



Dental Hygienist's Role in Assessing Peri-Implantitis

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ABSTRACT

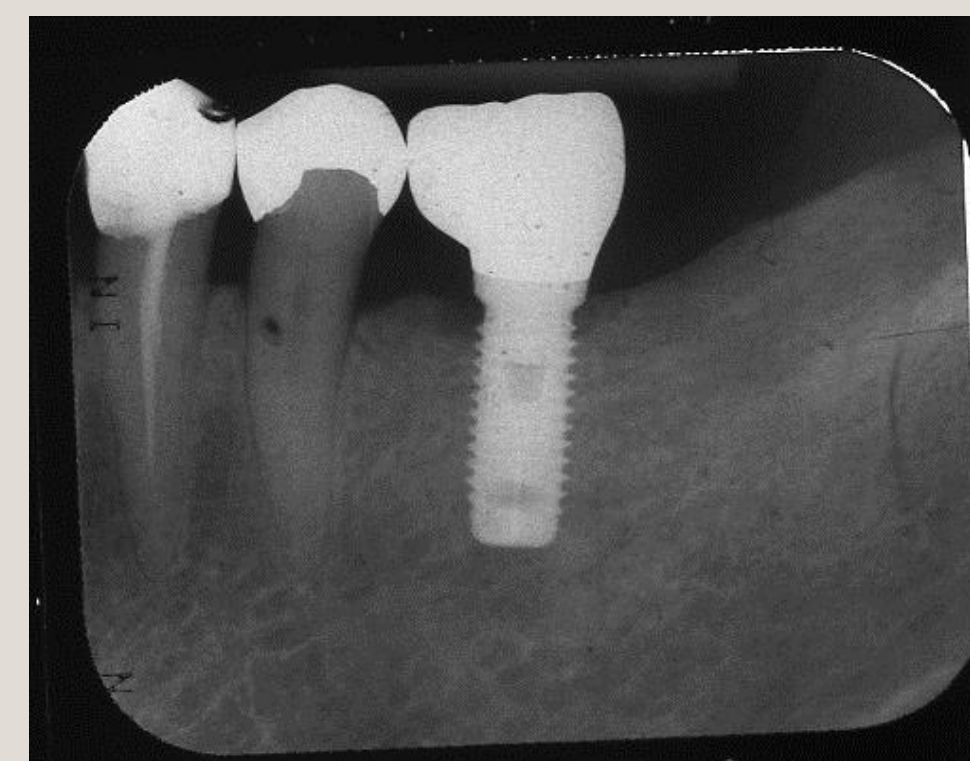
The objective of this clinical case presentation is to discuss peri-implantitis due to its increasing prevalence in dental hygiene practice. Assessment: A 79 year old Caucasian female presented to the Dental Hygiene Clinic for periodontal maintenance and a dental exam. The medical history reveals a history of hypertension, atrial fibrillation, and the patient is taking Coumadin. The patient presented with generalized mild plaque-induced marginal and papillary gingivitis, however, the gingiva around the implant replacing #19 showed moderate gingival inflammation as evidenced by dark pink, bulbous, and spongy tissue with moderate bleeding on probing (BOP). The patient also presented with generalized chronic periodontitis as evidenced by 4-5mm clinical attachment level (CAL). Peri-implantitis was diagnosed on the implant with 6-9mm probing depths, 85% bone loss present on radiographs, and suppuration. DH Care Plan: Routine periodontal maintenance, oral hygiene instruction, and referral to the Graduate Periodontics Clinic for further evaluation of the implant. Follow up: The implant was diagnosed with a hopeless prognosis and scheduled for removal in the Graduate Periodontics Clinic. However, before the scheduled extraction, the patient reported that the implant had "fallen out" and it was not present at the 3 month periodontal maintenance appointment. Conclusion: Early recognition and intervention of peri-implant mucositis and peri-implantitis is crucial for the survival of the implant. Once peri-implantitis has reached an advanced stage, the prognosis of the implant is very poor and may require surgical treatment.

