

Biological Complications of Dental Implant

A decorative graphic consisting of several parallel white lines of varying lengths, slanted diagonally from the bottom-left towards the top-right, set against a dark brown background.

Biological Complications affect the tissues supporting the implant and prosthesis.



Peri-implant mucositis



Peri-implantitis

Commonly reported biological complications include:

- Peri-implant mucositis
- Peri-implantitis
- Fistulae
- Soft tissue hyperplasia



Peri-implant Mucositis

Is a **reversible** inflammatory lesion, similar to gingivitis, affecting the marginal soft tissues surrounding Osseointegrated dental implants and is not associated with peri-implant bone loss.



Peri-implant mucositis associated with implant retained crown UR1

Peri-implant Mucositis

Peri-implant mucositis may affect up to 50% of implants and is characterized by bleeding on probing.



Peri-implant mucositis associated with implant retained crown UR1

Peri-implant Mucositis

Peri-implant mucositis usually resolves with improved homecare, antiseptic mouthwash and careful mechanical cleaning.



Peri-implant mucositis associated with implant retained crown UR1

Peri-implantitis

Is an inflammatory lesion, similar to periodontal disease, affecting the supporting bone in addition to the soft tissues around an implant.



Retained cement associated with implant crowns UL1 &UL2

Peri-implantitis

Peri-implantitis is characterized by marginal bone loss and may be associated with bleeding on probing, suppuration, pocket formation and mucosal recession.



Retained cement associated with implant crowns UL1 &UL2

Peri-implantitis

Marginal bone loss during the first year of function is attributed to remodeling and peri-implantitis cannot be diagnosed until after this time.



Retained cement associated with implant crowns UL1 &UL2

Peri-implantitis

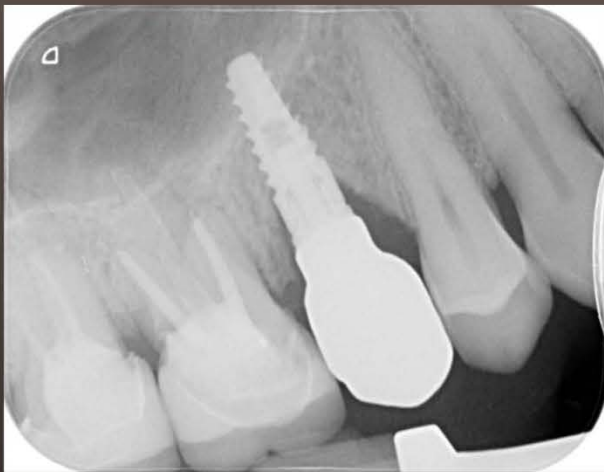
Supposed risk factors for peri-implantitis include smoking, diabetes mellitus, poor oral hygiene, a history of periodontal disease, alcohol, rough surfaced implants, retained cement, and poorly fitting abutments or superstructures.



Peri-implant bone loss UL1 & UL2 visible following mucoperiosteal flap elevation

Peri-implantitis

Peri-implant pocket depths and radiographic bone levels should be established. Probing depths are generally greater around implants than teeth and a probing depth of 6 mm is not uncommon in health.

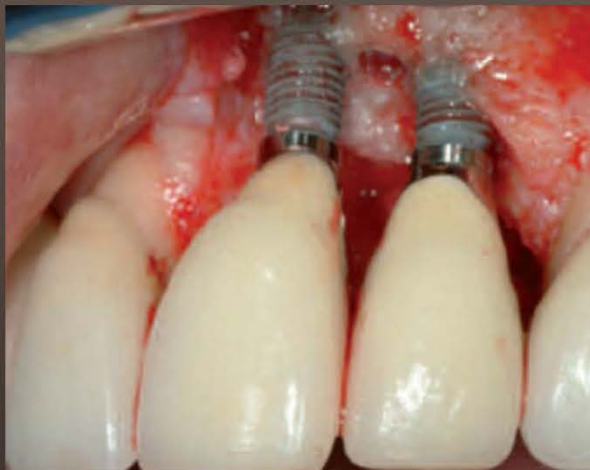


Peri-implantitis manifests itself in the form of crestal bone loss



Peri-implantitis

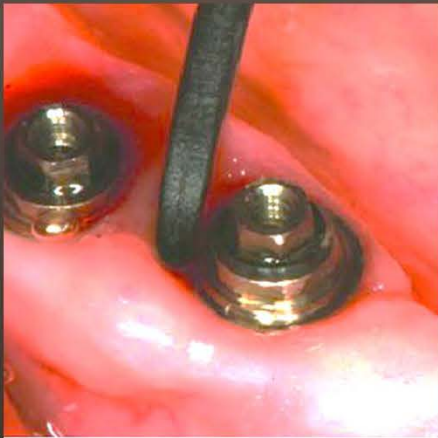
There is little evidence to approve either the non-surgical or surgical management of peri-implantitis. However, a surgical approach is often preferred as it offers improved access.



