PIERCINGS RISKS AND CONSEQUENCES IN THE ORAL CAVITY: A LITERATURE REVIEW

Riscos e consequência da utilização do piercing em cavidade oral: uma revisão de literatura

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ABSTRACT

Introduction: Currently, piercing practice is quite widespread among young people and adolescents from different social classes. The insertion location of these devices has varied, including oral regions/tissues such as the tongue, lips, cheek mucosa, lingual, and labial brakes. Oral piercing is a risk factor for significant changes, such as gingival inflammation, bone loss, tooth mobility, gingival recession, and abscess. Objective: To report the complications of oral cavity piercings. Methodology: This is a bibliographic review based on specialized literature. Searches of selected scientific articles from the last 15 years were carried out on the online databases

PubMed, Lilacs, and Bireme. Discussion: Studies show several consequences of using piercings in the oral cavity, making it clear that complications range from dental fracture, allergic reactions to neglected metal to infections, which can lead to tissue hyperplasia and airway obstruction. Another high risk is the contamination by instruments infected by hepatitis, HIV, and other sexually transmitted diseases. Final considerations: Faced with such elucidations, it is inferred that guidance to young people and piercing applicators, especially about the oral cavity, regarding the consequences of piercing insertion in this area, is of great need given the constant increase in this accessory's demand.

Keywords: *Inflammation; Tongue piercing; Oral health.*

RESUMO

Introdução: Na atualidade, a utilização de *piercing* é bastante disseminada entre jovens e adolescentes de diferentes classes sociais. A localidade de inserção desses dispositivos tem variado, inclusive regiões/tecidos orais como: língua, lábios, mucosa jugal, freios lingual e labial. O *piercing* oral é um fator de risco para alterações significativas, destacando inflamação gengival, perda óssea, mobilidade dentária, recessão gengival e abscesso. **Objetivo:** Relatar as complicações do uso de *piercings* na cavidade oral. **Metodologia:** Trata-se de uma revisão bibliográfica baseada na literatura especializada por meio de consultas a artigos científicos dos últimos 15 anos selecionados utilizando os bancos de dados PubMed, Lilacs, and Bireme. **Discussão:** Estudos evidenciam diversas consequências da utilização do *piercing* na cavidade oral, tornando notório que as complicações vão desde fratura dental, reações alérgicas ao metal até as infecções que negligenciadas podem levar à hiperplasia tecidual e à obstrução de vias aéreas. Outro grande risco é a contaminação por uso de instrumentos infectados pelos vírus da hepatite, HIV e outras doenças sexualmente transmissíveis. **Considerações finais:** Diante de tais elucidações, infere-se que as orientações aos jovens e aos aplicadores de *piercing*, principalmente sobre a cavidade oral, quanto às consequências da inserção do *piercing* nessa área específica, são de grande necessidade, dado o aumento constante da demanda desse acessório.

Palavras-chaves: Inflamação; *Piercing* lingual; Saúde bucal.

INTRODUCTION

Beautification, art, and decorations of the body itself are ancient practices that have been performed by mankind for centuries in various cultures, such as the Egyptian, Roman, and Mayan. The number of people adept at piercing practicing, especially among adolescents and young people from different social classes, in distinct areas of the body, has increased, but the preference is for those on oral tissues, such as tongue, lips, and cheeks (COVELLO F. et al., 2020). Piercings have a wide variety of colors, models, and materials, such as stainless steel, gold, silver, Teflon, acrylic, or titanium. In the oral cavity, the most common places where they are applied are the lips, the tongue, the lingual, and labial brake. The lingual region presents higher risks and consequences. Thus, the lingual piercing is placed in the midline, as nerves and vessels pass laterally (Simões, A. et al., 2014).

Since it is an invasive procedure, a simple piercing installation can bring several disorders. The most recurrent complications are bleeding, tissue trauma, and infections. Dental fracture, for example, has been listed as the most common problem associated with tongue piercing. The tooth can fracture during the act of interposing the adornment between the anterior teeth or by hitting it with the same teeth (Eulálio S. et al., 2012); SANTOS J.W., et al., 2017).

The prop is called a risk factor for significant changes, among which we highlight gingival inflammation, bone loss, tooth mobility, gingival recession, and abscess. The most reported problems are tartar, halitosis, gingival recession, mucosal trauma, hemorrhage, speech, and chewing interference, and streptococcal endocarditis. Contamination by instruments infected by hepatitis viruses, HIV, and other sexually transmitted diseases is also considered to be a high risk (HENNEQUIN-HOENDERDOS N. et al., 2016.)

