Maintenance of Dental Implants

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Beautiful teeth now!
Reality?
Peri-implant diseases are common
- 80% peri-implant mucositis
- 20% peri-implantitis

Aetiology for peri-implant disease is the presence of a bacterial biofilm

Risk factors for peri-implant diseases are very similar to periodontitis risk factors

Treatments are primarily based on anti-infective therapy

What does this mean for implant success?
1. poor oral hygiene
2. history of periodontitis
3. smoking
Biological principles
Biological Width
Subgingival plaque and loss of attachment in periodontosis as observed in autopsy material.

Waerhaug J. 1976 J Perio
Apical Epithelial migration

Inflammatory Infiltrate
Long-standing plaque and gingivitis at implants and teeth in the dog.

Histopathological observations of human periimplantitis lesions.

Immunological Differences

- Many more PMNs
- Less plasma cells and lymphocytes
- Concluded that the peri-implant lesion was less immunologically regulated
Peri-implant soft tissues
Peri-implant soft tissues
implant sites with less than 2mm of keratinized tissue showed significantly more BOP and bone loss

Bouri et al. JOMI 2008
Augmentation
Cementitis
Cleansable Restorations

- Adjust Prosthesis
- Plaque Control
- Biofilm Removal
Interproximal Cleaning
Interproximal Cleaning
Implant Configuration
Implant Configuration
Surfaces
Patients with Periodontitis
Patients with Periodontitis
Choice of Restoration
Choose the right restoration for your patient
Choose the right restoration for your patient
Establish practice protocols

- A baseline assessment at 3 months
  - Probing depths
  - Bleeding on probing
  - Occlusion
- Re-assess every 3 months for the first year
- Radiograph at baseline (3 months) and again at 12 months
- Radiographs every 1-2 years depending on clinical findings (5mm PD and BOP) and maintenance frequency
Peri-Implant Diseases

Prevention

Therapy

Diagnosis
Peri-implant Mucositis

- Clinical Presentation
  - Usually Plaque accumulation
  - Redness
  - Swelling
  - Bleeding on Probing
  - No bone loss
Peri-implantitis
Metal Probes used appropriately do not damage implant surface

Probing using a light force (0.25 N) does not damage the peri-implant tissues.

BOP indicates presence of inflammation and may also be an indicator of disease progression (Lang et al. 2000)
Probing
Increasing probing depth over time is associated with bone loss
Probing
Radiographic Exam
Differential Diagnosis
Differential Diagnosis
Peri-Implant Diseases

Prevention

Diagnosis

Therapy
PROTOCOL FOR TREATING PERI-IMPLANT MUCOSITIS

1. Mechanical scaling of implant surface with plastic, titanium or carbon fibre or ultrasonic instruments.
PROTOCOL FOR TREATING PERI-IMPLANT MUCOSITIS

2. Apply gauze strips soaked with chlorhexidine (0.2 per cent) to any exposed implant surface
3. Sub-mucosal circumferential irrigation of the implant pocket with 5ml chlorhexidine (0.2 per cent).
Peri-implantitis

Peri-implantitis is a destructive inflammatory process around implants, leading to the loss of supporting bone (Albrektsson, 1993).
Nonsurgical Therapy
Nonsurgical Therapy

- Mechanical instrumentation is difficult and often insufficient to resolve disease

Limitations

- Accessibility
- Implant configuration
- Implant surface structure
- Soft tissue conditions
- Defect configuration
- Amount of bone loss
SURGICAL PROTOCOL FOR TREATING PERI-IMPLANTITIS
1. Full thickness muco-periosteal flap.
2. Thorough debridement of the implant surface with titanium curettes.
3. Pack gauze strips soaked in chlorhexidine placed around implant defect for five minutes.
4. Decontaminate surface with EDTA (straumann™) for 2 mins.
5. If possible, graft defect with hydroxyapatite bone mineral.
6. Place barrier membrane if dehiscence or unprotected defect.
7. Systemic antibiotics for five days post-operatively.
Defect Morphology

Access Surgery

- 4 walls
  - Regeneration with bone substitute only
- 3 walls
  - Regeneration with bone and membrane
- Dehisence
- 2 walls
  - Resective therapy with apically positioned flap
- 1 wall
Home Care
Prosthetically driven implant placement
Biologically driven implant placement
Next Lecture
22nd November