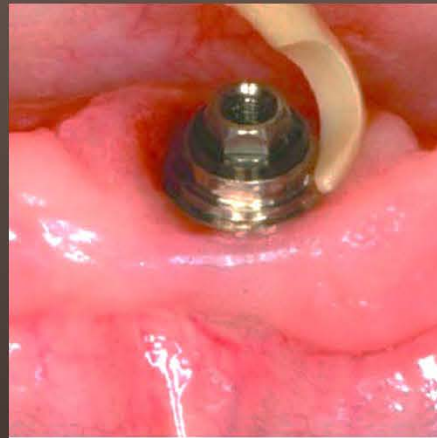
Peri-implant bone loss UL1 & UL2 visible following mucoperiosteal flap elevation

Peri-implantitis

Implant surfaces may be cleaned mechanically, chemically, by laser or air abrasion. No single method of surface debridement has been shown to be superior. Where mechanical debridement is undertaken, plastic or titanium curettes have been recommended to avoid damaging the implant surface.



Debridement of peri-implant biofilm using a carbon-fiber curette.



Debridement of peri-implant biofilm using a plastic curette.



Debridement of implant biofilm using a titanium curette.

Peri-implantitis

Guided bone regeneration may be used in combination with surgical debridement. Studies suggest that surgical debridement may be successful in 60-100% of cases.



Peri-implant bone loss UL1 & UL2 visible following mucoperiosteal flap elevation

Soft Tissue Hyperplasia

Hyperplasia of the peri-implant tissues represents an **over-exaggerated response** to plaque accumulation and may be associated with poor oral hygiene, framework misfit, dead space beneath frameworks and a lack of attached gingivae.



Hyperplasia of the peri-implant soft tissues associated with the distal aspect of an ill-fitting lower implant retained bridge

Soft Tissue Hyperplasia

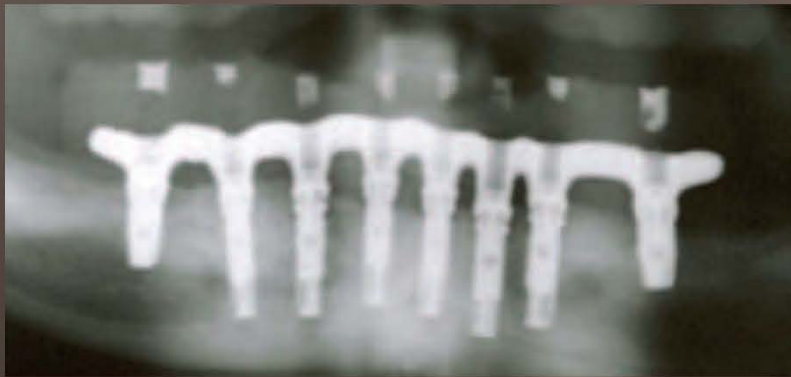
Hyperplasia usually resolves following correction of predisposing factors, improved oral hygiene and mechanical debridement. However, it may occasionally be necessary to surgically resect the hyperplastic tissue.



Hyperplasia of the peri-implant soft tissues associated with the distal aspect of an ill-fitting lower implant retained bridge

Soft Tissue Hyperplasia

The use of electrosurgery is discouraged in these situations as there may be accidental heating of the implant-bone interface.



Radiograph shows the superstructure which is ill fitting at LR3, LL3 & LL4 sites



The full extent of soft tissue hyperplasia is revealed following removal of the superstructure



Fistulae

Fistulae have been reported at the level of the implant-abutment interface and they are usually associated with loose abutments screws or ill-fitting frameworks.



Fistula associated with a loose abutment screw UL2

Fistulae

These fistulae usually resolve following removal of the prosthesis, irrigation with 0.2% chlorhexidine gluconate (Corsodyl, GlaxoSmithKline) and replacement of the prosthesis at the correct torque.



Fistula associated with a loose abutment screw UL2

REFERENCES

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ANY QUESTION

