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Peri-implant Primary Squamous Cell Carcinoma: A Case Report With 5 Years' Follow-Up

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Osseointegrated dental implants have been shown to provide predictable and successful treatment in the replacement of missing teeth and to have no deleterious effect.[1] These characteristics led to the widespread use of dental implant placement and its increasing popularity. An inflammatory and immune response in the soft tissues surrounding oral implants can exist and may lead to the progressive destruction of the tissues supporting an implant (ie, peri-implantitis) and, ultimately, implant failure. Few patients receiving dental implant placement will have coincident oral lichen planus (OLP), a common mucocutaneous disease that evolves in the form of episodic flare-ups. OLP is an autoimmune disease with an inflammatory origin and chronic progression that affects 0.2% to 1.9% of the population and is more common in women. The ages of affected patients range from 30 to 70 years. One study suggests that chronic inflammation and wound healing increase the likelihood of cancer-forming gene mutation in OLP[2]; accordingly, the occurrence of oral squamous cell carcinoma (OSCC) in relation to implants should also rise.[3] However, because the occurrence of OSCC around dental implants is generally associated with well-known risk factors, such as a history of oral cancer and smoking,[4,5] the carcinogenic role of endosseous implants has not been clarified.[6] The risk of OSCC in the presence of OLP and dental implants remains to be assessed. Several studies highlight a possible association between OLP and OSCC.[7-9] However, to our knowledge, the occurrence of OSCC around titanium dental implants in patients with OLP and no history of previous malignancy or smoking has not been reported in the literature. We report a case of primary OSCC around a dental implant in a 51-year-old Italian woman with OLP and no history of oral cancer or smoking.

Case Report

In April 2002, a 51-year-old woman underwent a consultation for the replacement of missing right mandibular teeth with dental implants. Her medical history showed chronic cutaneous and plaque-type OLP immunosuppressive therapy on a long-term basis with prednisone, 30 mg daily. The patient admitted to having previous OLP lesions localized to the left side of the mouth but denied a history of previous malignancies, smoking, or alcohol consumption.

In May 2002, stage 1 of the patient's treatment involved placement of two endosseous titanium implants. The postoperative period was uneventful, and the fixtures supported a fixed bridge after three months. Two-year clinical and radiographic follow-up did not show soft tissue changes or bone loss. After this visit, the patient discontinued her regular follow-up.

In June 2006, the patient returned to our clinic complaining of pain, gingival bleeding, and difficulty chewing on the right side of her jaw. A panoramic radiograph showed an ill-defined radiolucent area with margins resembling peri-implantitis that extended from the right mandibular lateral incisor to the mesial implant. The osteolytic area did not showed close proximity of the inferior alveolar and mental nerves (Fig 1A). Mental paresthesia was not present. Clinical examination showed an exophytic mass around the mesial titanium implant placed in the right mandibular first premolar position (Fig 1B,C). The proximal teeth were mobile, painful, and displaced. However, the soft and hard tissues around the distal implant appeared healthy. Palpation of the cervical lymph nodes did not show pathology. The working diagnosis was peri-implantitis. The patient was scheduled for removal of the lesion. Wide local excision was performed, as well as a marginal mandibulectomy above the inferior alveolar and mental nerves with the aid of Piezosurgery (Mectron Medical, Carasco, Italy) after dental extractions (Fig 2B). The distal titanium implant was osseointegrated and not clinically involved by the pathology. For this reason, the fixture remained. The flap was then closed with No. 4-0 polyester suture with an interrupted suturing tech-