Another consequence of lingual piercing is the airways damage because of lingual edema or aspiration of this device. It can also interfere in speech, chewing, and swallowing processes, in addition to increasing salivary flow and causing gum injuries. Information about the risks and harms of the adornment must be provided by the dentist so that the patient decides between fashion and possible future losses (FENATO M.C. et al., 2010; SPEZZIA S. et al., 2014).

Currently, these adornments are a cause for concern and discussion by dental surgeons due to their harmful interference in the oral cavity and to complications that may have an infectious

origin or not. Thus, patients who insist on using it must be followed by the dentist, and piercing hygiene must be encouraged and even performed by this professional if necessary (PÉCORA G. et al., 2010).

The most appropriate piercing and the one that can bring less risk is the dental piercing. As it is glued to the tooth using resin, which does not damage or wear the enamel, there is no risk of infection, and it can be removed without any damage to the tooth when there is no further interest. However, if the patient does not have good oral hygiene, this can also favor the bacterial plaque accumulation around the crystal, increasing the chance of developing tooth decay. Those placed with invasive methods, which pierce soft tissues, pose risks regardless of the chosen model (RIBEIRO F., 2017).

Based on the possible complications addressed in this study, this article aims to address the topic in more detail, based on the existing literature. Therefore, favoring health professionals, especially dental surgeons, concerning the complications and risks that the practice of body piercing, specifically oral piercing, can cause.

OBJECTIVE

To investigate, through an existing literature review, the consequences and risks of oral cavity piercings.

METHODOLOGY

This study is a literature review based on scientific articles about the consequences and risks of using piercings in the oral cavity. We searched for works related to the selected theme on the following databases available online: PubMed, Lilacs, and Bireme. Scientific articles, abstracts, monographs, theses, and books published in the last 15 years were searched using the following descriptors: "Inflammation"; "Lingual piercing"; "Oral health". After the search, articles were selected for this work's preparation, in Portuguese and English, read in full, and served as the groundwork for conducting a classic literature review focusing on the present work's objective.

LITERATURE REVIEW

Concept and History

Piercing is defined as needle implantation, creating an opening inside the cartilage or skin in different body regions since antiquity by different civilizations for aesthetic, sexual, tribal, matrimonial, cultural, and religious reasons. It was present in dead bodies between four and five thousand years ago (PÉCORA G. et al., 2010).

Historically, Egyptians used navel piercings to symbolize royalty, the Mayan pierced their tongues for religious reasons, and the Romans used nipple rings to show courage. Eskimos inserted wooden or bone objects in men's lower lip to symbolize the passage to adulthood, and in the female sex, it was an act of purification (COVELLO F. et al., 2020).

Based on historical studies, historians claim that lip piercing originates in Alaska with Eskimos and Aleutians, and it was used to represent different events in people's lives as the ones mentioned above. However, this accessory only became common among adolescents in Brazil at the beginning of the 1990s (OLIVEIRA ,M. & SANTOS, A.B., 2017)

The practice of body piercing has gained popularity among adolescents and young adults in the world. They currently see it as a means of differentiating, expressing themselves, confronting their families, fulfilling social demands, increasing sexual attractiveness, or as a fashion that has become a symbol of beauty (FENATO M.C. et al., 2010).

According to Pécora et al., 2010, due to its increasing use, especially in the oral cavity region, the piercing use can cause oral alterations, some of which can seriously compromise the individual's health. Perforation of the oral and perioral zones is a specific bodily alteration, and it has been a cause for concern and discussion by health professionals due to its harmful interferences in the oral cavity (RIBEIRO F., 2017).

The average healing time on the lip and tongue is around five weeks. If the patient experiences pain and inflammation with an increased healing period, it is necessary to clean the area immediately with chlorhexidine and antibiotic therapy FRAGELLI C.M. et al., 2010).

Given the above, it is the responsibility of the municipal health surveillance to carry out regular inspections of services and places of interest to health. Among these establishments are tattoo and piercing studios, as the procedures performed in these places must

follow a strict hygiene standard so that they do not expose customers to health risks . (BRASIL, 2009).

Consequences

Oral piercing brings up numerous consequences for users, which, even with good oral hygiene, are not free from diseases. Regarding intraoral piercing, problems can range from inflammatory and infectious processes to difficulty in healing, as well as bone resorption, fractures, and tooth loss. The use of these oral props affects the entire oral cavity. (ACOSTA M.H. et al. , 2014)

According to Pejcic et al. (2012) and Ribeiro (2012), the oral piercing can cause an increase in salivary flow, but given the frequent inadequate hygiene conditions, it can represent other risks such as hepatitis B or C transmission through the blood, and in extreme cases, AIDS virus spread. Consequently, there will be damage to the individual's systemic health, who may have to resort to drug therapy, with analgesics, antibiotics, and anti-inflammatories ingestion that, added to food restriction and masticatory difficulty, cause organic debilitation and immune system depression.

