

1. Single Tooth Implant Crowns

Single Tooth Implant Crowns

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2. Session 8: Single Tooth Implant Crowns: Slide 2



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3. Introduction

Introduction

Single tooth replacement possibilities:

- Fixed Partial Dentures
- Resin Bonded Fixed Partial dentures
- Removable Partial Denture
- Single tooth implant crowns

Each of the above has its positives and negatives

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4. Patient Considerations

Patient Considerations

- What should the patient know?
- Students should be able to discuss all “pros” and “cons” of conventional prosthodontic versus implant therapy

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5. Fixed Partial Denture

Fixed Partial Denture

- Need to shape adjacent teeth
- Risks to need endodontics and post
- Expensive
- Hard to clean

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6. Removable Partial Denture

Removable Partial Denture

- Removable
- Large prosthesis for single tooth replacement
- Cost effective
- Easy to clean
- May show clasps

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7. Resin Bonded Fixed Partial Denture

Resin Bonded Fixed Partial Denture

- Need shallow incisal guidance
- Need large lingual surface of the abutment teeth
- Hard to clean
- Can debond
- Minimum tooth preparation
- Somewhat cost effective
- Esthetic

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9. Single Implant Crown

Single Implant Crown

- Expensive
- Require surgical procedure
- Require time for healing/osseointegration
- Closest to replacing what lost
- Easy to clean
- Esthetic

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10. Smile Line

SMILE LINE



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11.

Space Analysis

SPACE ANALYSIS



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12.

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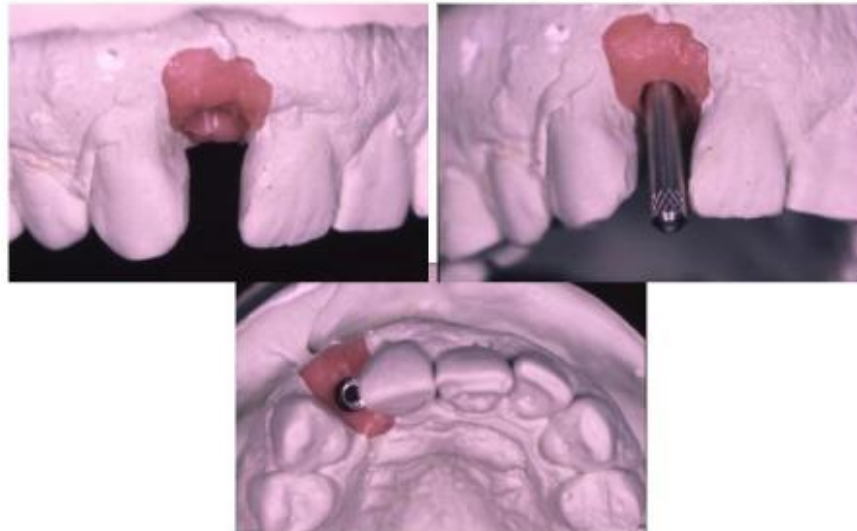


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15.

Oops!

OOPS!



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16.

Ridge Anatomy

Ridge Anatomy

- Resorption
- Concavities
- Anatomical Landmarks

How do these factors affect the outcome of form, function, and esthetics of restoration?

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17. Ridge Deficiencies

Ridge Deficiencies



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18. Ridge Deficiencies

Ridge Deficiencies



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19. Surgical Enhancement

Surgical Enhancement

Site Development

- Hard/Bone augmentation
- Soft tissue augmentation

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22. Type of Single Tooth Abutment

Type of Single Tooth Abutment

- Prefabricate abutment for screw retained prosthesis
- Prefabricate abutment for cement retained prosthesis—Non Adjustable
- Prefabricate abutment for cement retained prosthesis—Adjustable
 - All ceramic abutment—straight/angled
 - All metal abutment—straight/angled
- Custom cast abutment
- Modified custom cast abutment

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23. Single Tooth Implant Abutment

Single Tooth Implant Abutment

- Anti Rotational
- Be able to index
- High preload for the abutment screw to prevent screw loosening
- High compressive and tensile strength to prevent fracture e.g. ceramic abutment

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24. Abutment Selection

Abutment Selection

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none">• Do intraorally:
Remove healing abutment and measure with periodontal probe• Save time, cost and make one impression• Unpredictable outcome | <ul style="list-style-type: none">• Do in laboratory:
make implant level impression, form soft tissue level implant cast; make some measurement on cast (PAIT)• More time, cost and possibly additional impression• Predictable outcome |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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25.