CLINICAL CASE PRESENTATION

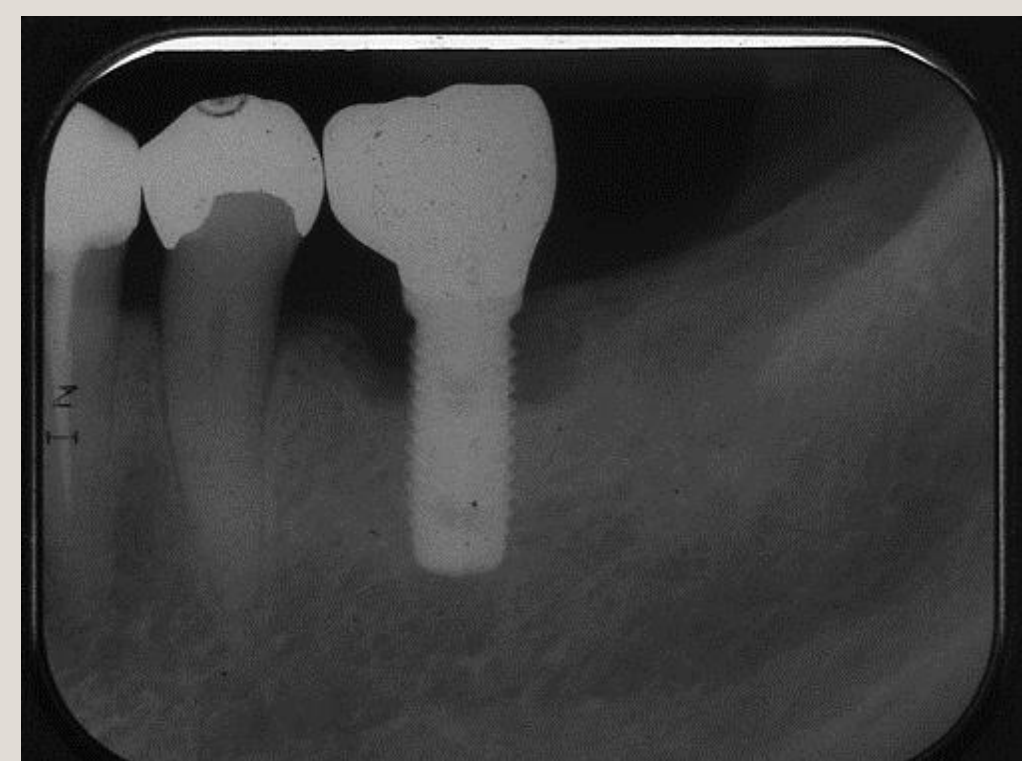
A 79 year old Caucasian female presented to the Dental Hygiene Clinic for periodontal maintenance and a dental exam. The medical history reveals a history of hypertension, atrial fibrillation, and the patient is taking Coumadin. A review of the treatment notes showed that tooth #19 was replaced by an implant in the Graduate Periodontics Clinic in 2002. In 2006, the tissue around the implant presented with bleeding on probing (BOP), suppuration, and bone loss. The patient was referred for treatment in the Graduate Periodontics Clinic where a tissue flap procedure with periodontal debridement of granulation tissue around the implant was completed. Following this procedure, the implant showed signs of healing, but in 2008, severe inflammation and probing depths of 6 mm were noted and the implant showed signs of failing. In 2013, the patient presented in the Dental Hygiene Clinic with sensitivity around the implant which progressed to a dull, periodic aching pain and increasing bone loss on radiographs. The patient was seen in the Dental Hygiene Clinic in 2014 for routine periodontal maintenance and a dental exam. At that time, the patient presented with generalized mild plaque-induced marginal and papillary gingivitis as evidenced by pink, rolled margins with blunted papillae, and mild BOP with moderate gingival inflammation around the implant replacing #19. The patient also presented with generalized chronic periodontitis as evidenced by 4-5 mm clinical attachment level (CAL). Peri-implantitis was diagnosed on the implant with 7-9 mm probing depths on the lingual surface and 6-7 mm probing depths on the buccal surface, severe bone loss on radiographs, mobility, and suppuration.

