CASE REPORTS

CHRONIC SUPPURATIVE OSTEOMYELITIS DUE TO DISLOCATION OF THE SILICONE PROSTHESIS IN THE CHIN: CASE REPORT

Ruan Soares da-Silva [1]*
Lizandra Gonzaga Rodrigues [1]
Camille Fonseca Tostes [1]
Larissa Cristina Araújo de-Moraes [1]
Flávio Ricardo Manzi [1]
Amaro Ilídio Vespasiano [1]

Abstract:

Introduction: Osteomyelitis is one of the inflammatory processes that spread in medullary spaces or cortical surfaces, being one of the adverse effects in cases of foreign bodies. Treatment of osteomyelitis includes antibiotic therapy, drainage and surgical interventions. **Objective:** The objective of this present study is to present a case report of chronic suppurative osteomyelitis, caused by the displacement of a silicone prosthesis in the chin region. **Materials and methods:** Case report, with information obtained through interviews with the patient, review of medical records, complementary diagnostic imaging exam and literature review. **Results:** Based on the information collected with the pacient, review of medical records, complementary diagnostic imaging exam and literature review, it was possible to diagnose the presence of chronic suppurative osteomyelitis in the chin region due to displacement of the silicone prosthesis. **Conclusion:** Aesthetic procedures are increasingly common, but without planning, proper management, correct choice of materials used and good adaptation of the prostheses in the sites, they can cause serious injuries, such as osteomyelitis, bring risks and affect the individuals quality of life. Osteomyelitis treatment is usually specific to each case and depends on a correct and early diagnosis and can be performed clinically and through imaging exams, mainly cone beam computed tomography because it has more accurate images. Treatments can range from antibiotics to resection of the affected bone.

Keywords: Osteomyelitis. Genioplasty. Prostheses and Implants

[1] Pontifícia Universidade Católica de Minas Gerais, Diagnóstico Oral - Belo Horizonte - Minas Gerais - Brasil.

Correspondence to:
Ruan Soares da-Silva.
E-mail: ruan-soares@hotmail.com

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INTRODUCTION

Currently, due to the considerable increase in the number of aesthetic procedures, it is not uncommon to find foreign bodies in the head and neck region, especially in the dental field. Foreign bodies are any objects or structures that are found outside of their usual location, or that are not part of the original organism. These foreign bodies can be divided into traumatic or iatrogenic. The traumatic ones are those that violate the body's tissues, such as: bullet projectiles, sharp objects, glass fragments, among others, which can generate serious consequences, such as permanent injuries or even death to the individual. Iatrogenics, on the other hand, are caused by erroneous treatment, lack of adequate planning, misdiagnosis and human failures[1].

Unusual objects are usually found on panoramic and periapical radiographs, CT scans and MRI scans, most often at random during a routine examination. They have very varied presentations, making diagnosis and treatment difficult. When choosing the treatment, several factors must be considered, such as proximity to anatomical structures, object size, difficulty in accessing it, shape, in addition to the damage that can be caused by removal[2].

The search for facial harmony through tissue contour remodeling has become increasingly common. The number of prostheses in the chin region has grown over the years. There is a wide variety of materials that can be used, however the most commonare silicones due to their ease of removal in cases of unsatisfactory results[3].

Surgeries for insertion of such objects must be well planned, with good complementary exams, in addition to a detailed anamnesis and a good clinical examination, since iatrogenic events can be regularly found. Iatrogenics can cause harmful effects such as bone resorptions, bruises and infections. These prostheses are considered foreign bodies, since they are not part of the original organism, and may suffer some type of displacement over time, leading to the appearance of lesions in the affected region.

In this study will be presented a clinical case report of suppurative osteomyelitis caused by the displacement of a silicone prosthesis in the mental region.

CLINICAL CASE REPORT

Patient M.V.C.B, male, 28 years old, caucasian, sought dental care with the main complaint of pain and swelling in the anterior region of the mandible, but could not specify the time of evolution of the symptoms. He reported during the anamnesis that he had undergone an aesthetic procedure with the placement of a silicone prosthesis to increase and project the symphysis region of the chin for approximately one year. When asked about the main complaint of pain, the patient reported that the pain was of medium to high intensity and located in the region of the lower incisors. Also during the anamnesis, the patient did not report systemic disturbance, fever, denies parafunctional habits, addictions and use of medications. No changes such as swelling were observed. In view of the facts reported, the dental surgeon requested a cone beam computed tomography examination of the region to assess a possible periapical lesion of inflammatory/infectious origin of pulp origin.