Abutment Selection

Abutment Selection

Indirect Method (Laboratory Setting)

1. **P=Position**
2. **A=Angulation**
3. **I= Interocclusal Distance**
4. **T=Tissue depth/Contour**

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26.

How to use PAIT

How to use PAIT

1. **Make implant-level soft tissue cast**
2. **Mount cast**
3. **Cover implant with aluminum foil**
4. **Set up missing tooth to ideal form and position**
5. **Duplicate a wax up cast**
6. **Fabricate a clear thermoplastic template**
7. **Attach guide pin(s) to the implant**
8. **Retrofit and make access hole to facilitate seating of the clear template**
9. **Use PAIT to analyze proper abutment selection**

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27. Type of Single Tooth Abutment

Type of Single Tooth Abutment

- Prefabricate abutment for screw retained prosthesis e.g. UCLA, AuraDapt
- Prefabricate abutment for cement retained prosthesis—Non Adjustable
- Prefabricate abutment for cement retained prosthesis—Adjustable
 - All ceramic abutment—straight/angled
 - All metal abutment—straight/angled
- Custom cast abutment
- Modified custom cast abutment

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28. Case#1+AAAs-UCLA abutment (old version)

Case#1 UCLA abutment (old version)



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31. Make Implant-Level Impression

Make Implant-Level Impression



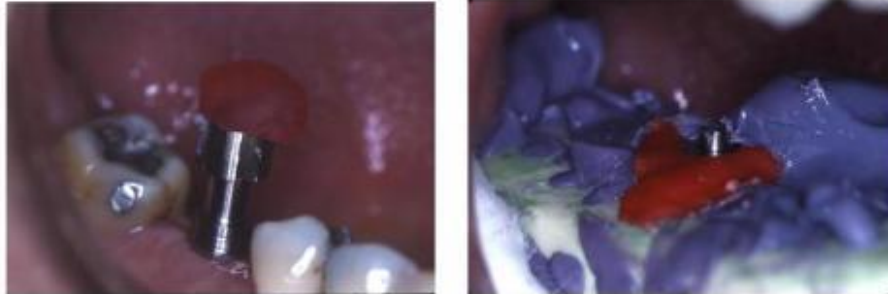
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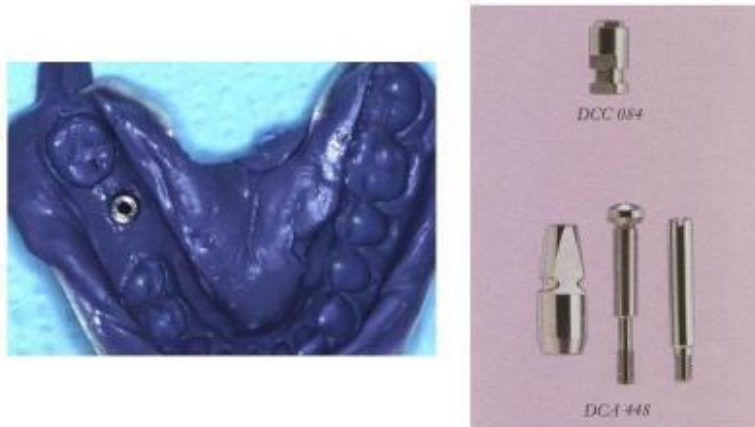
