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CASE REPORT

Treatment of a mucogingival defect associated with intraoral piercing

KRISTI M. SOILEAU, D.D.S., M.Ed.

In the past 10 years, a notable increase in body adornment through tattooing and piercing has been a cause for concern among both dental and medical professionals. Of most concern to periodontists is the practice of intraoral and perioral piercing. The most commonly pierced intraoral sites are the lips (38 percent) and tongue (8 percent).¹ Less frequently pierced intraoral locations are the cheek, uvula and lingual frenum.² As many as 10.5 percent of 446 undergraduate university students surveyed admitted to having had their tongues pierced.³

Wearing intraoral jewelry can lead to the development of severe mucogingival defects.

Dental professionals have noted several risks associated with the piercing of oral tissues. In a survey of more than 400 pediatric dentists, almost 23 percent claimed to have dealt with complications associated with oral piercing, the most common of which was damage to teeth.⁴ This includes injuries such as chipping or fracturing of teeth and pulpal involvement.⁵⁻⁷

In the last eight years, several cases of piercing-associated gingival recession and attachment loss have been documented.^{1,6-17} Boardman and Smith¹ reported that 12.5 percent of people with oral piercing claimed that they had injuries associated with lip piercing, and 7.8 percent claimed they had injuries associated with tongue jewelry. Campbell and colleagues⁷ reported a higher incidence (19.2 percent) of gingival lesions caused by tongue jewelry. They also found a cause-and-effect relationship between the barbell stem length, the duration for which the unit was in the mouth and lingual gingival recession.

Background. In the previous decade, a notable increase in body adornment through tattooing and piercing has been a cause for concern among both dental and medical professionals. The author reports on the clinical consequences of wearing oral jewelry, specifically periodontal injury that requires surgical intervention. She also presents a general literature review of dental and medical consequences of wearing oral jewelry.

Case Description. A 20-year-old woman with a tongue piercing had severe periodontal recession in lingual aspect of the mandibular incisal area proximal to the location of the oral jewelry. The author used a connective tissue graft to correct the defect via root coverage and an addition to the gingival width.

Clinical Implications. Wearing intraoral jewelry can lead to the development of severe mucogingival defects and necessitates careful and comprehensive periodontal evaluations on a regular basis to monitor attachment loss and damage to dental structures. Patients must be educated about these risks through counseling, patient information brochures and individual case documentation.

Key Words. Oral jewelry; connective tissue grafting; mucogingival defect; complications.

Dentists have used grafts to correct mucogingival defects for decades. The reconstruction of damaged periodontal tissue has taken on an increasingly important role in surgical periodontics. The restorative dentist should consider reconstructing damaged periodontal structures before recommending esthetic or functional bonding or altering pontic design. In cases of gingival recession, root coverage procedures can create a naturally esthetic result that blends with adjacent tissue. The tissue to be grafted typically is taken from the roof of the mouth, though using donor tissue is an option. To idealize root coverage results, bonding of any residual defects that occur after grafting procedures may be necessary. The development of the con-

nective tissue graft has enhanced our ability to restore form and function in a manner not possible before.

In this study, I present a case report about one patient's experience with localized gingival recession caused by oral piercing. I also explain a technique that can be used to correct and manage such a defect.

CASE REPORT

A 20-year-old woman sought dental care at a private dental practice in New Orleans for isolated areas of gingival bleeding. She was medically healthy and was taking no medications. She was smoking 1.5 packs of cigarettes per day.

The clinical examination revealed a dome, or pierced barbell, in the tongue that had been present for four years (Figure 1). I noted a 6-millimeter gingival recession defect on the lingual aspect of the mandibular right central incisor (Figure 2) and a lack of attached gingiva associated with the defect. The level of attached gingiva on the lingual aspect of the adjacent central incisor was 4 mm, representing 1 mm of recession. Using the cementoenamel junction as a baseline, I found that the mandibular lateral incisor also exhibited 1 mm of lingual recession, while the recession on the premolars and molars ranged from no recession to 1 mm of excess gingiva. The probing depths on all four mandibular incisors measured 2 to 3 mm. I noted no mobility on any of the patient's 28 noncarious teeth.

Several restorations needed replacement, so I referred her to a restorative dentist in New Orleans. There was slight rotation of all four maxillary incisors; otherwise, the dentition was well-aligned and in desirable function. The patient's overbite was 0 mm, her overjet was 1 mm, and fremitus was absent. She did not have a crossbite. A periapical radiograph revealed 0 to 5 percent bone loss in the area of the mandibular incisors.

The patient underwent periodontal scaling, polishing and fluoride treatment, and I advised her to undergo periodontal connective tissue grafting to correct the mucogingival defect on the lingual aspect of tooth no. 25. I educated the patient about the harm-causing potential of the tongue jewelry, and she agreed to remove it permanently.

