Periodontal Maintenance of Dental Implants
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Periodontal Maintenance of Dental Implants

Overview:
- 1,000,000 dental implants placed in US in 2006, expected to be increasing ≈ 18% / yr
- success rates of 90-98% is reported but depends on definition of success
- most failures occur in 1st year then 1% / year
- tobacco use by the pt is single most important risk factor for failure
- MAX implants failure rates > MAND implants

Objectives:
- define components of dental implant systems
  - implant system
    - fixture
      - one-stage
      - two-stage
  - abutments
    - one-piece (aka solid or direct abutments)
    - two-piece (aka screw retained abutments)

- review of some of common implant systems
  - staple implants
  - ramus frame implants
  - cylinder type implants
  - screw type implants
    - zygomatic
    - root form

- review the differences in parameters in health from teeth and dental implants
  - attachment
  - probing depths
  - pain
  - crevicular fluid flow
  - inflammation
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- recommended oral hygiene measures for use with dental implants
  - An extension of periodontal therapy. Procedures performed at selected intervals to assist the periodontal patient in maintaining oral health. These usually consist of an oral examination, OH eval, nutrition, SCL/RP and polishing of teeth. *(AAP Glossary of Periodontal Terms; 1992:3rd Edition)*

- Definition of Periodontal Maintenance:
  - starts after completion of active perio therapy
  - continues at varying intervals for the lifetime of the dentition
  - performed by a dentist or dental hygienist under the supervision of DDS
  - Periodontal Maintenance is the preferred term
  - formerly known as Supportive Periodontal Therapy
    or Periodontal Recall or Periodontal Recare

- Biologic Rationale for Periodontal Maintenance
  - *Axelson & Lindhe*
    - it is not possible to predict when or if progression of periodontal disease will occur
    - periodontal maintenance allows for periodic monitoring and professional plaque removal
    - personal PC alone, in periodontal patients, has not been shown to control attachment loss

  - *Douglass & Fox*
    - some perio patients have progressive dz despite the best efforts of patient & clinicians
    - periodontal maintenance allows for detection of these particular patients
    - these patients may require additional diagnostic information (C&S, DNA probe) & therapy (*i.e.* antibiotic therapy)

  - *Bostanci & Arpak*
    - 10 year retrospective study of periodontal patients
    - compared patients after sx with vs without perio maintenance
    - patients that had at least periodic maintenance had few lost teeth, shallower PD, less BOP

  - *Ramfjord, Caffesse, Morrison, et al*
    - data suggest that most patients with a hx of perio dz should be maintained at least 4 x / year
    - SPT 4 x / year result in a decreased likelihood of progressive dz
    - patients that had less frequent maintenance had greater likelihood of progressive disease

- *Greenstein*
  - periodontal maintenance procedures suppress components of periodontal subgingival microflora
  - pathogens may return to baseline levels within days or months
  - return of pathogens to pre-tx levels generally occurs in approximately 9 - 11 weeks
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- **Therapeutic Rationale** for Periodontal Maintenance
  - to prevent or minimize recurrence of disease progression in patients with periodontal disease
  - to prevent or reduce the incidence of tooth or implant loss by periodic monitoring and care
  - to increase the probability of locating and treating other conditions or diseases found within the oral cavity

- **Parameters of Care** for Periodontal Maintenance.
  (AAP Parameters of Care on Periodontal Maintenance. JP 2000;71:849-850)

A) **Update medical & dental history**

B) **Clinical Examination**

1) extra-oral examination

2) intra-oral examination
   a) soft tissue examination
   b) oral cancer examination

3) dental examination
   a) tooth mobility, fremitus, occlusion
   b) caries
   c) restorative factors
   d) other factors

4) periodontal examination
   a) probing depth
   b) bleeding upon probing
   c) presence of plaque & calculus
   d) furcations
   e) exudate & other S&S of disease
   f) microbial testing if indicated
   g) gingival recession
   h) attachment levels

5) dental implant examination
   a) probing depth
   b) bleeding upon probing
   c) presence of plaque & calculus
   d) prosthesis component
   e) implant stability
   f) occlusal evaluation
   g) other S&S of disease
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C) Radiographic Examination
   (1) current radiographs
   (2) radiograph number & frequency

D) Assessment of Disease Activity

E) Radiographic Examination

F) Maintenance Treatment Procedures
   (1) removal of plaque & calculus
   (2) behavioral modifications
      a) oral hygiene instructions
         - Sonicare™ toothbrush
         - Colgate® Total®
      b) compliance with preventive maintenance intervals
      b) risk factor counseling
   (3) scaling & root planing if indicated
   (4) occlusal adjustment if indicated
   (5) use of anti-microbial agents / irrigation
   (6) use of root desensitizers if indicated
   (7) surgery if indicated

G) Communication

H) Planning

* Periodontal Maintenance of Dental Implants
   (1) presence of plaque or calculus
   (2) clinical appearance of peri-implant tissues
   (3) radiographic appearance of implant structures
   (4) stability of prostheses and implants
   (5) probing depths
   (6) occlusal evaluation
   (7) presence of bleeding or exudate
   (8) patient comfort
   (9) maintenance interval
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* Implant Maintenance Treatment Recommendations
  1. use plastic instruments, including ultrasonics (judicious use of metal if indicated)
  2. air powder abrasives are ok if indicated
  3. polishing with rubber cup with fine paste
  4. subgingival irrigation

* Conclusion

  implants are increasingly our best treatment alternative
  implants must be maintained as must teeth
  maintenance of dental implants differs from that of natural teeth
  once a dental implant begins to lose bone it will eventually be lost
  (maybe . . . . )