Radiographic Evidence of Peri-Implantitis

Early Bone Loss
1 year after placement



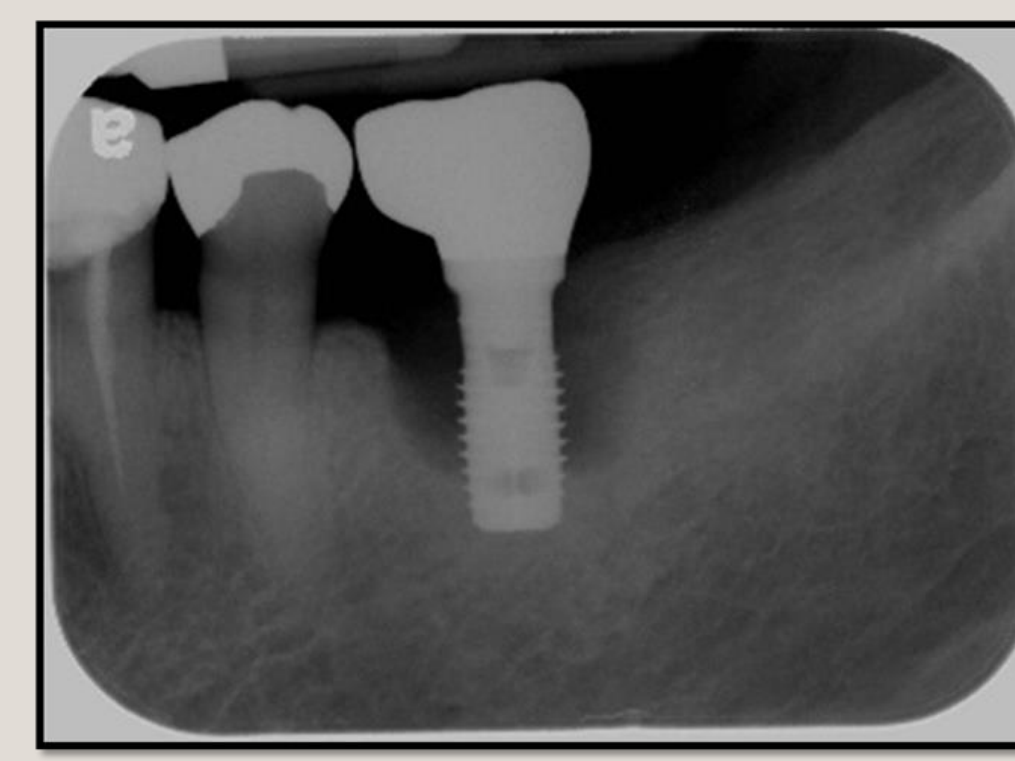
Moderate Bone Loss
4 years after placement



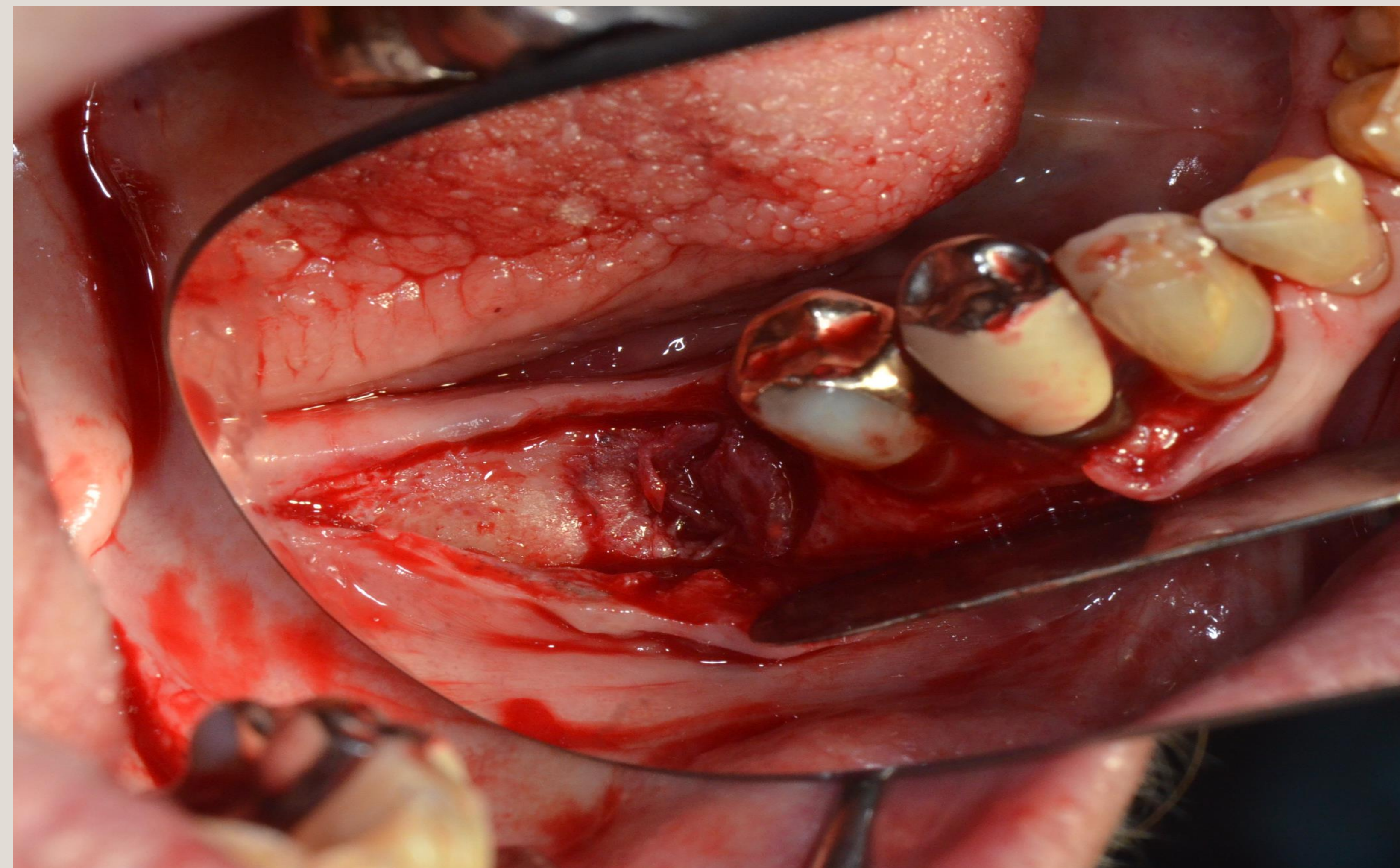
Moderate Bone Loss
6 years after placement