She received pre- and postoperative instructions, as well as prescriptions for alprazolam 0.5 milligram, doxycycline 100 mg and propoxyphene

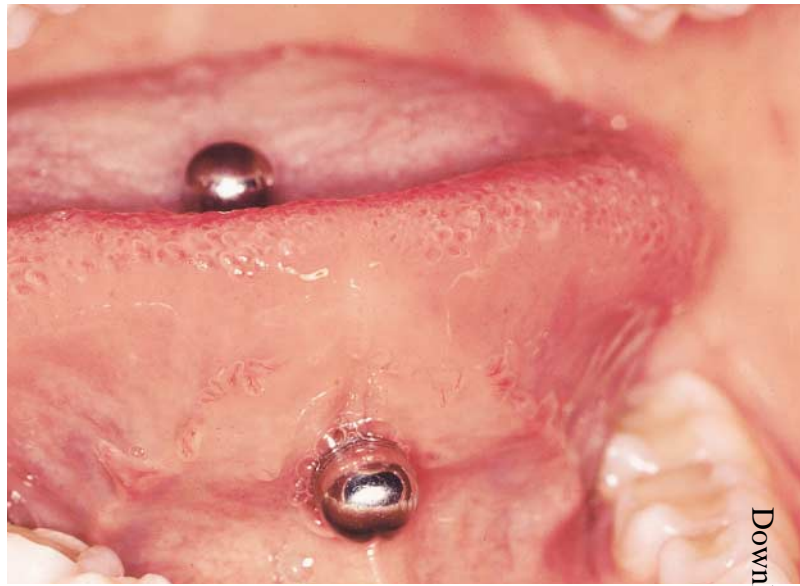


Figure 1. Barbell in place through the tongue.



Figure 2. A 6-millimeter cleftlike defect on the gingival near the lingual aspect of tooth no. 25 (arrow), resulting from wearing the oral jewelry.

N-100. Ten weeks later, she presented for surgical therapy as recommended. Her oxygen saturation was 98 percent, her pulse was 69 beats per minute, and her blood pressure was 118/60 mm of mercury. There was no documented change in her medical history, and she had taken her medications as directed.

I injected her with one carpule of 2 percent xylocaine with 1:100,000 epinephrine and one carpule of 0.5 percent marcaine with 1:200,000 epinephrine. I prepared the mucoperiosteal bed by removing the epithelial layer around the

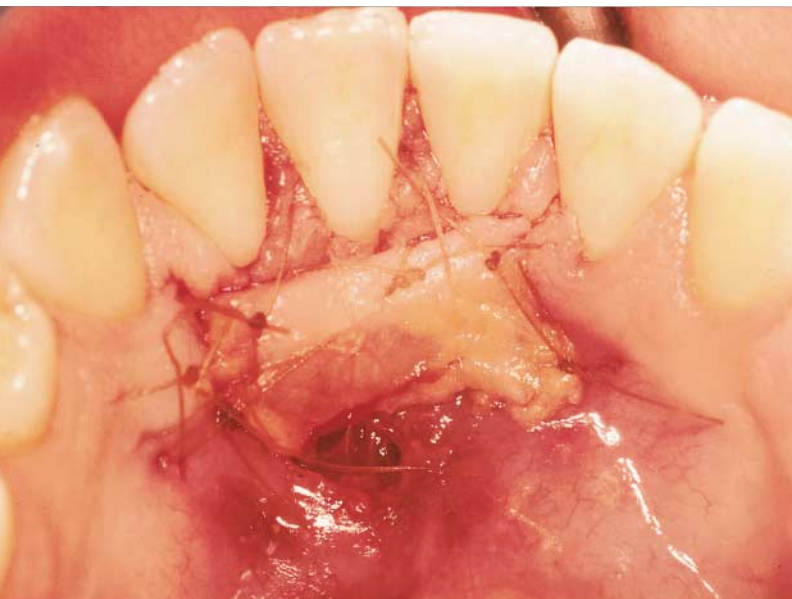


Figure 3. Graft sutured into place over the cleft in the defect.



Figure 4. Healed site at 14 months after surgery.

defect on the lingual aspect of tooth no. 25 and extending the incision to the gingiva of the adjacent teeth for increased blood supply to the graft using a 12B blade.

I removed an 11-mm long \times 8-mm wide connective tissue graft from the palatal area, approximately 3 mm from the free gingival margin of teeth nos. 3 through 5. Keeping the epithelial collar, I placed the connective tissue graft over the mucoperiosteal bed of the lingual aspects of teeth nos. 24 through 26 (Figure 3) using 6-0 chromic gut sutures. I injected 1 cubic centimeter

of dexamethasone (4 mg/milliliter) into the surgical donor and recipient sites for pain and swelling management. I applied a periodontal dressing on the lingual aspect of the mandibular anterior incisors and a surgical stent over the palatal wound.

I reviewed the postoperative instructions with the patient. The patient returned at one week postoperative for observation and to have her dressing removed. I instructed her to use dental sponges dipped in a 0.2 percent chlorhexidine mouthrinse to cleanse the surgical sites. I also instructed her to not brush the tooth or floss the graft recipient site at this time. Healing was uneventful. The following week, I performed a postoperative prophylaxis on all teeth and instructed the patient to use an extrasoft brush dipped in the mouthrinse at this point, and gentle flossing and brushing were to be instituted by the patient in the surgical site. Two weeks later, I performed a second prophylaxis and placed the patient on a three-month recall program, owing to early furcation involvement and isolated 5-mm pocketing around molars.