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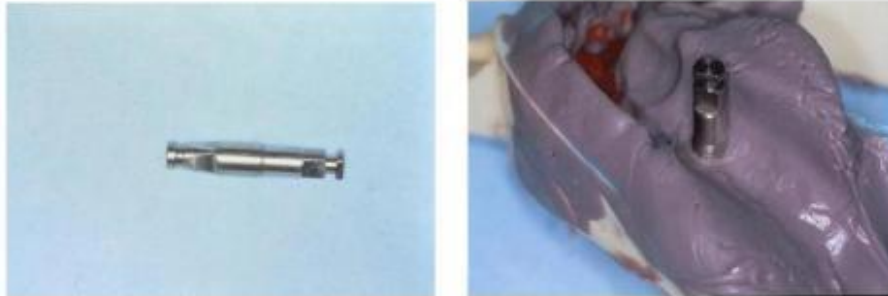
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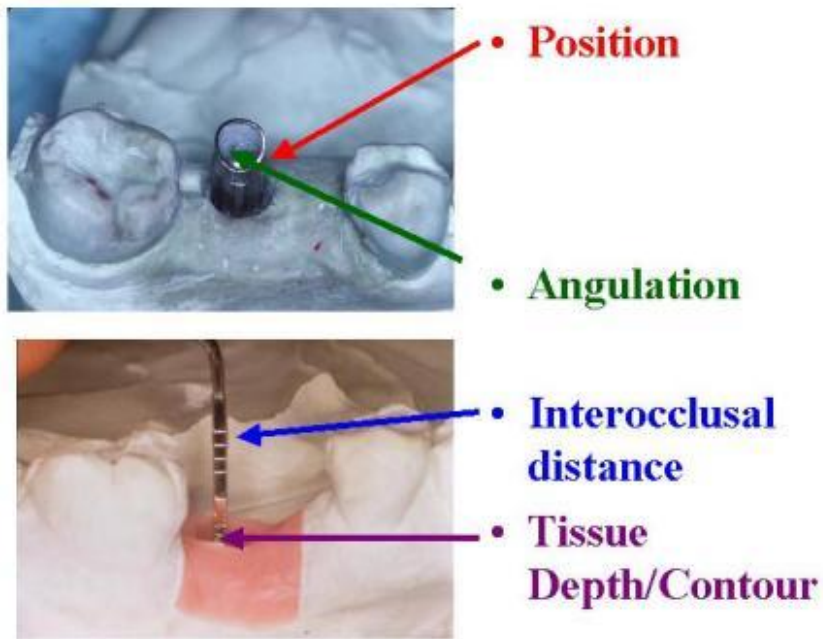
36. Form Implant-level Soft tissue Cast

Form Implant-level Soft tissue Cast



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40. Type of Single Tooth Abutment

Type of Single Tooth Abutment

- Prefabricate abutment for screw retained prosthesis
- **Prefabricate abutment for cement retained prosthesis—Non Adjustable e.g. CeraOne**
- Prefabricate abutment for cement retained prosthesis—Adjustable
 - All ceramic abutment—straight/angled
 - All metal abutment—straight/angled
- Custom cast abutment
- Modified custom cast abutment

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Prefabricate Abutment Cement Retained Crown

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42. CeraOne Abutment

CeraOne Abutment

- Impression Coping
- Laboratory analog
- Abutment Protective Cap
- Abutment Screw
- CeraOne Abutment
- Dental Implant
- Plastic/Gold cap
- Ceramic cap



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43. Case #2+AAs- use Prefabricate (non-preparable) abutment +AAs...

Case #2

use Prefabricate (non-preparable) abutment



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44. Case #2+AAs-use Prefabricate (non-preparable) abutment

Case #2

use Prefabricate (non-preparable) abutment



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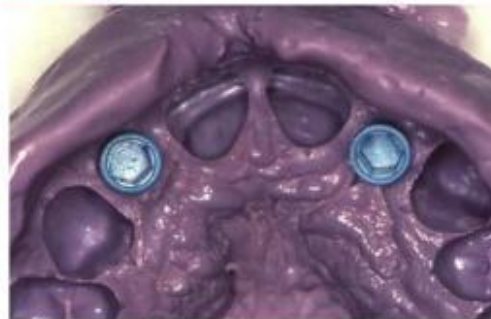
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47. Session 8: Single Tooth Implant Crowns: Slide 47