Advanced Bone Loss
12 years after placement



Granulation Tissue at Previous Implant Site



DISCUSSION

Dental implants are becoming a popular treatment option for the replacement of missing teeth, however there is also growing concern due to the increasing prevalence of peri-implant mucositis and peri-implantitis. Therefore, the dental hygienist's ability to recognize peri-implant mucositis and peri-implantitis and control local factors that may contribute to it, is important for implant success. "Recent reports have shown that peri-implant mucositis was present in 48% of implants from 9 to 14 years after placement. The prevalence of peri-implantitis from various studies ranges from 6.61% over a 9-14 year period to 36.6% with a mean of 8.4 years after loading."¹ Peri-implant mucositis is reversible with early intervention and therefore early recognition is important.⁵ It is characterized by inflammation of the soft tissues surrounding the implant with no bone loss present, and nonsurgical periodontal therapy is the first line of treatment.^{2,5} Peri-implantitis, however, is irreversible and is characterized by soft tissue inflammation in addition to alveolar bone loss surrounding the implant.⁵ The dental hygienist's role in properly identifying and managing early stages of peri-implantitis is crucial for the survival of the implant. This case presentation shows a steady progression of bone loss around the implant that replaced #19 as evidenced by radiographs taken from baseline in 2002 to implant failure in 2014. Although we do not know the reasons this implant failed, there are many risk factors that may contribute to the loss of implants. These risk factors include: poor plaque control, retained cement, periodontal disease, reduced bone volume, genetics, trauma from occlusion, and systemic risks.⁴ The systemic risks include smoking, diabetes, osteoporosis, bisphosphonate therapy, and radiation treatment.⁴ Dental hygienists play a critical role in early recognition and assessment of early implant complications through radiographic interpretation and intraoral evaluation.² Intraoral evaluation protocol includes assessment of mobility, whether calculus or excess cement is present, circumferential probing, and bleeding on probing.⁶ If it is suspected that peri-implantitis is present based on the Froum/Rosen classification system³, immediate referral to a periodontist should be done for further evaluation and treatment.

CONCLUSION

Early recognition and intervention of peri-implant mucositis and peri-implantitis is crucial for the survival of the implant. Once peri-implantitis has reached an advanced stage, the prognosis of the implant is very poor and may require surgical treatment.

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* Noted on two or more aspects of the implant

**Measured on radiographs from time of definitive prosthesis loading to current radiograph. If not available, the earliest available radiograph following loading should be used. ³

