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Oral and dental complications of intra-oral piercing

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Abstract – The present study assessed the prevalence of oral piercing among young adults and revealed the types and rate of complications following oral piecing, as well as the awareness of the complications. The study included 400 consecutive patients, who randomly arrived at a military dental office. Before dental examination, patients were requested to fill out a questionnaire regarding oral piercing, their awareness of its complications, and the occurrence of complications related to piercing. Intra-oral examination included special attention to piercing-related complications, such as tooth fractures, gingivitis, bleeding, infections, gingival recessions, etc. A total of 389 patients, 210 (54%) males and 179 (46%) females agreed to participate (97.3% response rate), with an average age of 20.08 ± 1.1 years. Of the participants, 79 (20.3%) reported having at least one type of oral piercing; lingual piercing was the most common. Swelling and bleeding after piercing were reported by 41 (51.9%) and 36 (45.7%) participants, respectively. Among the participants, 225 (57.8%) were unaware of the dangers of intra-oral piercing. Clinical examination revealed 15 fractured teeth in 11 (13.9%) participants with piercing. Gingival recessions were observed in 21 (26.6%), mostly in the mandibular incisor area. Dentists should be aware of the increasing number of patients with pierced intra- and peri-oral sites and to provide appropriate guidance to patients who contemplate body piercing involving oral sites.

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Oral piercing is a practice that is gaining acceptance as a sign of individuality, marginality, decoration, or group membership (1). Infection, pain, bleeding, edema, inhalation, dental trauma, contact lesions, and oral interferences, are all complications of lingual piercing (2). The proportion of the different complications that present with oral piercing varies. In one study (3), 70% of subjects with piercing had had some type of complication compared with 17% in another study (4).

In spite of its banal appearance, as seen in various scientific studies, piercing is not without risks (1, 5, 6). Several cases of Ludwig's angina have been described (5, 7). The type of piercing generally used in the tongue consists of a stud with two balls screwed to each end. It is inserted in the central, thickest area, avoiding the lingual frenum, as well as taking care not to damage the vascular nerves. The size of the bar or stud is generally greater than the thickness of the tongue, which allows movement (5). It has been reported that 50% of the university student population has some type of piercing. Complications included infection (9%), bleeding (4.5%), and local trauma (3%) (4), which were frequent enough to question the safety and dangers of piercing.

In the absence of complications, healing occurs 4–6 weeks after the procedure. Common symptoms

after piercing include pain, the most profound and immediate consequence, caused by the lack of anesthesia during the procedure, and swelling (8). In tongue piercing, edema is common because of the vascularity in this region. This edema can also compromise the airway and cause obstruction. A needle, which has a similar gauge to that of the ornament being inserted, is used for piercing. A longer device is temporarily inserted to allow the tissue to swell (8, 9). Initially, an oversized barbell is used to prevent the object from becoming embedded in the mucosa. If this occurs, the object will have to be surgically removed (10). Embedding is usually caused by improperly trained personnel, too much pressure used to apply the ornament, and use of an incorrect ornament. The National Institutes of Health has identified piercing as a possible vector for the transmission of blood-borne viruses, such as HIV, hepatitis (B, C, D, and G), herpes simplex, and Epstein–Barr (11). The most common complication with the most serious outcomes of all side-effects is local infection. The only recommendation made by the piercers is to use a mouthwash. This is obviously inadequate, given that the mouth contains large and diverse infectious microflora. Food debris and calculi that accumulate in the pierced area and on the surface of the jewelry promote infection. A case has been reported of a 16-year-old boy who developed acute oropharyngeal hereditary angioedema, 3 days after his tongue was pierced (12).

Common complications include prolonged bleeding from the lingual vessels and injury to the lingual frenum; impaired mastication, deglutition, and speech (especially in pronouncing s, sh, th, ph, t and v) (8); and swallowing and aspiration of the devices. To screw the ball into the barbell shank, the recipient catches the shank between the mandibular and maxillary incisors in a way that can easily harm these teeth (9). Playing with the ornament may also cause gingival and tooth injury and increased salivary flow (9). Other dental and oral complications include chipping or cracking of teeth, abrasions, localized gingival recession, or loss of attachment as a result of constant trauma from the metal barbell (13–15). A case of galvanic current during contact between the stainless steel appliance and an extensive amalgam filling has been reported (13). Hypersalivation as well as calculus build-up on the lingual surface of the barbell have also been reported (14).

The aims of this study were to assess the prevalence of wearing oral pierced ornaments among young adults, to reveal the types and rate of complications following oral piecing, and awareness to complications. This article could serve as a guide to dental professionals whose patients seek advice regarding oral piercing.

