

ADVANCED IMPLANT DENTISTRY WORKBOOK

FOR THE GENERAL DENTIST

1: Flapless Approach:

Attempted Immediate Placement and Immediate Temporization; provisions made in amended plan.

2: Flapless Approach:

Placement several months after extraction and Bone Inducing Material placed in extracted socket for preservation of future implant site in conjunction with natural crown replacement.

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INTRODUCTION

The materials, method, systems and the types of cases that were selected here do not restrict the reader to the same.

Case 1 presentation includes hand drawn renderings that have been done by Michael Delaney of Toronto, and along side of which are the actual photos.

The other cases are displayed with photographs only.

ABOUT THE AUTHORS

PHILOSOPHY OF TREATMENT

It is the intent of the authors to explain these procedures in a tactile manner. We have thought through this and have attempted to convey the dynamics of such procedures to give the generalist a starting point for the confidence required to perform.

The flapless and immediate aspects of implant treatment, especially in the esthetic zone is the pinnacle in dentistry today of restoring missing teeth.

In case A, treatment goal originally was to extract Upper Left Central Incisor and immediately Place Implant into extraction socket, and immediately load fixture with a temporary crown (kept out of function).

This plan may be foiled upon extraction. Extraction of an endodontically treated root often presents risk factors due to several reasons:

- The desiccation and thinning of labial bony plate with or without minimal luxation and/or from coronal to apical coring through the canal space.
- Consideration of occlusion may impact this choice especially if bite is an end-to-end situation (greater tendency for labial plate thinning or fenestration).
- Excessive forces will cause a restriction of microscopic blood flow to the periodontium in areas opposite to applied forces in vital and non-vital teeth.
- soft tissue modifications may not be necessary to create in immediate cases. If they are then they should be augmented prior to implant placement.

In anticipation of this occurrence, bone inducing materials should be readily available to be placed into socket with or without the immediate placement of the fixture.

The Steps of these cases have been listed in a numerical order for the convenience of the reader, and are not intended to be used as the only mode of approach.

NOBEL BIOCARE

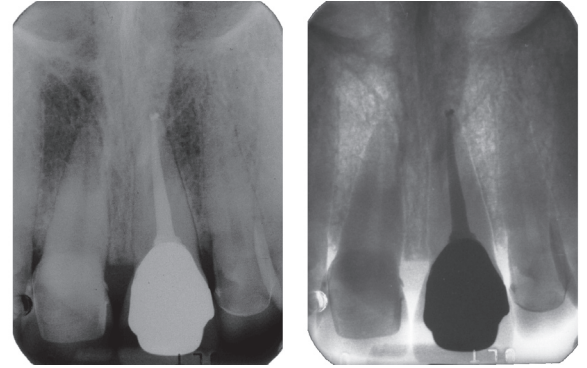
Nobel Biocare is the world leader in innovative esthetic dental solutions and a one-stop-shop for restorative esthetic dentistry, offering a wide range of innovative Crown & Bridge & Implant products, as well as training & education and clinically documented treatment concepts. Our solutions enable dental specialists, general practitioners and dental technicians to offer patients high esthetic new teeth.