In the analysis of tomographic reconstructions, it was possible to observe a hypodense image in the anterior region of the mandible, located in the basal cortical region between teeth 34 and 44, where it was possible to observe that it is displaced, not following the anatomy of the region, being more displaced for the inner region of the right side, as shown in the 3D reconstruction - front view (Figure 1). In the axial reconstruction, destruction was observed in the anterior region of the mandible, with projection double bone formation, resulting in an "onion skin" appearance due to the successive deposition of layers of subperiosteal and interruption of the buccal bone cortical in the region of teeth 41/42 (Figure 2). In sagittal reconstruction, a hypodense image is observed in the anterior region of the mandible with discontinuity of the buccal bone cortical, irregular hyperdense areas, with projections from the buccal bone cortex, with no periapical inflammatory processes and/or root resorption of teeth in the region being observed (Figure 3). From the tomographic analysis, the diagnostic hypothesis is the presence of chronic suppurative osteomyelitis due to the presence of displacement of the chin prosthesis in the region.

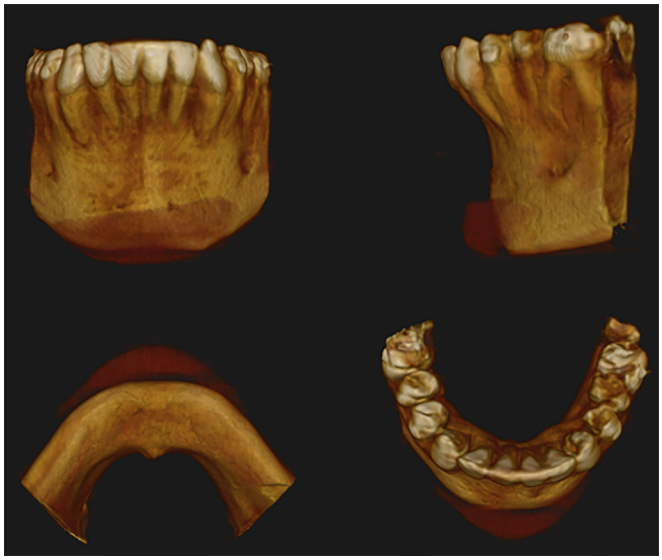

Figure 1. 3D reconstruction.

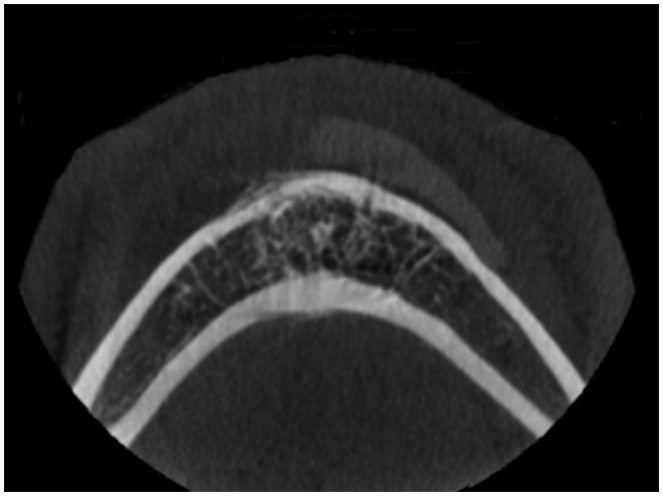

Figure 2. Axial reconstruction.

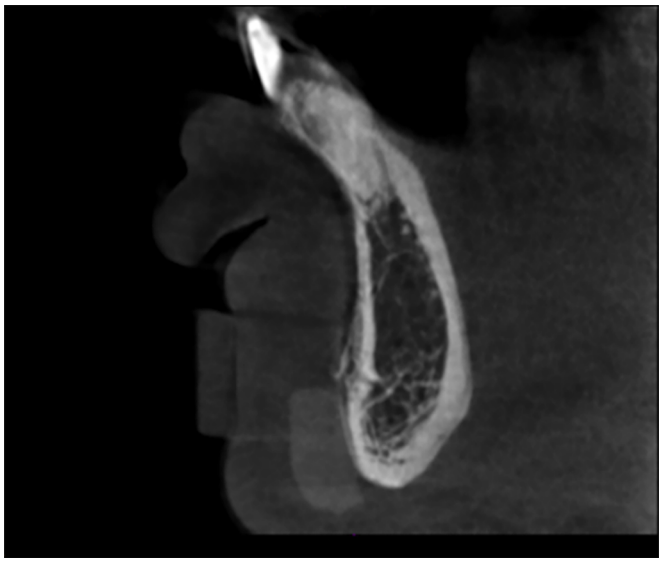

Figure 3. Sagittal reconstruction.

Due to the covid-19 pandemic, the patient did not return for radiographic and tomographic follow-up, which made it impossible assess the outcome of the case.