Another problem associated with the use of these devices is the presence of bad breath due to the association with wounds, allergies, infections, and local inflammations that the tongue piercing causes. The dental literature relates piercing practice to endocarditis (heart problem), hemorrhage, esophagitis, and asphyxia (PLASTARGIAS I & SAKELLARI D, 2014). Also, this accessory can act as an etiological factor of oral cancer, since it contributes to the development of chronic lesions in the oral and perioral mucosa, as well as to the release of carcinogenic substances (EULÁLIO S. et al, 2012).

Speech difficulty is another complication that leads the individual to make small adaptations to reproduce sounds and phonemes, both in speech and in the masticatory process due to excessive mobility of the tongue and lips. It is worth noting that the removal of this oral accessory can form lesions called keloids, which consist of ill-defined and protruding edges, caused by a fibroproliferative disorder (FERNANDES W. & FERREIRA R.C., 2014).

Another aspect that should be highlighted is the plaque accumulation on dental surfaces, as the piercing serves as a food and bacteria retention zone. Thus, poor hygiene can initiate a local infection focus that leads to a series of complications, such as the development of dental caries and periodontal disease (MARTINS A.H., 2013). It should be noted that, according to the research by

Saquet et al. (2009), users usually have the habit of cleaning the installed oral piercing. This cleaning becomes very relevant to contribute to the risk of minimization brought by these artifacts installed in an organism area considered extremely colonized by microorganisms.

According to Fragelli et al. (2010), injuries and accidents involving piercing occur often. These can be favored by sports activities practice, especially when there are shocks and impacts. Thus, it increases the chance of undesirable occurrences, such as tooth loss and severe skin and face injuries, compromising the individual's aesthetics (VIEIRA E. et al., 2011)Many of these incidents, such as keloids and dental loss or fractures have only treatments such as corrective plastic surgery and dental prostheses placement .(JUNIOR B. et al., 2013).

The dental surgeon's role

Oral piercing, when installed, is considered a surgical procedure and must, therefore, be provided by qualified professionals who obey sterilization and asepsis principles. (INCHINGOLO F. et al., 2011).

The oral piercing installation performed by unqualified professionals exposes individuals to high risks and complications, known as piercers. Furthermore, they do not know of the tongue's anatomy, so they can puncture blood vessels, causing a hemorrhage that can lead to death.(PÉCORA G. et al., 2010, MELO A. et al., 2013).

So, it is noticeable that the dental surgeon needs to play an important role both by informing patients of the risks that oral piercings can bring and the treatment of such complications, or even by influencing them whether or not to pierce. However, it is clear that even after the qualified professional presents the risks of having their patients' oral cavity pierced, there are those individuals who still insist on having it, so they must be monitored by the professional .(GUSMÃO E. et al., 2011).

Incentives for proper hygiene must be given since the complications resulting from the piercing practice are generally due to lack of hygiene, biosafety, and care by both the operator and the user. Therefore, there is a clear need to train health professionals so that they can guide and inform users and future users about the consequences and risks concerning this issue. (FENATO M.C. et al., 2010).

Dentists can also advise their patients to use non-metallic parts or to exchange oral piercing for dental piercing. This exchange can

be made by a crystal or a precious stone, fixed on the tooth through adhesives and composite resin, not damaging the tooth enamel and not generating pain. (RIBEIRO F., 2012). As it is known, tongue piercing is highlighted as a harmful factor to oral health because the tongue is an extremely vascularized and innervated organ, and this facilitates viruses and bacteria spread . (GONZÁLEZ A. et al., 2010). The professional must also emphasize the need for periodic visits to the dental office for the careful monitoring of oral health conditions .(RANDALL J. & SHEFFIELD D., 2013).

When the patient uses the oral piercing, the dentist's work can be difficult, given that these, when used in the peri and intraoral region, can impair the pathologies diagnosis as they interfere with radiographic images. Oral and perioral piercings produce radiopaque areas and, therefore, should not be used during radiographic examinations (MELO A. et al., 2013).

Thus, communication between the patient and the health professional must occur clearly, especially when dealing with a case like this that affects many people, as it is notable that the population lacks information on this topic. The search for information and the advice of those who understand the subject becomes extremely important for the resolution of cases to be carried out quickly, or even for people to think if it is worth risking their lives for a fashion item .(PÉCORA G. et al., 2010; RIBEIRO F., 2012; MELO A. et al., 2013).