CASE 1

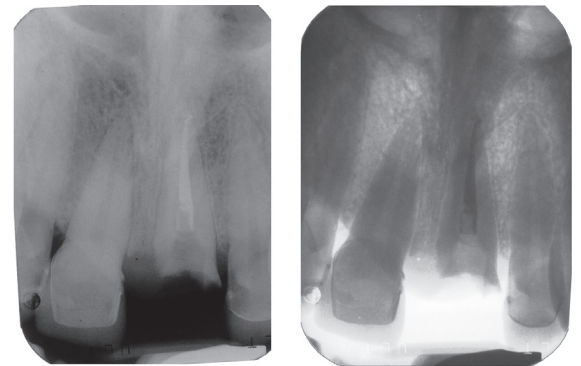
Step
1

Pre-extraction PA's



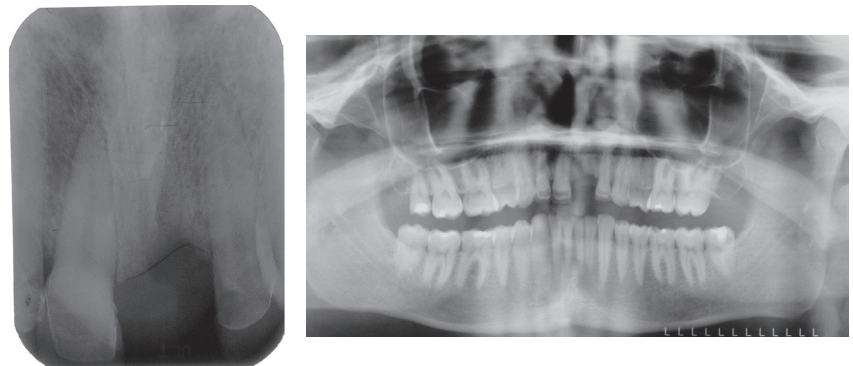
Step
2

Pre-extraction PA's



Step
3

Pre-implant Placement X-rays



Checklist

Notes

- All Pre-Implant considerations were made prior to the extraction of tooth 21
- Anticipate difficulties in the extraction of 21, that is the preservation of the Labial cortical plate, which has been compromised

- A good parallel PA is used to measure the lengths of adjacent roots and the edentulous bone height; plan to use a 4.3 x 13.0 mm. RP Replace Select tapered fixture
- Have backup fixtures on hand...4.3 x 10.0 mm. and 3.5 x 13.0 mm. as well
- Exploratory flap raising is an option to check thickness or fenestrations, but this step is not encouraged
- Are there Age and health factors affecting treatment

- Extraction by coring through canal, still resulted in breaking of labial plate
- Placement in socket of Biooss and Dynagraft with resorbable membrane
- Thumb partial as temporary placed one week later. Other temporary options are available. This was used here as adjacent teeth were already had full porcelain crowns

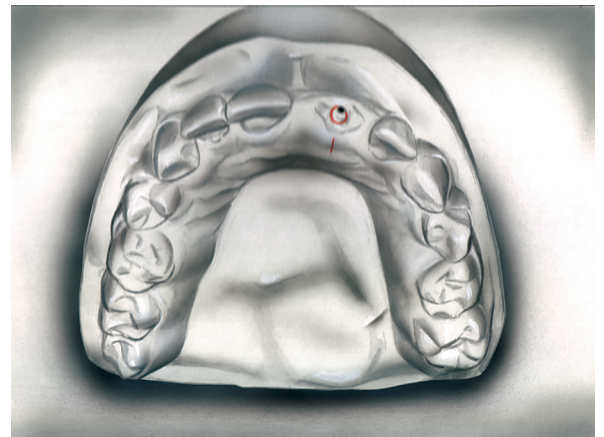
**Step
4**

Study Model Analysis



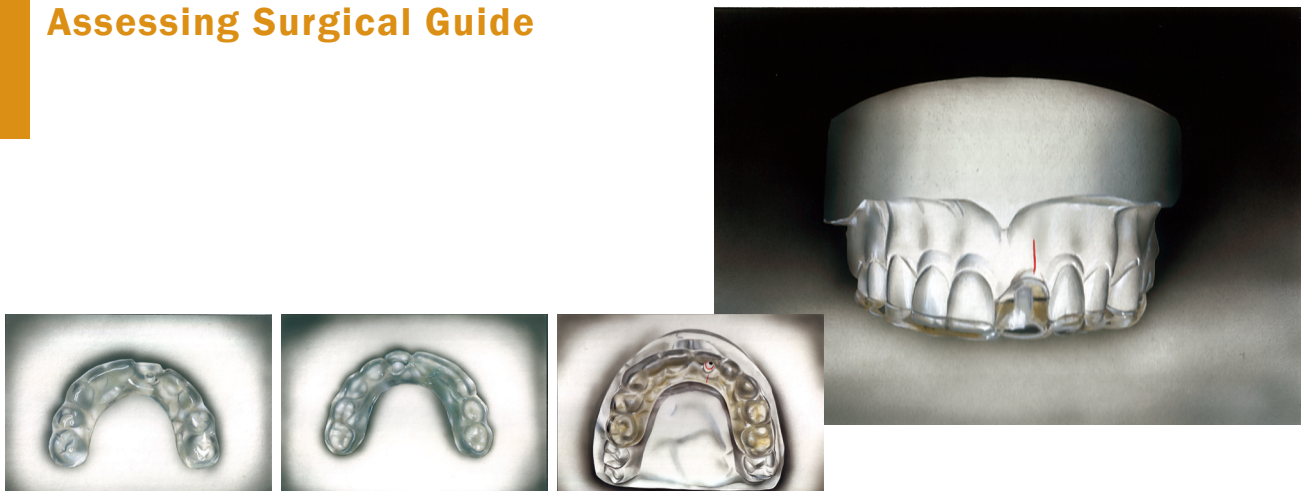
**Step
5**

**Study Model Analysis And
Surgical Guide Design**



**Step
6**

Assessing Surgical Guide



- Diagnostic Wax-up
- May wish to surgerize implant site on duplicate model to help in determining width
- Lab fabricated abutment estimating emergence by way of surgical guide, may be used to support temporary crown and future permanent crown