Materials and methods

A cohort of 400 consecutive patients (ranging in age from 18 to 24 years), who randomly arrived at a military dental office during the year 2004 for dental examination, were included in the study. There was no common background regarding place of birth, education and socio-economic status. The Ethics Committee of the Medical Corps, Israel Defense Forces approved the study. Before dental examination, patients were asked to fill out a questionnaire regarding the usage of oral piercing, awareness to its complications and the occurrence of complications in relation to the piercing. Names were not recorded on the questionnaire to ensure anonymity. To avoid potential information bias, clarification was made to the participants that the study had no impact on their military service.

One experienced dentist (YZ) conducted the intra-oral examinations. Clinical examination included special attention to piercing-related complications, such as tooth fractures, gingivitis, bleeding, infections, gingival recessions, etc.

SPSS 10.0 (SPSS, Inc., Chicago, IL, USA) was used to analyze the data.

Results

Of the 400 patients, 389 (97.3% response rate) agreed to participate in the study. There were 210 (54%) males and 179 (46%) females, ranging in age from 18 to 24 years (average 20.08 + 1.1 years). Of these, 79 (20.3%) reported one type of oral piercing, most commonly lingual piercing (Table 1). Average reported wearing time of the piercing ornament was 13.04 months (range 1–60 months). After piercing, swelling was reported by 41 (51.9%) of the participants and bleeding by 36 (45.7%).

Among all participants, 225 (57.8%) were unaware of the dangers in wearing an intra-oral piercing ornament. Tooth fracture, gum problem and infection were the most common reported dangers (Table 2).

Clinical examination revealed 15 fractured teeth in 11 (13.9%) participants who had intra-oral piercing, mostly central maxillary incisors. Bleeding from the pierced area was present in 11 (13.9%) participants, infection in nine (11.4%), and gingivitis in four (5.1%). Gingival recession was observed in

Table 1. Self-reported usage of piercing and tattoos among participants

Type	Present (%)	Past (%)	Never (%)
Tongue	39 (10.0)	22 (5.7)	328 (84.3)
Lip (lower)	8 (2.1)	14 (3.6)	367 (94.3)
Body	13 (3.3)	4 (1.0)	372 (95.6)
Tattoo	24 (6.2)	Not Relevant	365 (93.8)

Table 2. Reports on dangers of oral piercing among participants

Complication	No. of participants (%)
None	225 (57.8)
Tooth fracture	84 (21.6)
Gum problem	61 (15.7)
Infection	47 (12.1)
Choking	6 (1.5)
Tumors	2 (0.5)

21 (26.6%) of the participants, mostly in the mandibular incisor area.

Discussion

Oral piercing has become a popular and fashionable phenomena in modern society (1, 8–10). Therefore, it is important for physicians to acknowledge the procedure and its adverse effects. Oral piercing often involves the lips, cheeks, tongue, uvula, or a combination of these sites, with the tongue as the most commonly pierced (8). Oral piercing is carried out without anesthesia or infection control. The piercers are usually unlicensed and self-trained and have very little clinical and anatomic knowledge. Even in healthy individuals, significant health risks exist with this type of physical adornment (16). However, no significant regulatory mechanisms are currently in place to guide practitioners of this craft or to protect the recipients of body piercing. The practice of intra- and peri-oral piercing calls for the development of legislation to protect recipients of these practices, particularly young people in whom this type of body art is becoming increasingly prevalent.

When a patient presents with an inflamed tongue caused by piercing, the physician should remove the jewelry, perform local debridement, institute antibiotic therapy, and chlorhexidine mouthwash (5). The patient should be closely observed to monitor the spread of infection. The opening through the tongue will spontaneously occlude (5).

Although it appears that most tongue piercing proceeds uneventfully, the severity of the complications suffered make the practice one which is difficult to condone. Furthermore, as shown in the present results, swelling and bleeding after inserting the ornament are not uncommon and appear in about half of the patients, as well as tooth fractures and gingival recessions which appear in 14–27% of the patients.

With the increase number of patients with pierced intra- and peri-oral sites, dentists should be prepared to address issues, such as potential damage to the teeth and gingival, and risk of oral infection that could arise as a result of piercing, as well as provide appropriate guidance to patients contemplating body piercing that involve the oral sites. As common knowledge is poor, patients should be educated regarding the dangers that may follow piercing of the oral cavity.

Conclusions

Dentists should be aware of the increasing number of patients with pierced intra- and peri-oral sites and to provide appropriate guidance to patients who are contemplating body piercing involving oral sites.

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