DISCUSSION

The first reports of failure related to alloplastic implants were described by Robinson (1972), when 12 of 14 patients submitted to acrylic and silicone implants had bone resorption in the region[4]. Nowadays, the number of aesthetic procedures grows significantly due to the individual's dissatisfaction with their image. Among these procedures, one that stands out is the silicone prosthesis in the chin region. The surgery for its insertion must have adequate planning in order to follow the bone and tissue anatomy of the site where it will be implanted[5,6]. If planning failures occur, it can cause displacement where the prosthesis becomes a foreign body in the region and due to this displacement, it is common to lead to infections such as osteomyelitis. In the present case report, this displacement of the silicone prosthesis can be observed, having been considered as a foreign body for the body, developing from this condition a picture of chronic suppurative osteomyelitis in the anterior region of the mandible[7].

Chronic suppurative osteomyelitis represents an inflammatory bone tissue entity with involvement of medullary tissue. Its etiology is multifactorial, presenting difficult diagnosis and complex treatment, and the prognosis is, in most cases, unpredictable. Therefore, it is an inflammation of the medullary spaces that causes a decrease in the blood supply, leading to ischemia, later to bone tissue necrosis[8]. Among the predisposing factors for osteomyelitis are diseases that affect bone vascularization, immunosuppressive diseases such as AIDS, chronic systemic alterations such asdiabetes mellitus, malignant and hematological lesions. In addition, the abuse of legal and illegal drugs, such as alcohol, tobacco, cocaine, contribute to the development of chronic suppurative osteomyelitis[9,10]. In the present case, the patient did not report thepresence of any disease or pre-installed lesion, going against the data found in the literature, confirming the development of osteomyelitis due to the displacement of the silicone prosthesis.

Chronic suppurative osteomyelitis affects mainly male patients, and all age groups can be affected, occurring more frequently in children and adolescents due to the fact that the bones are in the development stage; the most affected site is the mandible,as it has a smaller blood supply, in addition to having a denser bone cortical, making spontaneous drainage difficult[11]. The clinical data found in the literature are consistent with the present case in relation to gender, age and region of involvement of the lesion.

The main symptoms associated with osteomyelitis include pain that can vary in intensity, swelling, presence of fistulas with purulent drainage being less common to beseen[12]. Bone sequestration may also occur, with shaking of the dental structures andconsequent loss of them[13]. On radiographic images, it is possible to observe areas with irregular borders similar to "moth-gnawed" with bone destruction, degrees of radiolucency and radiopacity representing a sclerosis caused by bone infection. However, computed tomography (CT) is the most indicated imaging exam because it better shows the bone surface with its neoformation and bone sequestration[14].

Among these imaging features we can mention: irregular hypodense areas, uni or multilocular; bone corticals with poorly defined limits or presenting areas of destruction, sclerotic areas close to osteolytic regions, bone expansion, loss of definition in the bone trabeculate, external root resorption, bone sequestration regions and periosteal reaction[15]. These described imaging characteristics were found in the described clinical case, such as bone destruction, poorly defined limits and loss of definition of the trabecular bone pattern.

The main focus of osteomyelitis treatment is to remove the cause of this infection associated with antibiotic therapy, and the main means of reducing the infection is through drainage of the abscesses. In order to be effective in antibiotic therapy, a culture of the microorganisms must be performed, thus verifying their sensitivity to the medication to be used. When choosing an antimicrobial drug, several factors should be considered, such as its toxicity, spectrum of action and tissue distribution[8]. Among the drugs used in Dentistry, Clindamycin has an excellent distribution at the level of bone tissue and is effective against most microbial groups linked to osteomyelitis of the jaws and odontogenic infections[16].

However, as treatment using antibiotics is difficult to succeed, it is common for surgical intervention to occur, as surgery speeds up the healing process, especially in cases where bone sequestration is not eliminated naturally because they are difficult to locate or great extension. The most commonly used surgical procedures are complete surgical curettage and sequestration, with the aim of removing bone sequestration and removing devitalized and infected tissues. If these procedures are performed properly, the prognosis is favorable[13].

The extension of surgical intervention depends on infectious process dissemination. Removal of all infected material to obtain healthy, bleeding bone is mandatory in all cases. For small lesions, curettage, removal of necrotic bone and saucerization are sufficient. In patients with more extensive osteomyelitis, decortication or saucerization is often combined with medullary bone graft. In cases of persistent osteomyelitis, resection of the affected bone is necessary, followed by immediate reconstruction with an autologous graft. Weakened maxillary bones must be immobilized[11].

CONCLUSION

Aesthetic procedures are increasingly common nowadays. However, without planning, proper management, good choice of materials used and good adaptation of the prostheses in the sites, they can generate serious infections, such as osteomyelitis. Osteomyelitis is usually an infection that is difficult to treat, it is specific to each case and depends on a correct and early diagnosis and can be performed clinically, through imaging exams, mainly cone beam computed tomography, as it has more accurate images. Treatments can range from antibiotics to resection of the affected bone. Therefore, the need for good planning, since a simple cosmetic surgery can bring risks and affect the individual's quality of life.

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