- May choose to use pre-fabricated temporary abutment, as was done in this case

Fabricate surgical guide

- 7.0 mm. of room from centre of adjacent teeth to centre of implant prep
- 4.5 to 5.0 mm. wide pilot hole should be cut into stent, or start with 2.0 mm. then cut at chairside to widen, or have more than one stent ready

- Estimate trajectory of implant; use adjacent teeth as reference
- Pay close attention to the position of the cinguli on adjacent teeth; this will help with your starting point of entry
- concentrate on the amount of labial to palatal thickness
- may use vented or non-vented final crown design; vented crowns are used infrequently today
- Interdental location of prep
- Stent's pilot hole should be exaggerated to the palatal of the crest
- Cingulum in stent to simulate future crown cingulum
- Pre-operative preparation of materials, equipment. Pre-med, post med

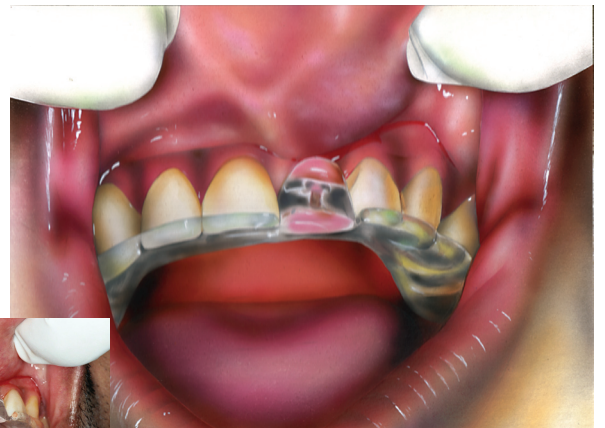
**Step
7**

Implant Site Inspection



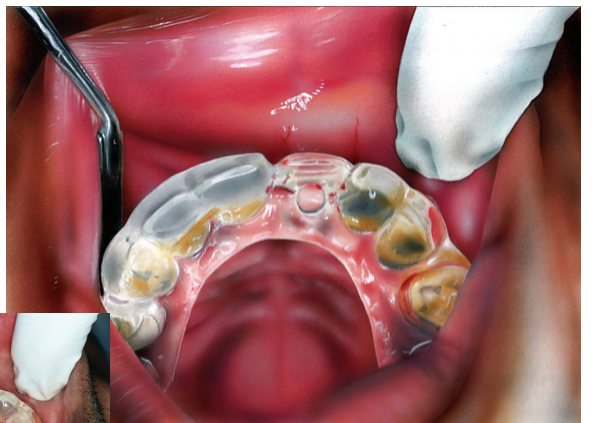
**Step
8**

Check Stent Criteria



**Step
9**

Guide Assessment



Checklist

Notes

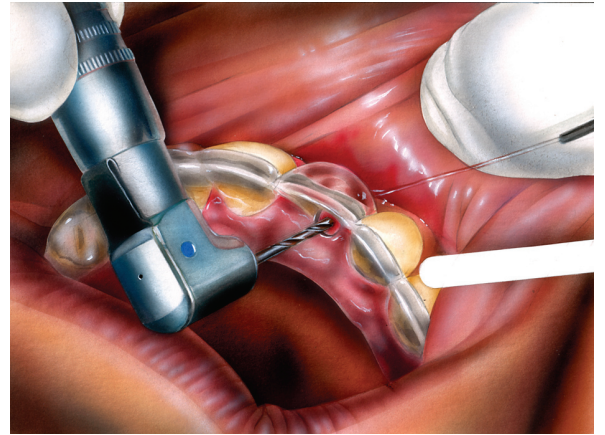
- lip coverage
- palpate buccal to palatal thickness
- exploratory flap if desired

- make sure stent is seated properly
- incisive papilla
- incisive foramen

- Labial indentation
- soft tissue augmentation
- gingival scallop; adjacent clinical crown length/width/
thickness
- attached gingiva and on neighbouring teeth

