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Maxillay osteomyelitis in a patient treated with zolendronic acid

Osteomielitis maxilar en paciente con tratamiento de ácido zolendrónico

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ABSTRACT

Among the oral adverse effects associated with the consumption of bisphosphonates is osteomyelitis. Many professionals are unaware of the stomatological considerations to take into account when caring for patients under treatment with bisphosphonates, which is why this article aims to present the case of a patient with osteomyelitis resulting from treatment with zolendronic acid (Zometa). Patient 70-year-old female with a history of an oncological disease who attended the Maxillofacial Surgery service of the Faustino Pérez Clinical Surgical Hospital in the province of Matanzas due to having "exposed bone" in the region. right of the maxilla associated with 14 and 15 with a history of tooth extraction on 14 approximately 1 month ago. Surgical treatment was chosen because the patient had a movable bone fragment that caused him discomfort.It is important for the stomatologist to keep in mind the association between osteomyelitis and the use of bisphosphonates, to avoid complications that may occur as a consequence of their consumption

RESUMEN

Dentro de los efectos adversos a nivel bucal asociados al consumo de bifosfonatos se encuentra la osteomielitis. Muchos profesionales desconocen las consideraciones estomatológicas a tener en cuenta para la atención de pacientes bajo tratamiento con bifosfonatos, es por ello que el presente artículo tiene como objetivo presentar el caso de un paciente con osteomielitis producto al tratamiento con ácido zolendrónico (Zometa). Paciente femenino, de 70 años de edad con antecedentes de una enfermedad oncológica que acude al servicio de Cirugía Maxilofacial del Hospital Clínico Quirúrgico Faustino Pérez de la provincia de Matanzas por presentar "hueso expuesto" en la región derecha del maxilar asociado a 14 y 15 con antecedentes de extracción dentaria del 14 hace aproximadamente 1 mes. Se optó por el tratamiento quirúrgico porque el paciente presentaba un fragmento óseo movible que le ocasionaba molestias. Es importante que el estomatólogo tenga

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presente la asociación entre osteomielitis y uso de bifosfonatos, para evitar complicaciones que puedan acontecer como consecuencia de su consumo.

INTRODUCTION

Osteomyelitis is an inflammatory process that affects the bone marrow and can be present in the bones of the skull, face and other bone structures. [1] Generally, it begins as an infection of the medullary cavity, quickly affects the Haversian systems and spreads through the periosteum of the area. [2,3]

The most accepted classification of osteomyelitis is the one that takes into account the time of evolution, that is, acute or chronic. Acute osteomyelitis has a short evolution time, lasting days or a few weeks, and bone loss is only occasionally evident radiographically. It can be subdivided into suppurative and non-suppurative forms, as well as hematogenous forms. Chronic osteomyelitis, on the other hand, is recurrent and persistent, lasting from months to years, and can be classified, depending on the causative agent, into suppurative, non-suppurative and sclerosing forms. [4]

The differential diagnosis of osteomyelitis includes infections, benign bone tumors, malignant neoplasms, metabolic disorders, trauma, and osteonecrosis. [4,5]

Osteomyelitis of the jaws is one of the oral adverse effects associated with the consumption of bisphosphonates. [6]

Bisphosphonates constitute a family of medications whose main action is the inhibition of bone resorption. They are currently prescribed in patients with glucocorticoid-induced osteoporosis, Paget's disease, malignant tumor hypercalcemia, bone metastases or osteolytic lesions of multiple myeloma. [7]

Bisphosphonates are currently used despite the adverse effects they cause in some stomatological procedures. Many professionals are unaware of the stomatological considerations to take into

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account when caring for patients under treatment with bisphosphonates, which is why this article aims to present the case of a patient with osteomyelitis resulting from treatment with zolendronic acid (Zometa).

CASE PRESENTATION

Black, female, 70-year-old patient with a history of breast cancer, treated with chemotherapy with zolendronic acid (Zometa) for 3 years, who attended the Maxillofacial Surgery service of the Faustino Pérez Clinical Surgical Hospital in the province of Matanzas for presenting "exposed bone" in the right region of the maxilla associated with 14 and 15.