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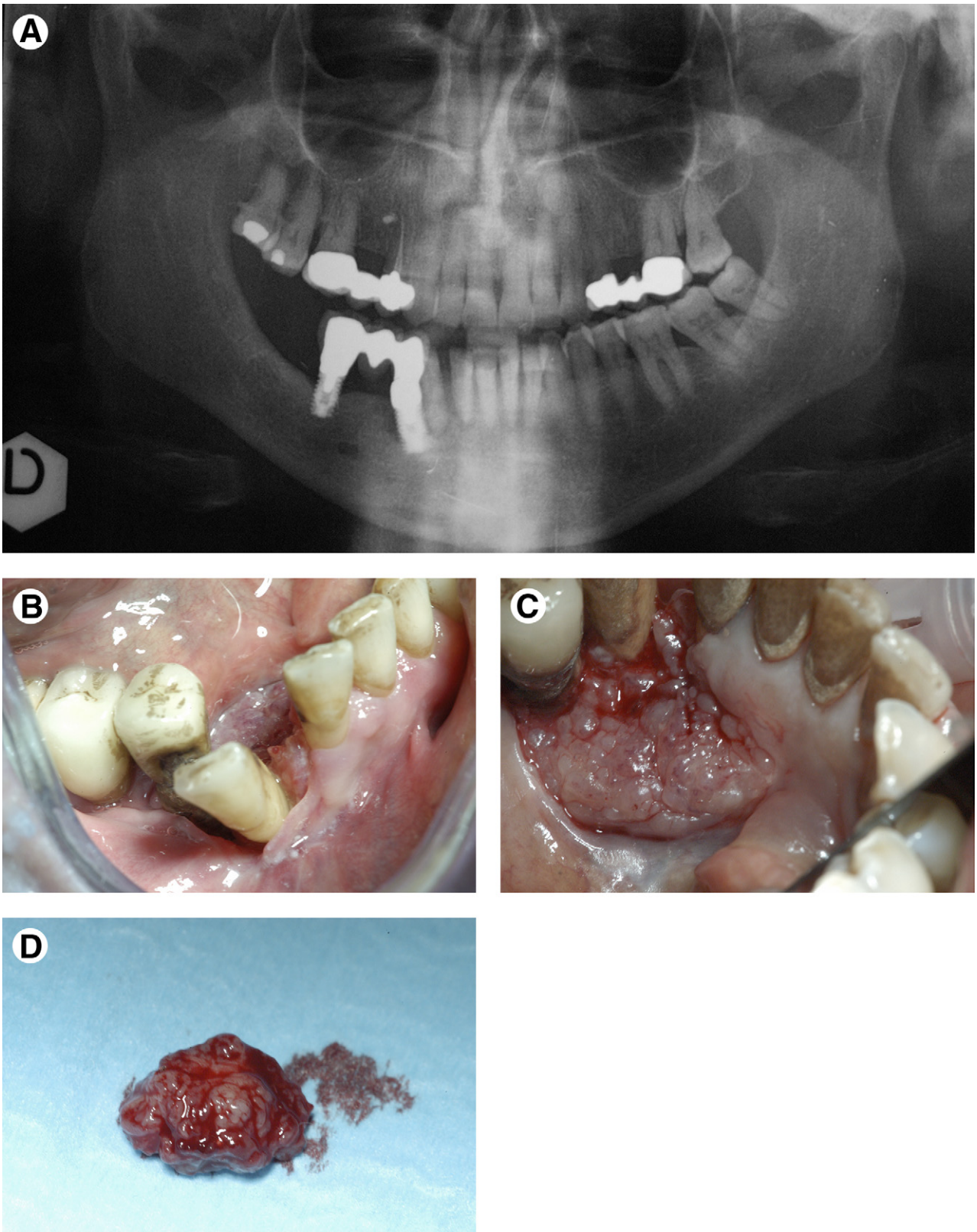

FIGURE 1. *A,* Panoramic radiograph showing a radiolucent area with ill-defined borders resembling peri-implantitis in the right mandibular region. *B,* Intraoral buccal view of lesion. The tooth displacement should be noted. *C,* Intraoral lingual view of lesion. The involvement of the titanium implant by the neoplastic mass should be noted. *D,* Macroscopic aspect of excised lesion.

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