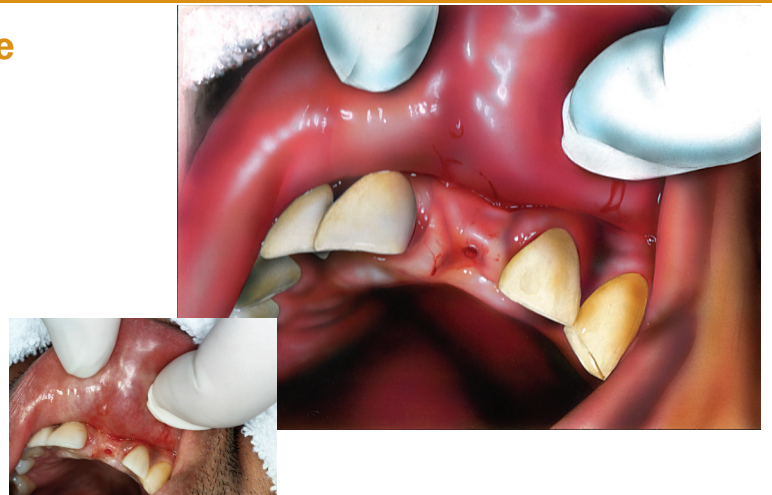
**Step
10**

Surgery-2.0 mm. Twist Drill



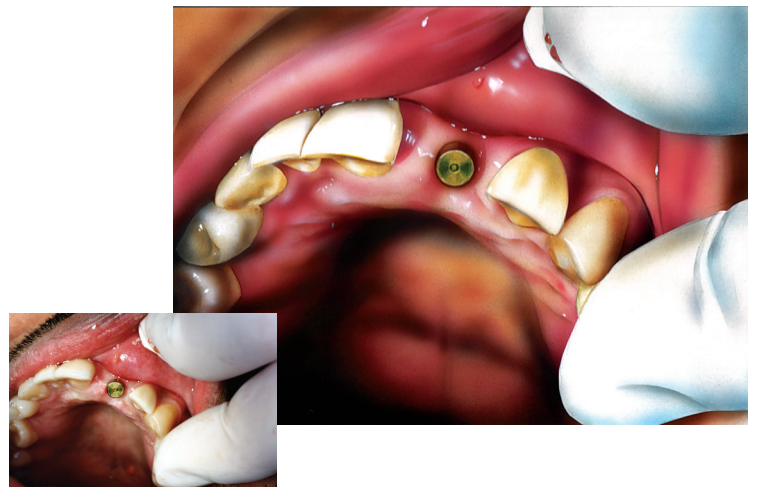
**Step
11**

Confirm Accuracy of Guide



**Step
12**

Tissue Punch Guide



Checklist

Notes

- Reliability of stent w.r.t. angulation
- Feel for the transition from soft tissue to hard tissue
- Keep in mind that the crestal bone is slightly concave after graft heals and resorbs slightly

- Check preparation stages by taking stent off and on
- Take care not to cross over suture line
- Penetrate at least 5 mm. with 2.0 mm. twist drill

- Orientate pilot placement to cinguli of neighbouring teeth
- Concentrate on the buccal to palatal positioning

