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“Monday Morning Pearls of Practice by Bobby Baig”

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Peri-implant Lesions:

Introduction:

The prevalence of soft tissue complications around implants has been reported to occur between 1 and 7 percent and the most frequently reported is fenestrations and fistula formation. Fig 1. Infections around implants can occur at any time during treatment.

Common Reasons: The most common reasons for abscess formation around implants are:

1. Screw or abutment loosening.
2. Retained cement
3. Peri-implantitis.
4. Implant failure.

Implant Components: Components attached to an implant fixture often become loose.

1. This includes the prosthetic abutments as well as the cover screws and healing abutments prior to prosthesis delivery.
2. The micro gap between components often harbors bacteria and if components become loose, further colonization can occur.
3. Microbes entrapped within this gap can cause infection and fistula formation.
4. Initial treatment of these types of infections involves removal, decontamination and proper reattachment of the components.
5. Surgical debridement with or without tissue reconstruction may be indicated in situations where tissue damage has occurred.
6. The incidence of this problem can be reduced with careful adjustment of tissue-supported provisional restorations resting against healing screws and abutments during the healing phase, and appropriate component use including a torque wrench during final prosthesis delivery.
7. Incomplete cement removal is a common problem with cement-retained restorations. Fig 2.



Fig 1: Soft tissue fenestration over implant.



Fig 2: Subgingival cement retention. (Caplanis et al 2012)

8. The trapped cement can become foci for infection and can lead to peri-implant disease and even implant loss.
9. Detection of retained cement can be elusive even with radiopaque cements.
10. Subgingival cement on the buccal or lingual surfaces of an implant is not detectable radiographically and clinical detection can be difficult even with supragingival margins.
11. Patients with a history of periodontitis may be more susceptible to cement- induced peri-implant disease.
12. Treatment of this complication obviously involves removal of the cement, which at times requires an open flap procedure for access.
13. As with all surgical reentry procedures around implants, soft tissue esthetics can be compromised following surgery. Therefore, avoidance of cement retention is key.

Retained Cement:

1. Various cementation techniques have been proposed to reduce the incidence of cement retention.
2. Careful clinical and radiographic evaluation post cementation is required and a one- to two-week follow-up is recommended following prosthesis delivery.
3. Unexplained inflammation and bleeding upon probing during the initial follow-up visit often indicates cement retention.
4. Avoiding cements altogether through the use of screw-retained restorations eliminates this risk.
5. It is apparent, however, that further improvement of clinical protocols for better cement removal is needed. Fig 3-5.



Fig 3

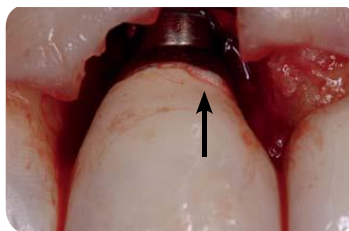


Fig 4



Fig 5

Fig 3-5: Subgingival cement along the abutment-crown interface, leading to a buccal fistula and crestal bone loss requiring surgery for removal causing minor soft tissue esthetic compromise (Caplanis et al 2012).

6. Demonstrate a fistula over an implant as a result of subgingival cement retention. After unsuccessful nonsurgical debridement, the cement was removed with an open flap surgical procedure using an air-abrasive device. Slight recession and minor loss of papilla occurred as a consequence of surgical re-entry.

Diagnosis, Etiology and Treatment of Peri-implantitis:

1. It is widely accepted that bacterial-induced peri-implant diseases can lead to bone loss as well as acute infections and fistula formation.
2. Treatment of acute infections caused by peri-implant disease involves a similar protocol followed for

teeth where drainage is initially established followed by removal of the infection source and surgery to reconstruct tissue damage if needed.

3. Surgery around implants to treat these problems can lead to esthetic compromise.
4. Studies suggest that patients with periodontitis have an increased risk of developing peri-implant disease. Therefore, establishment of periodontal health in the partially edentulous patient, prior to implant placement, is strongly advised to prevent these types of complications.
5. It can be argued that patients with active or recalcitrant periodontitis are not even appropriate candidates for implant therapy.

Implant Failure:

1. It can occur at any time during treatment.
2. Early failures are usually attributed to inadequate diagnosis, improper surgical technique or trauma. Late failures, in contrast, are usually a result of inadequate osseointegration, peri-implant disease or overload.
3. As an implant fails, loss of bone occurs and infections can develop.

Case Report :(Caplanis et al 2012).

1. Patient presented with a fistula that developed shortly after final abutment connection and placement of a provisional. Cement retention was suspected. Fig 6-9.



Fig 6



Fig 7



Fig 8



Fig 9

Fig 6-9: Subgingival cement leading to severe bone and implant loss and an extremely compromised site as a consequence. (Caplanis et al 2012)

4. Upon removal of the provisional, the implant was also found to be mobile due to cement-induced bone loss and therefore removed.
5. The site was grafted using a mineralized allograft in conjunction with a resorbable membrane to prepare for a second implant procedure.
6. Despite what appeared to be a routine and successful site preservation procedure, severe resorption of the buccal plate occurred, which would not allow for another implant without additional ridge augmentation surgery.
7. The patient, having already undergone multiple surgeries — including a site preservation procedure at the time of tooth removal, placement of the initial implant, and removal of the implant with another site preservation procedure — elected not to have additional surgery and instead pursued a conventional bridge.

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