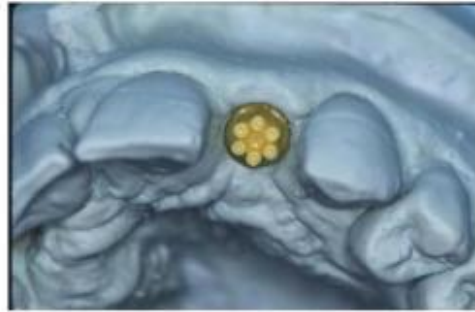
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50. Session 8: Single Tooth Implant Crowns: Slide 50



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54. Type of Single Tooth Abutment

Type of Single Tooth Abutment

- Prefabricate abutment for screw retained prosthesis
- Prefabricate abutment for cement retained prosthesis—Non Adjustable
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 - All ceramic abutment—straight/angled**
 - All metal abutment—straight/angled**
- Custom cast abutment
- Modified custom cast abutment

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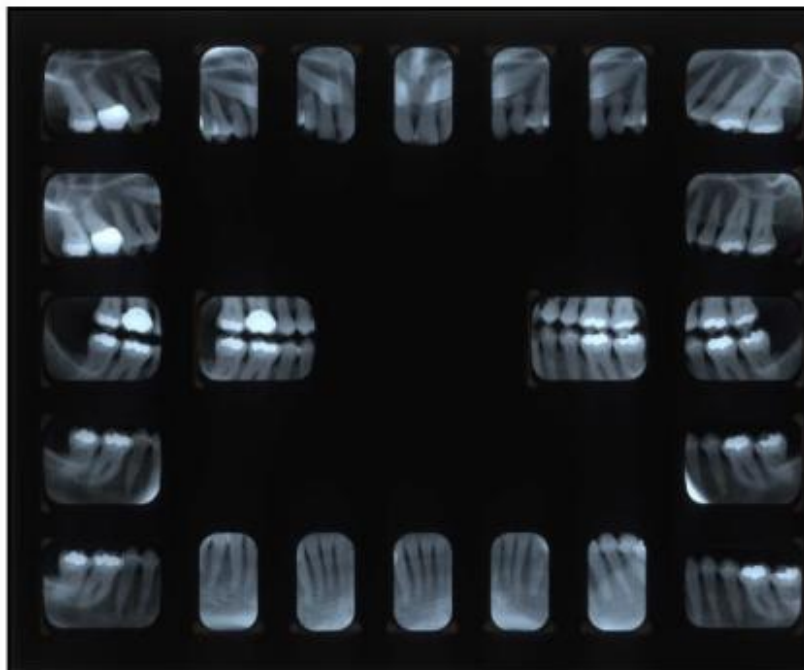
55. Case #3.1+AAs-use Praparble/Adjustable Ceramic abutment

Case #3.1
use Praparble/Adjustable Ceramic abutment



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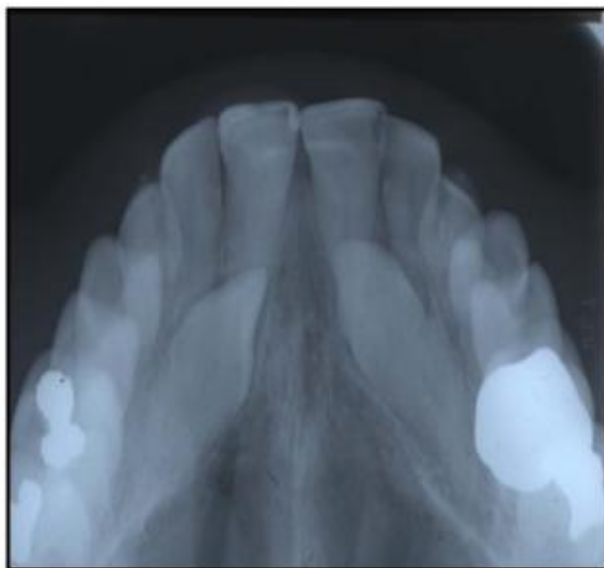
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59. Session 8: Single Tooth Implant Crowns: Slide 59