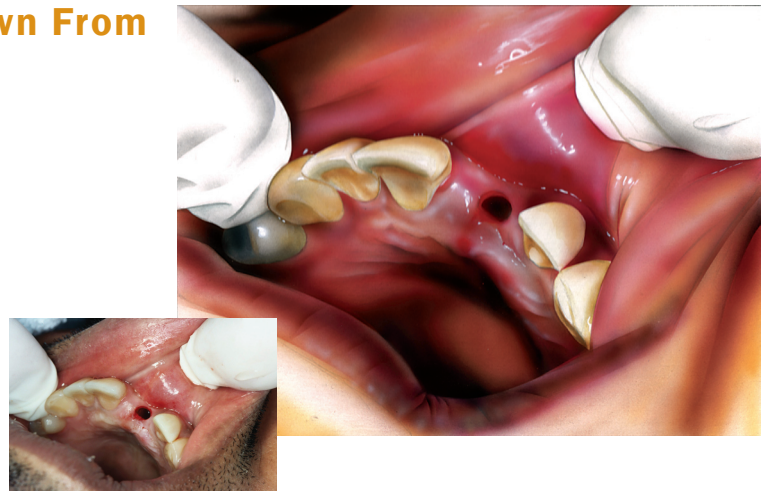
**Step
13**

Tissue Punch



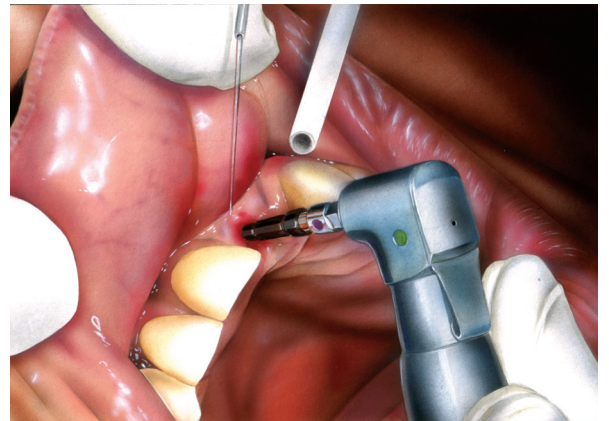
**Step
14**

Emergence of Future Crown From Site



**Step
15**

3.5 x 13.0 mm. Prep Hole



Checklist

Notes

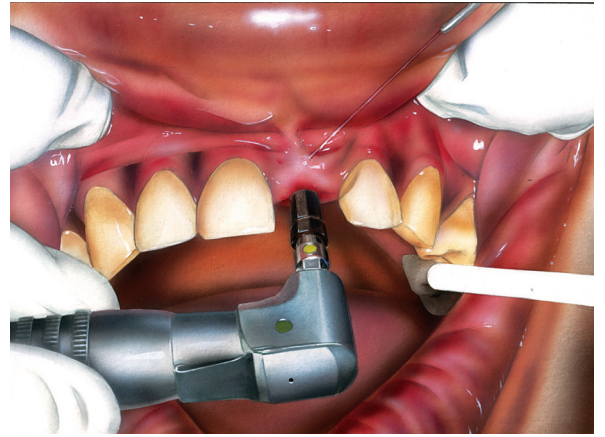
- Cut through to bony crest
- Keep in mind crest may be concave flat or convex after graft placement
- Curette or pull off tissue punched from site
- Palpate initial bone cut with thin probe

- May be the most crucial step; cut must be in exact position
- Reassess trajectory with 2.0 mm. twist drill or thin probe

- use narrow prep bur for initial cut all the way to the bony crest
- angulation may still be modified at this stage if necessary
- look at adjacent cinguli
- confirm with guide

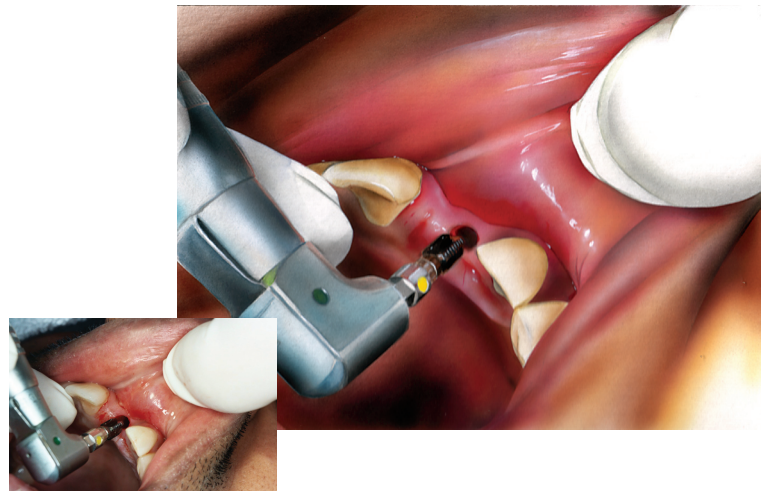
**Step
16**

**Widen to 4.3 x 13.0 mm. Prep
Bur**



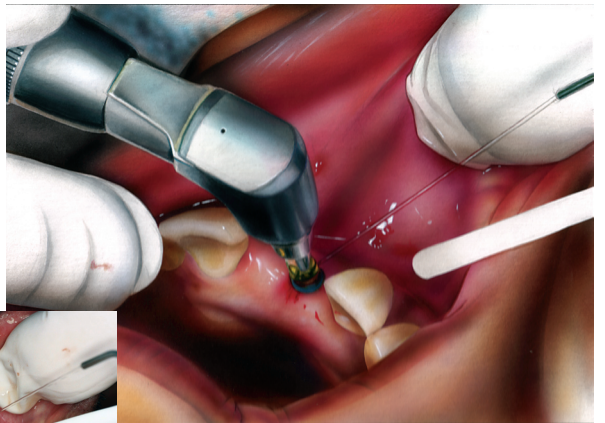
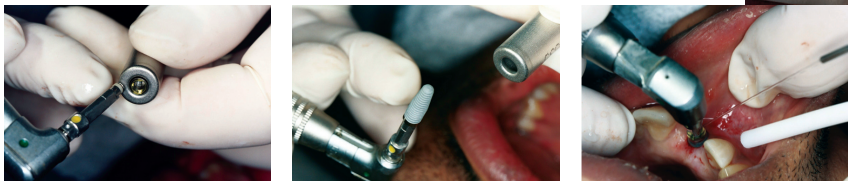
**Step
17**