At 14 months postoperatively, the probing depth measured 2 to 3 mm on the lingual aspect of teeth nos. 22 through 26; mobility remained absent, while the gingival width on the lingual aspect of tooth no. 25 measured 4 mm, and the recession measured 0.5 mm. This indicated an increase in gingival width from presurgical levels of 4 mm and an improvement in recession of 5.5 mm (Figure 4).

DISCUSSION

Brooks and colleagues¹⁸ found 39 documented cases of gingival recession from the increasingly popular behavior of intraoral piercing. They created a demographic profile of mucogingival defects induced by intraoral and perioral piercing (Box). In three other cases, six gingival lesions were attributed to both tongue and lip jewelry in three sites. This brings the total number of affected gingival sites to 43, including the case I report in this article.

One case described by Dibart and colleagues¹⁵ reported two recession sites—one on the facial aspect and one on the lingual aspect of a tooth—as a result of tongue and lip piercing. Brooks and colleagues¹⁶ excluded two cases reported by Sardella and colleagues¹⁷ from their profile, as the clinical presentation of recession in these cases suggested pre-existing conditions: one with local-

ized root staining and one with generalized marginal inflammation with apparent localized root planing.

Brooks and colleagues' profile showed that the majority of piercing-associated lesions involved the use of tongue jewelry (64.3 percent of affected sites) and lip jewelry (35.7 percent of affected sites). The area of recession most frequently associated with tongue piercing was the lingual aspect of teeth nos. 24 and 25 (75 percent of total specified sites). Specified injuries caused by lip jewelry were localized to the facial aspect in tooth no. 25 (58.3 percent of cases reported) and in the area of teeth nos. 24 and 25 (41.7 percent of cases reported).¹⁸

Typically, the earlier the detection of attachment loss, recession or both, the more predictable is the treatment for regenerating attachments. Frequently, narrow, cleftlike defects develop on the lingual aspect of the mandibular incisors,¹⁵ with recession depths of 2 to 3 mm or more often extending beyond the mucogingival junction.⁷ Thicker gingival tissues may be more impervious to recession than thinner gingival tissues.¹⁹⁻²¹ The use of tissue grafting to correct defects has proven to be a long-term, successful means of correcting mucogingival defects, and, as the case in this article shows, it also may address periodontal concerns caused by intraoral piercing.

Several articles report that the consequences of wearing oral jewelry include chipped or fractured teeth, edema, inflammatory or neurological damage at the site of piercing, difficulty chewing, foreign body reaction, pain, infection, dysphagia, speech interferences, scarring, lymphadenitis, sialadenitis, calculus formation on the jewelry, metallic sensitivity and hypersalivation.^{1,23-29}

BOX

DEMOGRAPHIC PROFILE OF MUCOGINGIVAL DEFECTS INDUCED BY INTRAORAL AND PERIORAL PIERCING.*†	
PATIENTS (NO.)	42
SEX (NO.)	
Male	7
Female	12
Not specified	23
AGE IN YEARS (REPORTED BY 18 OF 39 PATIENTS)	
Mean	22.34
Range	16-32
SITE AFFECTED (NO.)	43
Tongue	28
Teeth nos. 24 and 25, lingual aspect	9
Tooth no. 25, lingual aspect	3
Teeth nos. 23, 24 and 26, lingual aspect	1
Not specified	15
Lip	15
Tooth no. 25, facial aspect	7
Teeth no. 24 and 25, facial aspect	5
Not specified	3
PROBING DEPTH (12 OF 43 SITES)	
Normal	7 sites
Pockets	5 sites
Not specified	31 sites
Mean pocket depth	6.2 millimeters
Pocket depth range	5-8 mm
LENGTH OF TIME JEWELRY WORN	
Mean	27.82 months
Range	2 months-9 years
* Sources: Boardman and Smith, ¹ De Moor and colleagues, ⁶ Campbell and colleagues, ⁷ Harnick, ⁸ Er and colleagues, ⁹ Panagakos and colleagues, ¹⁰ Lausten and Koenig, ¹¹ Peticolas and colleagues, ¹² Sadiq, ¹³ Kretchmer and Moriarty, ¹⁴ Dibart and colleagues, ¹⁵ O'Dwyer and Holmes, ¹⁶ Sardella and colleagues ¹⁷ and Brooks and colleagues. ¹⁸	
† The case from this study is included in this profile.	

Medical complications may include Ludwig's angina, brain abscess, swallowing and aspiration of jewelry, excessive bleeding, airway obstruction, tetanus and hepatitis.

CONCLUSION

Periodontists play a vital role in detecting defects associated with perioral and intraoral piercing, as well as in treating such defects with grafting techniques. Dentists need to become more involved in raising public awareness about the risks associated with oral piercing. They need to make concerted efforts to prevent medical and dental sequelae. ■

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