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60. Session 8: Single Tooth Implant Crowns: Slide 60



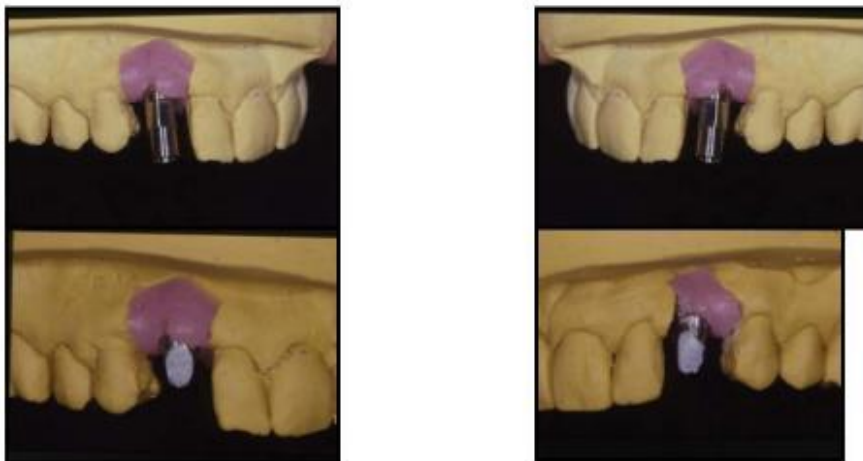
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63. Session 8: Single Tooth Implant Crowns: Slide 63



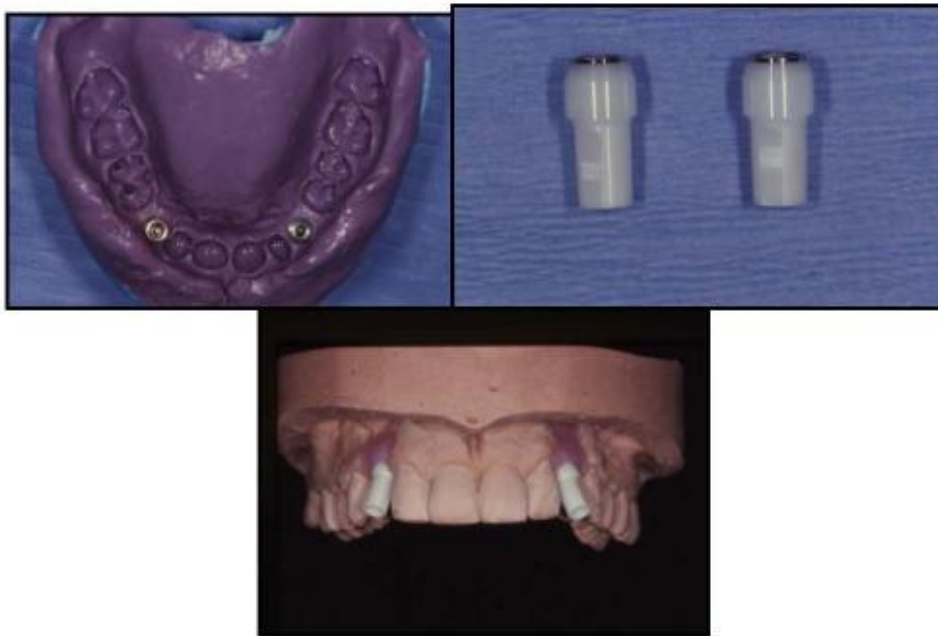
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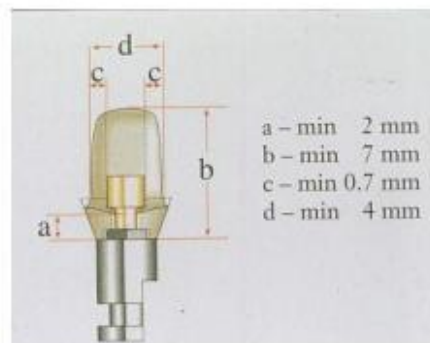
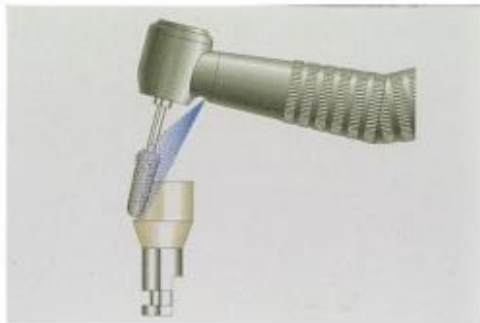
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70. Type of Single Tooth Abutment