Screw Tap



**Step
18**

Handling of Implant



Checklist

Notes

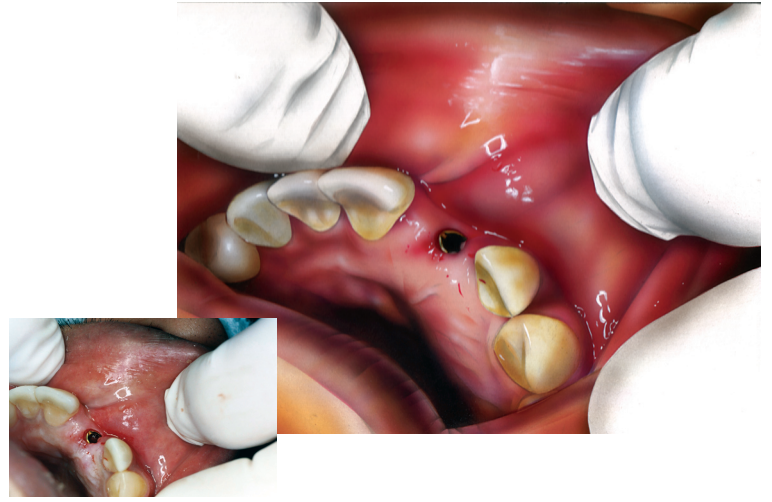
- Change to 4.3 mm driver
- Long driver may be needed to clear adjacent crown heights
- follow 3.5 cut if certain about angulation
- change prep angle here if necessary

- 4.3 mm. screw tap to upper third or middle of prep
- have back up fixtures on hand

- Remove implant from vial with care; allow driver to snap into top of fixture
- Hold fixture upside down in case driver is not fully engaged