How to self-preserve: the likely consequences

The most frequent reasons that lead young people to have a part of their body pierced are identification with members of the same group (expression of identity), aesthetic reasons, improvement of sexual appearance, fashion, and disobedience. As a result, the increase in the indiscriminate use of oral piercing is a form of injury to the adolescents' tissues, making it necessary to warn about the problems that these accessories can cause (MELO A. et al., 2013; ALVES L. et al., 2011).

The American Dental Association (ADA) and the American Academy of Pediatric Dentistry, in the United States, are against the application of intra and perioral piercings in underaged individuals. In Brazil, they can put on piercings if their parents or guardians authorize the act. However, prohibiting the use of piercings by minors without parental consent is not enough.

Application practice must be regulated to protect all users, regardless of age. (GERATO P., 2013).

In Brazil, some states and municipalities have already introduced laws to regulate and inspect establishments for piercing applications. Therefore, there must be a more systematic and efficient monitoring and surveillance system for those who provide the services of placing this ornament . (GERATO P., 2013; BORGES L.P., 2015).

DISCUSSION

The complications of using this item vary according to the amount of time of its use. According to Santos et al. (2017), the immediate complications are in the first 24 hours after the piercing insertion and late after the period of one month. They also claim these complications are even more severe when placed on the tongue due to the high vascularization of this structure.

The first complication can occur in this adornment's use since, in most cases, it is not a health professional who does it. Kieser et al. (2005) showed, in a study, that only 4 of 43 interviewed individuals had their piercings applied by doctors or dentists in New Zealand.

Marquezan et al. (2008) indicate that piercers are often unaware of human anatomy, the systemic conditions of the patient, and the correct sterilization protocols, exposing the client to some diseases such as tetanus, hepatitis, AIDS, and herpes. They are not authorized to use local anesthetics or prescribe medication, so complications such as pain, edema, and bleeding are common.

There are numerous other risks associated with the piercing use in the oral cavity such as dental fracture, aspiration, infection and allergic responses to metals, damage to gingival tissues, bone structure loss, pain, deep cysts formation, speech, chewing and swallowing impediment, bruises, neuromas, and even septicemia (GERATO P., 2013].

Hennequin-Hoenderdos, (2012) guarantees that even if the piercing material is inert, it is not uncommon for infections or allergies to appear at the piercing site. These infections, present in the mouth, which is rich in bacteria and food debris, can spread to the rest of the body through the bloodstream and affect distant organs such as the heart, causing endocarditis . (RIBEIRO F., 2012; HOLBROOK J. et al.2012).

The oral cavity is a hot and humid place, making it a conducive medium for the microorganisms' proliferation. Alves et al. (2011) and Borges (2015) state that when piercings are installed on the

tongue, they can promote tooth decay and bone loss. Patussi et al. (2014) indicate that in addition to the lesions' formation, such as granuloma, under some stimuli, such as alcohol and smoking, lesions can turn into cancer. The longer a piercing remains on the lip, the greater the retraction of the gums, as a result of friction, and the chronic inflammation that will set in, leading to instability in the affected teeth . (SIMÕES A. et al., 2014; RAMOS F., 2011).

Silva et al. (2005) found that the main complications are scarring, dental fracture, allergic reactions to metal, infections that, if neglected, can lead to tissue hyperplasia, and airway obstruction. Martins et al. (2017) presented other complications, such as altered speech, swallowing, and chewing. When placed on the lips, the piercings are in friction with the region close to the teeth. They cause the gums to retract and an increase in the painful sensitivity of the teeth to heat and cold stimuli (SIMÕES A. et al., 2014; RAMOS F., 2011).

Berenguer et al. (2006) found in their studies severe gingival inflammation with tooth mobility, horizontal bone resorption, periodontal pocket, and warned of the possibility of dental fractures caused by the continuous trauma due to the act of interposing the tongue piercing.

Marquezan et al. (2008) show that dental surgeons must guide the piercing users about oral hygiene since they can also accumulate plaque and dental calculus. They must also be instructed regarding sports practice so that the trim is removed during sports.

FINAL CONSIDERATIONS

Given the increasing use of oral piercing among young patients from different social classes and knowing the risks and harms of this adornment, dental surgeons should guide patients about the disadvantages of its use and the hygiene and the practice of sports care, in addition to requiring solid regulation and inspection of body piercing establishments by the competent bodies.

Faced with such elucidations, it is possible to infer that guidance to young people and piercing applicators, especially about the oral cavity, regarding the consequences of piercing insertion in this particular area, is of great need, given the constant increase in this accessory's demand.

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