Type of Single Tooth Abutment

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71.

Case #3.2

Case #3.2



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72.

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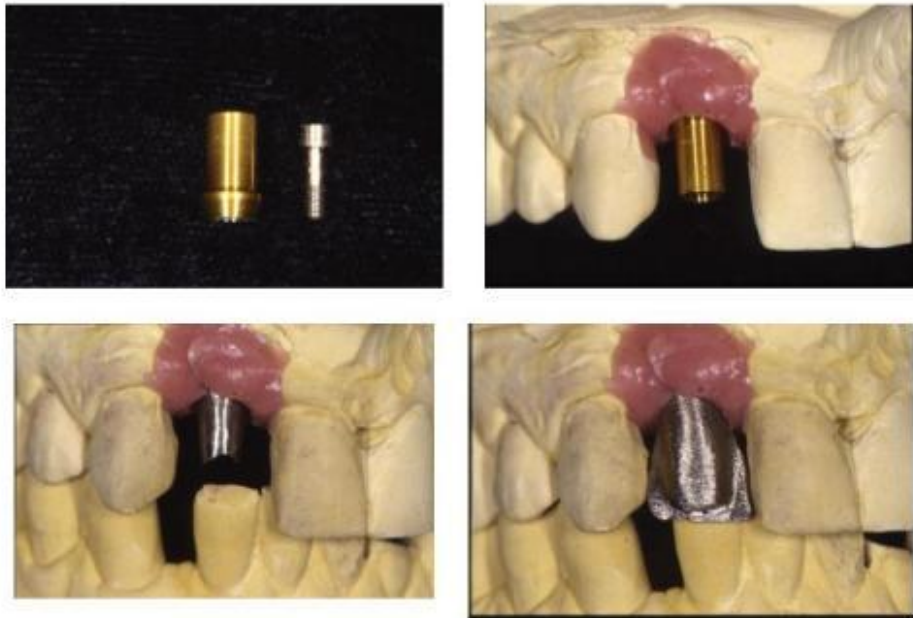
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77. Type of Single Tooth Abutment

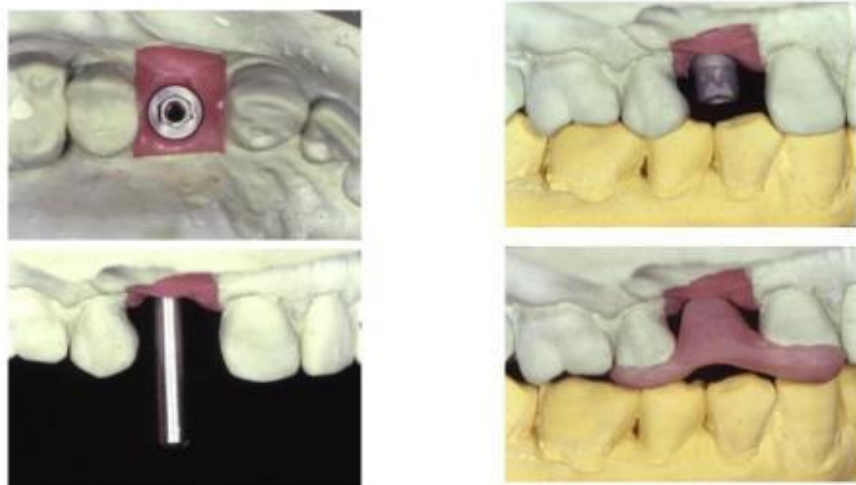
Type of Single Tooth Abutment

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78. Case #4

Case #4



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80. Type of Single Tooth Abutment