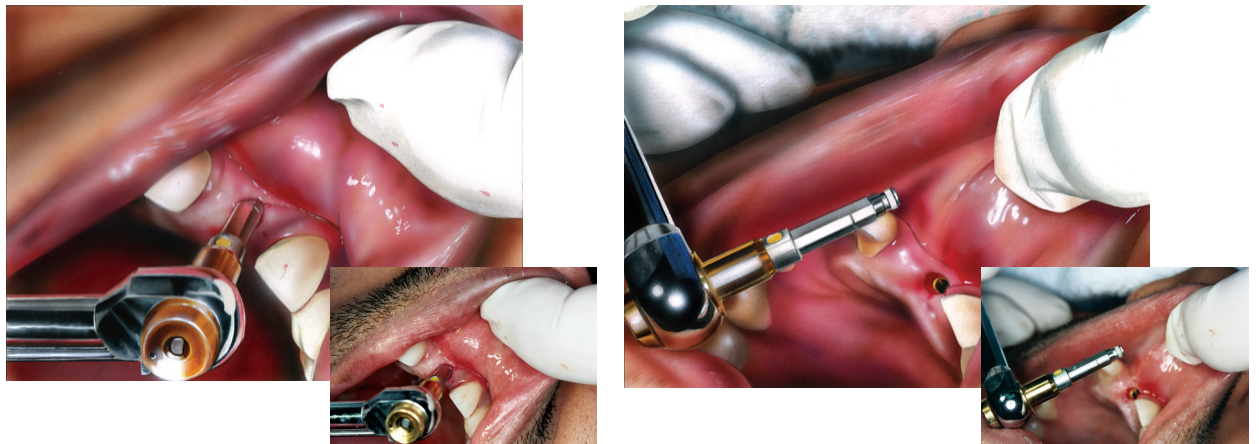
Step
19

Fixture tapping



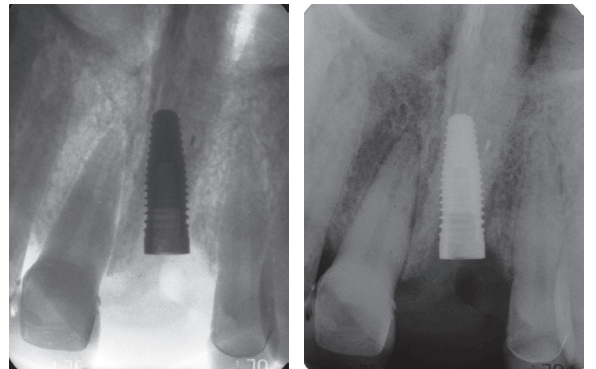
Step
20

Hand Driver



Step
21

X-ray to Check Placement



Checklist

Notes

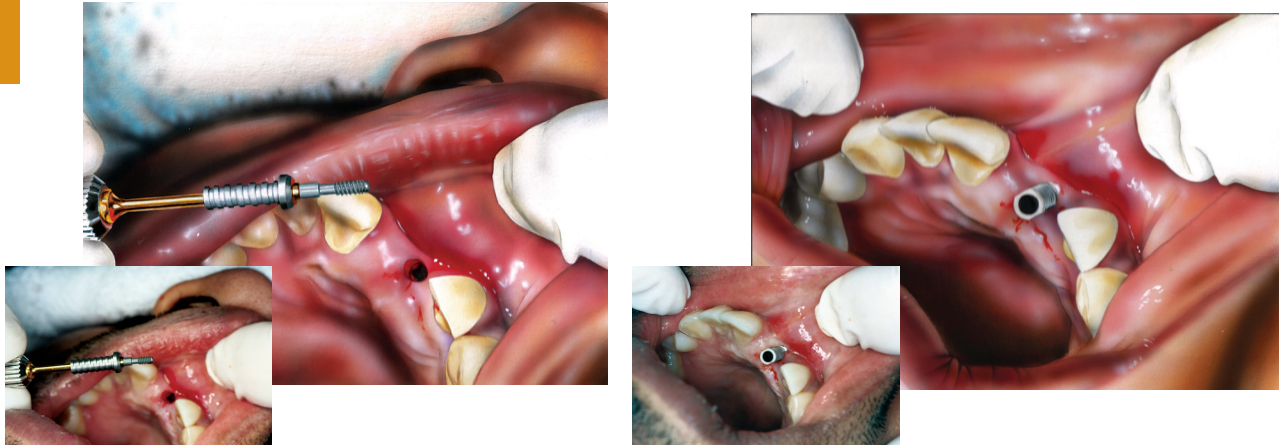
- use motor-driven driver until fixture stops (due to density of bone) then proceed with hand driver

- hand driver is needed in most instances
- recheck top of implant seating after 1 or 2 turns by hand until proper depth is obtained
- caution not to overturn fixture
- place any bone inducing material around fixture at this point especially if angle was adjusted or fresh extraction socket is used for implant site

