Labial piercing and localized periodontal destruction – partial periodontal regeneration following periodontal debridement and free gingival graft

CASE REPORT

Ines Kapferer, Stefan Hienz, Christian Ulm

Department of Periodontology, Bernhard-Gottlieb Dental School, Medical University of Vienna, Vienna, Austria

Correspondence to: Dr. Ines Kapferer, Währingerstrasse 25a, A-1090 Wien, Austria Tel.: +43 699 11441297 Fax: +43-1-4277-67212 e-mail: ines.kapferer@gmx.net Accepted 1 January, 2006 **Abstract** – Localized periodontal destruction has been reported as a rare complication of intraoral piercings. The purpose of this case report was to illustrate the destructive nature of a lip stud and to describe the successful treatment of this case. The lip stud was removed and supra- and subgingival debridement was performed. Because of a shallow vestibule, the absence of keratinized gingiva, and the strong frenulum insertion at the gingival margins, a free gingival graft was placed. Subsequently the patient demonstrated a significant amount of osseous regeneration and partial coverage of the recession, which has been clinically and radiographically (computed tomography) documented.

For lip studs, localized gingival recessions at teeth no. 31 and/or no. 41 are the most common complications (1–3) and are increasing in severity and prevalence with years of wear (1). Localized periodontal destruction is in general a rare complication of intraoral piercings and to date has only been reported in association with tongue piercings. The purpose of this report was to illustrate the destructive nature of a lip stud, and to describe the successful treatment of this case.

Case

The patient

A 26-year-old female patient attended to the emergency dental department with a labial lip stud, which had been in situ for 10 months. The medical history was unremarkable. The patient denied any history of trauma involving teeth nos 31 and 41. The level of oral hygiene was good. Periodontal examination revealed isolated probing depths up to 9 mm on teeth nos 31 and 41 with purulent discharge (Fig. 1). In addition, these teeth showed recessions, increased mobility and the presence of calculus. Probing depths of the remaining dentition was within normal limits (1-3 mm). Occlusal examination did not reveal any occlusal discrepancies. However, the patient reported a habit of playing with the stud and the tooth, with a jiggling-like movement. Periapical radiographs revealed localized bone loss on teeth nos 31 and 41 (Fig. 2). In addition, a computed tomography (CT) of the mandibular arch was taken to further assess the possibility of regenerative periodontal therapy (Fig. 3). Microbiological assessment using polymerase chain reaction (PCR) of the pocket flora yielded the following microorganisms: *Porphyromonas gingivalis*, *Prevotella intermedia*, *Tanerella forsythensis*, *Treponema denticola*, and *Fusobacterium nucleatum*. Following initial therapy no putative periodontal pathogens were detected by PCR.

Treatment

The lip stud was removed and the lower front teeth nos 33 to 43 were splinted using a lingual orthodontic wire. The patient was instructed in optimizing oral hygiene. Under local anesthesia, teeth were thoroughly scaled and root planed. Five months after treatment, no clinical signs of inflammation were detectable and pocket depths



Fig. 1. First examination: probing pocket depth of 8 mm (PCP12) mesial on tooth 31.



Fig. 2. Conventional intraoral radiography taken at the first examination.



Fig. 3. Computed tomography, comparison of before (left) and 5 months after (right) treatment: the transverse slices from the same plane shows osseous regeneration in the apical region of tooth no. 41.



Fig. 4. Teeth nos 31 and 41: after initial therapy.

were reduced to 3 mm (Fig. 4). Conventional radiography showed partial osseous regeneration (Fig. 5). With the consent of the patient, the osseous changes were documented with a second CT (Fig. 3). Evaluation of pre- and post-CTs on a slice-per-slice basis revealed osseous regeneration of approximately 3 mm (Fig. 3).

Because of the shallow vestibule with a lack of keratinized gingiva and the strong frenulum insertion at the gingival margins of teeth nos 31 and 41, a free



Fig. 5. Conventional intraoral radiography taken 5 months after the first examination.



Fig. 6. Teeth nos 31 and 41: after initial therapy and free gingival graft.

epithelial graft was placed and a partial coverage of the recessions was achieved (Fig. 6).

Discussion

Localized periodontal destruction has never been described in association with lip studs. One etiologic factor for attachment loss may be the mechanical trauma caused by the intraoral closure of the stud in the presence of localized poor oral hygiene. Additionally, our patient reported a habit of playing with the stud and the teeth. This can be described as a jiggling-like movement of tooth no. 41. Jiggling movements *per se* cannot induce attachment loss, but are a significant risk factor that may contribute to a more rapid periodontal destruction (4).

Computed tomography revealed two approximately 3-mm-deep infrabony two-wall defects, turning into a circumferential defect apically. Based on these findings the potential for periodontal regeneration was determined to be very low.

Following non-surgical therapy, the patient showed a high amount of osseous regeneration. In contrast, earlier studies examining histologically the attachment gain following periodontal treatment, scaling and root planing resulted in the formation of a long junctional epithelium, without new connective tissue attachment and without new bone formation (5, 6). It is generally accepted that periodontal wound healing is age-dependent and is faster in younger individuals than in older individuals (7–10). Consequently, as body piercing is popular among young people (11), a higher potential for osseous regeneration might be expected in this patient population after removing the etiologic agents.

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