

Extra-Oral Fistula Caused by a Dental Implant

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Dental implantation has become an important procedure for both dental treatment and head and neck reconstructive surgery. However, this useful technique sometimes results in peri-implantitis. We describe a rare complication of peri-implantitis in the maxilla which extended to the soft tissue and caused an extra-oral fistula above the alar region. The patient underwent the placement of dental implants in the maxilla 8 years earlier. Radiography showed osteolysis of the maxilla and implant exposure. After the implants were removed, the patient was fitted with a conventional fixed partial denture. Such unfavorable outcomes are caused by failed endodontic and apicoectomy procedures.

Key Words: *extra-oral fistulae, dental implant, implant-associated periapical lesions, peri-implantitis*

INTRODUCTION

Dental implantation has become an important procedure for both dental treatment and head and neck reconstructive surgery.¹ However, this useful technique sometimes results in peri-implantitis, of which chronic inflammation usually causes osteolysis around the implant.² Many investigators have evaluated clinical and microscopic features of implant-associated periapical lesions, and the types of complication assessed were as follows: implant loss, sensory disturbance, soft tissue

complications, peri-implantitis, bone loss, and implant fracture.^{3–4}

We present a rare case of peri-implantitis due to implant-associated periapical lesions of the maxilla, which extended to the soft tissue and resulted in an extra-oral fistula.

CASE REPORT

A 72-year-old woman consulted the Department of Plastic and Reconstructive Surgery of our hospital complaining of a facial fistula of 6 months duration. On examination, a 2.0 × 1.5-cm skin fistula was found in the maxilla above the alar region. The skin around the fistula was contracted and irregular, causing a depressed deformity (Figure 1). No pain, skin inflammation, or discharge from the fistula was present. The patient had undergone the placement of 3 screw-shaped titanium dental implants in the frontal region of the maxilla 8 years

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FIGURE 1. View of the fistula. A 2.0 × 1.5-cm skin fistula was found in the maxilla above the alar region.

previously. Radiographs showed a maxillary bone defect around the implants (Figure 2). CT scans showed radiolucency of the maxillary bone and implant exposure (Figure 3). The implants were removed, and intraoperative examination revealed chronic inflammation in both the bone and soft tissue around the implants. After implant removal, the patient was fitted with a conventional 3-unit fixed partial denture.



FIGURE 2. Radiography showed a maxillary bone defect around the implants (arrow).



FIGURE 3. CT scan showed osteolysis of the maxillary bone and implant root exposure.

DISCUSSION

Osseointegrated implants provide restorative support for crowns, prosthesis abutments, and removable dentures. Implants are also required for patients who have undergone palatomaxillary reconstruction with vascularized bone-containing free flaps.¹ For these reasons, plastic and craniofacial surgeons are familiar with dental implants. However, dental implantation sometimes results in peri-implantitis. This chronic inflammatory reaction causes peri-implant apical radiolucencies around long implants placed in dense bone, and have been called implant-associated periapical lesions.^{5,6} These unfavorable outcomes are thought to be caused by failed endodontic and apicoectomy procedures, including bone overheating, instability, overloading, contamination, residual root particles, and maxillary sinus infection.^{5,6}

Many cases of peri-implant bone loss have been reported, and patients' complaints have included swelling of the maxilla, pain, tenderness, and a fistulous tract in the gingival mucosa.^{3–5,7} Our patient presented with a depressed deformity and irregularity of the facial skin as a result of an extra-oral fistula caused by a severe implant-associated

periapical lesion, which was thought to be rare based on previous literature.

Concerning treatment, some investigators have recommended only the removal of inflamed granulation tissue and cleansing of the implant surface to remove bacteria.^{7,8} However, a chronic infection will not heal as long as foreign bodies are present. Piattelli et al⁵ reported a patient with peri-implantitis in whom a chronic infection did not heal until the implant was eventually removed. They also suggested the necessity of removing part of the implant to perform a complete cleansing of the affected tissue.⁹ On the other hand, Aydinli et al⁷ investigated infections occurring with 174 spinal operations and found that 3 late reactions were not bacterial infections but rather foreign body reactions around implants.⁷ They concluded that metallic debris may cause a foreign body reaction, which resolves after debridement and implant removal. We also believe that total implant removal and the aggressive debridement of necrotic tissue, including nonviable bone, are essential for the early healing of implant-associated periapical lesions.

CONCLUSION

We presented a rare complication of peri-implantitis in the maxilla which caused an extra-oral fistula. Such unfavorable outcomes are thought to be caused by failed endodontic and apicoectomy procedures. Total implant removal is desirable for the

treatment of implant-associated periapical lesions.

NOTE

The authors herewith certify that they have no financial, academic, or personal relationships with any companies that produce or market products or services relevant to the topic of this manuscript.

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