- 2 angle PA's may be needed
- fixture can be removed at this point if necessary

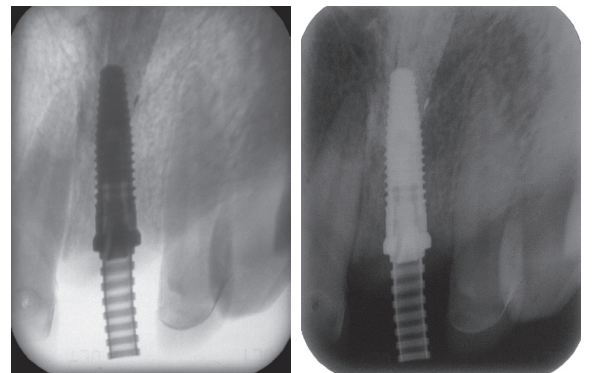
**Step
22**

Temporary Prefabricated Abutment



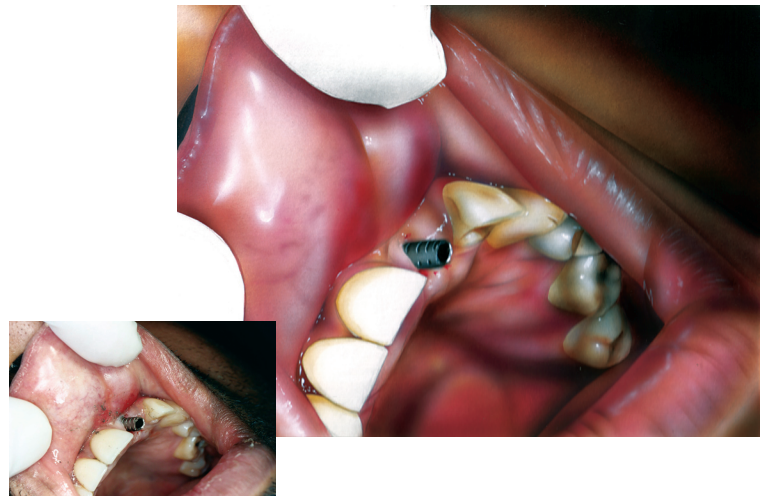
**Step
23**

**Confirm Seating Of Temporary
Crown**



**Step
24**

Cut Abutment



Checklist

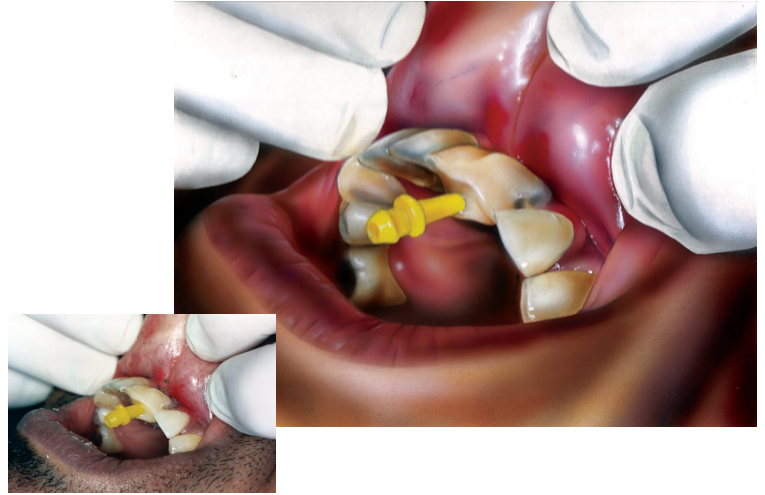
Notes

- prefabricated temporary engaging abutment 4.3 RP replace select

- cut water cooled
- allow proper interocclusal distance

**Step
25**

Block Out Vent Hole



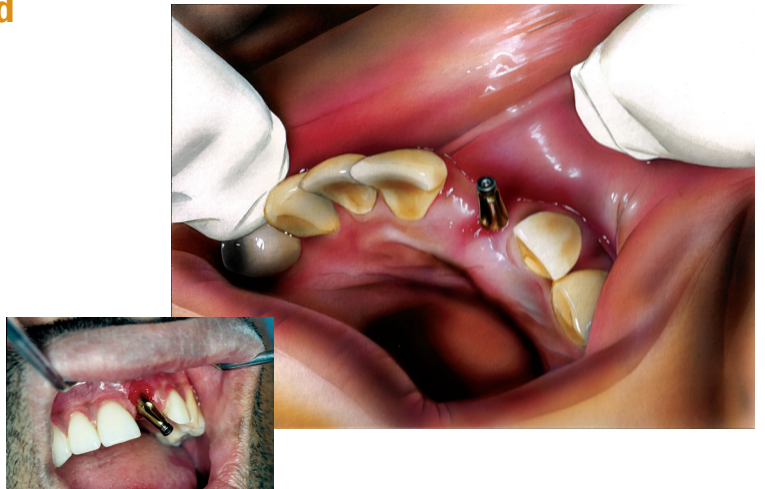
**Step
26**

Shaping Temporary Crown



**Step
27**

Impression Coping Seated



Checklist

Notes

use impression syringe tip while dabbing on Protemp

- Remove Temporary untrimmed with prosthetic driver (universal grip) through vent hole
- Create squareness and tight contacts to reduce chances of rotation and loosening
- Do Not torque drive temporary abutment

Confirming x-ray required

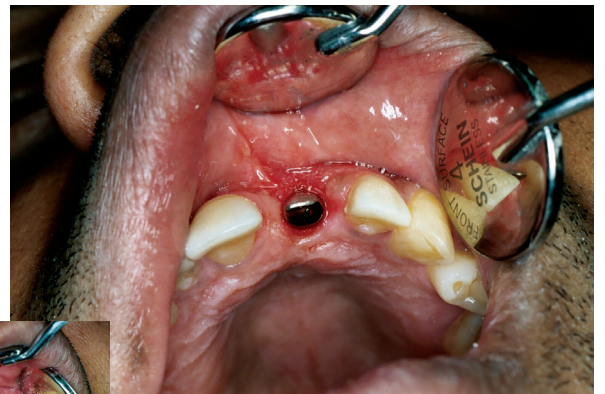
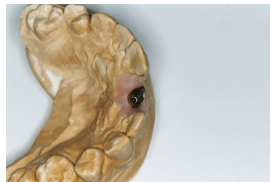
**Step
28**

Impression



**Step
29**

Custom Abutment With Non-vented Crown



**Step
30**

Seating and Luting of Crown



Checklist

Notes

Closed tray and coping for closed tray was used here

acrylic cement *Calabra* was used

**Step
31**

Compare Case X-rays

