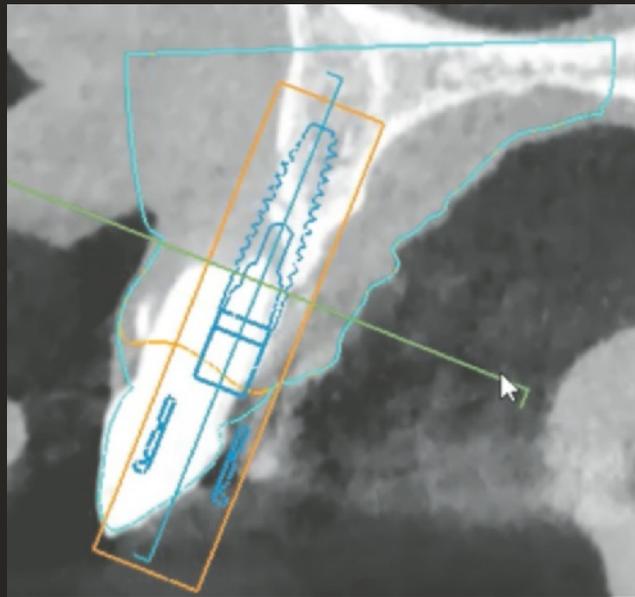
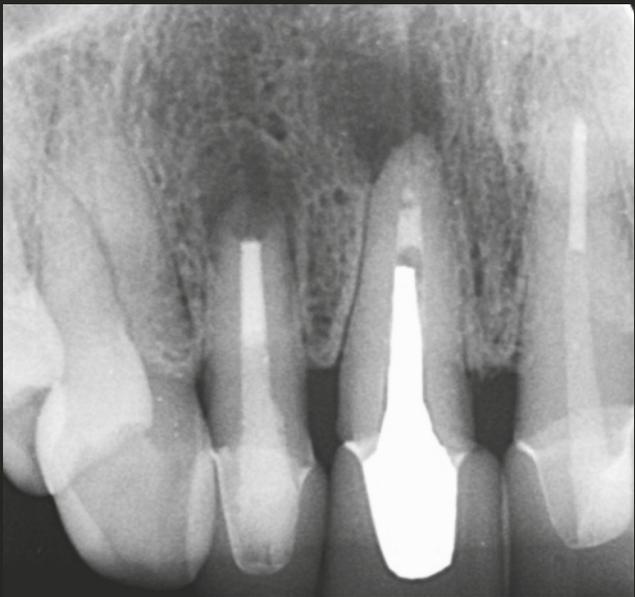
copyright by
not for publication
Quintessenz



Clinical situation 1

This 46-year-old female patient was referred for replacement of both lateral incisors and right central incisor. All three teeth had recurrent endodontic lesions associated with pain in the region of the apices. Besides this main complaint, the black triangles between the anterior teeth, probably caused by the old apicectomy, and the color of the soft tissue around the right central and left lateral incisors were worrying the patient.

copyright by
not for publication
Quintessenz



Step one Record

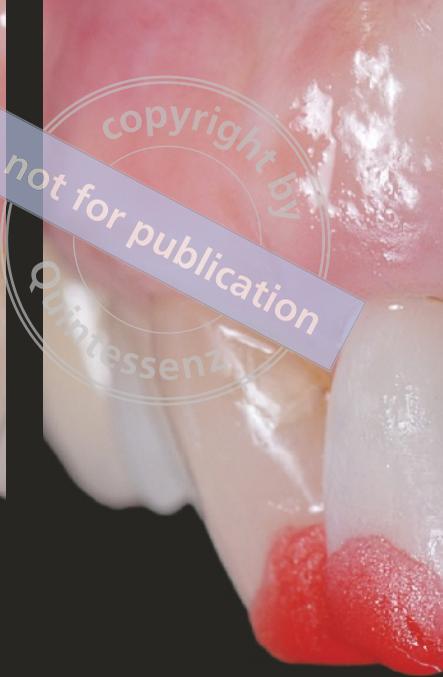
Cone beam computed tomography (CBCT) is essential for a proper diagnosis and to plan the guided surgery in this case because it allows to:

- visualize the three-dimensional (3D) bone configuration and extent of the endodontic lesions;
- measure bone height and thickness;
- measure the available bone apical to the roots and the endodontic lesion for implant stabilization;
- measure the distance between the existing roots and the available mesiodistal space;
- evaluate soft tissue. To evaluate the soft tissue, the authors recommend placing a cotton roll or a retractor between the teeth and the lip. This will separate the lip mucosa from the gingiva;

→ simulate implant placement and eventually relate it to the prosthetic design in any implant planning software.

For example, in this clinical case, it was very obvious, when looking at the CBCT section of the lateral incisor, that immediate implant placement (IIP) would not be possible without GBR and raising a flap, thus making the treatment more complicated and probably less predictable when it comes to the final esthetic result, especially in the inter-implant area.





copyright by
not for publication
Quintessenz





Step two

The ideal provisional design

Before extraction, it is important to use the chamfer preparation on the natural tooth as a reference for the gingival form of the provisional bridge for both central and lateral incisors. The prosthetic soft tissue support should not be different for an implant restoration or a crown on a natural tooth. The transmucosal design of the implant restoration should ideally be a copy of the root in the first 1.5 mm. In order not to lose this important 3D reference after extraction and subsequent gingival collapse, a Duralay jig on both neighboring teeth was made.

Step two Atraumatic extraction

This procedure should follow these guidelines:

- Use a periostome for the initial section of the periodontal fibers and gently initiate the luxation.
- Push the tooth in the alveolus first when engaging with forceps; it will cause rupture of the periodontal fibers and edema, which will facilitate the extraction.
- Use forceps to gently turn the tooth. Care must be taken to preserve the buccal bone and interdental bony septum.
- After extraction, a sharp curette should be used to clean the alveolus and remove all remnants of the endodontic lesion.
- Probe and map the buccal bone levels; this is important at this stage.
- Use a round diamond burr or scalpel to remove the sulcular epithelium.

