Experiences with Narrow Body Implants

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Digital CT imaging is recommended for each IOD patient.
In addition to panoramic view, the I-CAT provides cross-sections to show mental foramen location, bone density and ridge volume/configuration.
Mini implants for denture retention
Classification System for the Completely Edentulous Patient

Class I
- Ideal or minimally compromised

Class II
- Moderately compromised

Class III
- Substantially compromised

Class IV
- Severely compromised

Diagnostic Criteria
1. Bone height--mandibular
2. Maxillomandibular relationship
3. Residual ridge morphology--maxilla
4. Muscle attachments
Type I

Residual bone height of 21mm or greater measured at the least vertical height of the mandible.
Type II

Residual bone height of 16-20 mm measured at the least vertical height of the mandible.
Type III

Residual alveolar bone height of 11-15 mm measured at the least vertical height of the mandible
Residual vertical bone height of 10 mm or less measured at the least vertical height of the mandible
Type A

Adequate attached mucosal base without undue muscular impingement during normal function in all regions.
Type C

- Adequate attached mucosal base in all regions except anterior buccal and lingual vestibules—cusp to cusp

- High genioglossus and mentalis muscle attachments
Type D

- Adequate attached mucosal base only in the posterior lingual region
- All other regions are detached
Type E

- No attached mucosa in any region
- Cheek and lip movement = tongue movement
The Implant Overdenture Program at Pacific provides basic implant services for patients with edentulous mandibles, to provide positive treatment experiences for predoctoral students.

Protocol A provides 2 standard implants, or 4 mini implants, with retrofitting of current denture, for Class 1,2 & 3 patients.
Mini Implant Manufacturers

- Imtec - MDI
- Ultimatics - MDL
- Biocon - O-ring transitional implant
- ERA
- Dentatus - MTI
  - ANEW
  - Atlas Dome keeper Implant
Immediate implant transitions are included in the IOD program.

When possible, mini implants are placed through intact soft tissue.
Mini implants have been used at Pacific to provide immediate support for transitional dentures.

In this case, an immediate denture has been fabricated and 6 anterior teeth have been extracted.
After extraction, residual crestal bone is aggressively recontoured to make flat insertion sites for mini implants.

Implant sites should be in sound mature bone - distal of canines and interseptal struts are preferable. Avoid sockets, infections & immature bone.
Implants are placed so that all threads engage bone.
The flap margins are shortened if necessary so that the implant heads protrude above tissue after suturing. The immediate denture is inserted with a soft reliner.
Post-surgical panorex and typical 10 day healing.

O-rings can be placed after soft tissue resolution (1 month), but the denture still requires reline services for 6-12 months.
Risks of Mini Implant Treatment

- Postoperative bleeding, swelling & pain
- Postoperative infection
- Implants may become loose
- Denture adjustments during and after placement
- Paresthesia
Multi-Clinic Evaluation Using Mini-Dental Implants for Long-Term Denture Stabilization: A Preliminary Biometric Evaluation

Bulard RA, Vance JB
Compendium 26:892-897, Dec., 2005
• Reported service of 1,029 IMTEC MDI mini implants

• 5 Clinics

• Length of service: 5 months to 8 years

Bulard RA, Vance JB
Compendium 26:892-897, Dec., 2005
Length of Service

- 1,029 fixtures total
- 600 fixtures ≥ 2 years
- 62 fixtures ≥ 5 years

Bulard RA, Vance JB
Compendium 26:892-897, Dec., 2005
Failure Rates

• 8.8 % overall
• 10% for service ≥ 2 years
• 11% for service ≥ 5 years

Bulard RA, Vance JB
Compendium 26:892-897, Dec., 2005
CONCLUSIONS

• Despite variables, mini implant success rates were approximately 90% for service periods up to 8 years.

• Mini implants can be effective devices for use in long-term denture stabilization.

Bulard RA, Vance JB
Compendium 26:892-897, Dec., 2005
One of the clinics (university/academic) reported a failure rate of 31% within 26 months

Bulard RA, Vance JB
Compendium 26:892-897, Dec., 2005
Migliorati CA et al: Managing the care of patients with bisphosphonate-associated osteonecrosis (BON)

“The risk for developing BON after dental extractions, implant placement, and periodontal and other surgical procedures for patients taking oral bisphosphonates such as alendronate is unknown…. At this time it appears that the incidence of BON manifesting in patients taking alendronate for osteoporosis is low”.

American Academy of Oral Medicine

position paper

JADA 136:1858 Dec’05
Indications for mini implants

- Narrow ridge
- Patient desires less financial commitment
- Transitional prosthetics
- Minimally invasive surgery desired
- Community oral health care (?)
Contra-indications for mini-implants:

- Uncontrolled social factors
- Endocrine dysfunction
- Smoking
- <15 mm. bone height
- Minimal vestibular depth
- Intravenous bisphosphonates
Originally this patient had 4 IMTEC mini implants placed. Two implants already had failed & were removed. The 2 remaining mini implants were painful & loose.
Implant Overdenture Errors

The implant at site 20 has 60% crestal bone loss and is dangerously close to the mental foramen. The center implant has 100% radiolucency.
Implant Overdenture Errors

Both implants were removed. Unfortunately, the simplicity of mini implants has encouraged a casual approach to planning, placement and prosthetic management.
Implant Errors
Not an overdenture case, but a problem developed soon after immediate placement of this mini implant into an extraction site & cementation of a provisional crown.
Implant errors

An osteomyelitis developed and severe bone loss caused the loss of all 3 incisors.
Implant Errors

A 6-unit ceramometal bridge was fabricated, with pink prosthetic gingiva over the ridge defect.

A final caution – respect the fact that implants are invasive & problems can be irreversible.
- Pretreatment
- Posttreatment

Fig. 7