Type of Single Tooth Abutment

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- Custom cast abutment
- **Modified custom cast abutment**

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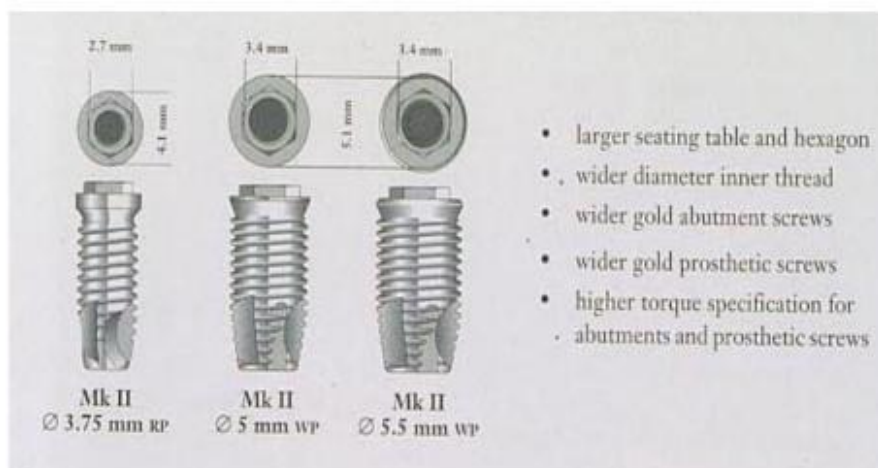
81. Wide Platform (WP) indications

Wide Platform (WP) indications

- Single tooth replacement in the molar region
- Posterior molar region where wider implant is indicated
- Must have adequate bone surround implant (minimum of 1 mm)

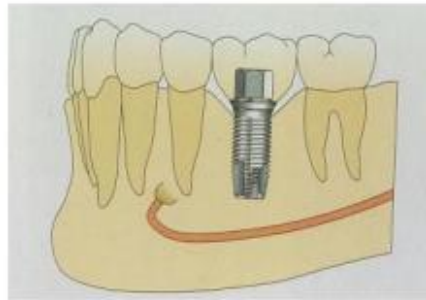
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83. Single Tooth Implant Crowns: Slide 83



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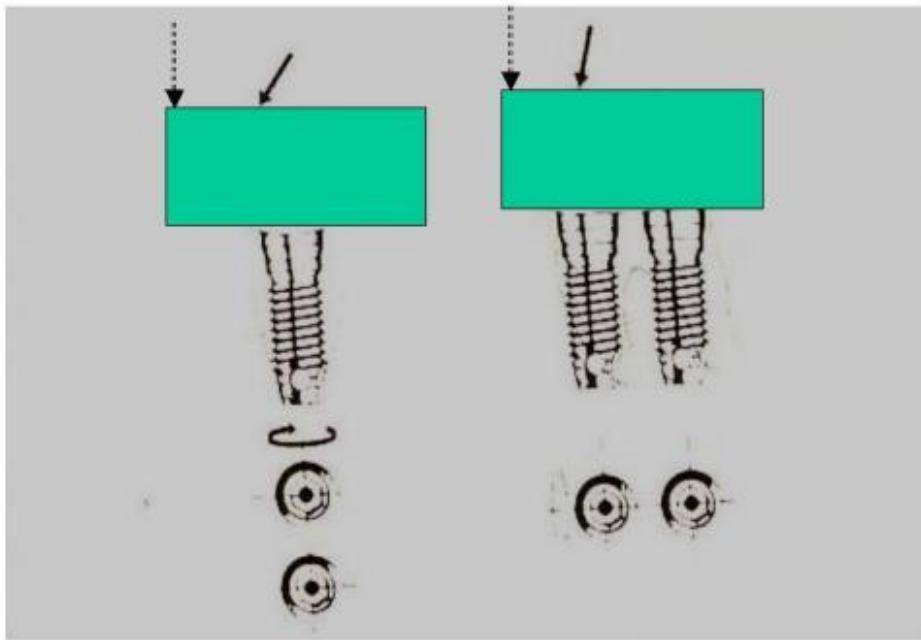
84. Research Results (1996)+AAs-1-implant VS 2-implant molar rep...

Research Results (1996) 1-implant VS 2-implant molar replacement

- Balshi—72 single molar implant crowns; 48% screw loosening with 1 implant; 8% with 2 implants
- Walther—236 maxillary anterior implant crowns; 96% success at 5 years; 89% at 10 years (periimplantitis, implant fracture or trauma)

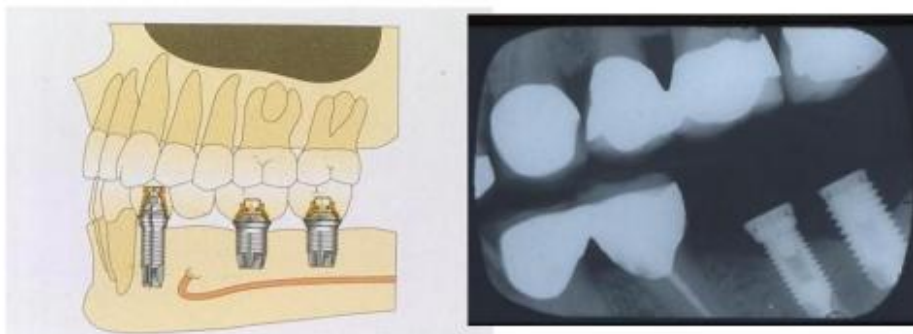
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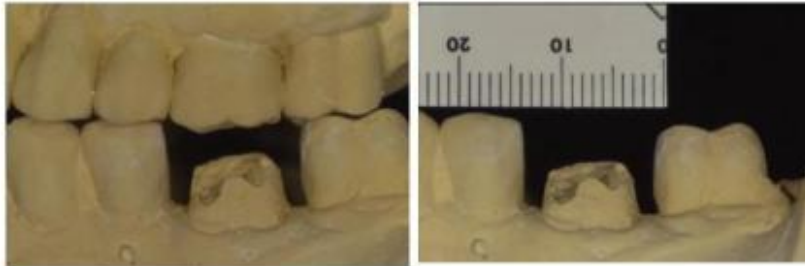


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87.

Case WP

Case WP



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88.

Case WP+AAs- use Prefabricate Screw retained abutment

Case WP

use Prefabricate Screw retained abutment



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89. Case WP+AAs- use Prefabricate Screw retained abutment

Case WP

use Prefabricate Screw retained abutment



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90. Case WP+AAs-use Prefabricate Screw retained abutment

Case WP

use Prefabricate Screw retained abutment



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91. Case WP+AAs- use Prefabricate Screw retained abutment

Case WP

use Prefabricate Screw retained abutment



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92. Maintenance/Recare

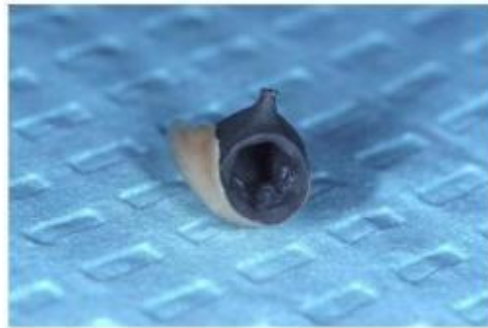
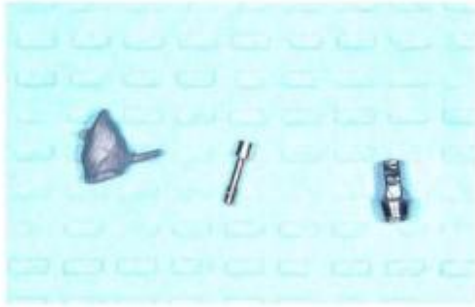
Maintenance/Recare

- Statistics of screw loosening/failure
- Potential damage of screw loosening
- How to prevent cement retained implant crown from damaging internal receiving area of the implant

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