The extraoral physical examination was unremarkable. During the intraoral physical examination, exposed bone was observed in the area of 14 and 15 (Fig1). Fetidazen was perceived in the described area and partial mobility of the entire bone fragment. The patient reports a history of tooth extraction on the 14th approximately 1 month ago during treatment with Zometa.

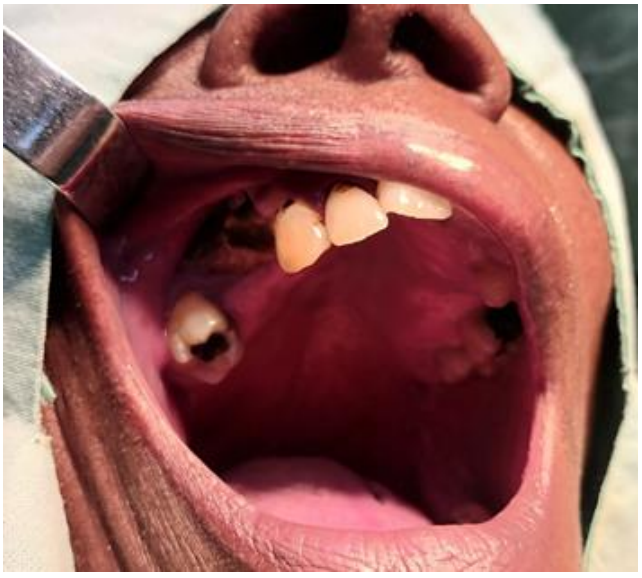

Fig1. Intraoral view, presence of osteomyelitis in the upper right area of premolars.

Upon imaging examination, using orthopantomography, a radiolucent image was observed corresponding to bone sequestration, which extended in the region of the right hemimaxilla from the canine without bone support to the first molar. The affected bone area extended up to 1mm below

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the mucosa of the maxillary sinus (Fig2).

Fig2. Imaging examination, using orthopantomography.

It was decided to wait the year to perform the sequestrectomy and osteoplasty. In the surgical intervention, after antisepsis of the operating field and the placement of a slit cloth, anesthesia is performed with the infraorbital technique on the right side and a Newman-type incision is made (Fig3). The mucoperiosteal flap was then carefully dissected with the periostotome. Osteotomy and excision of the bone fragment, which was studied in pathological anatomy corroborating the diagnosis of osteomyelitis (Fig4). The extraction of the 13th was performed because it was without bone support. Curing, filing and washing the area. Synthesis of silk 3.0 suture fabrics (Fig5).

Fig3. Vestibular flap

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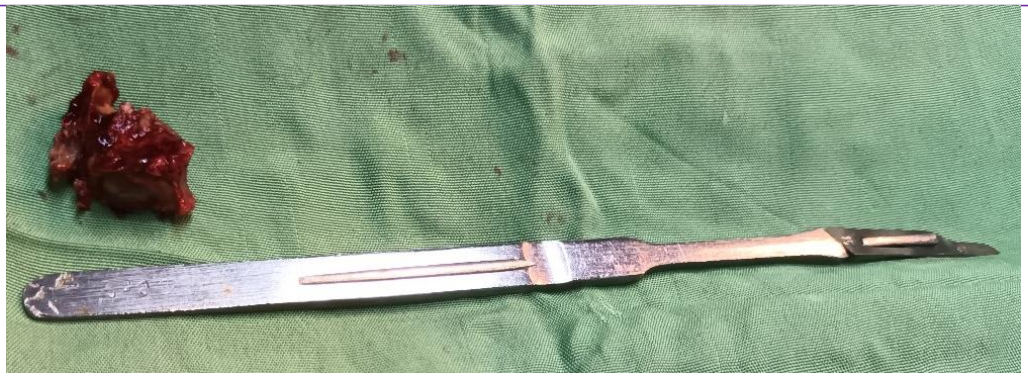

Fig4. Affected bone fragment

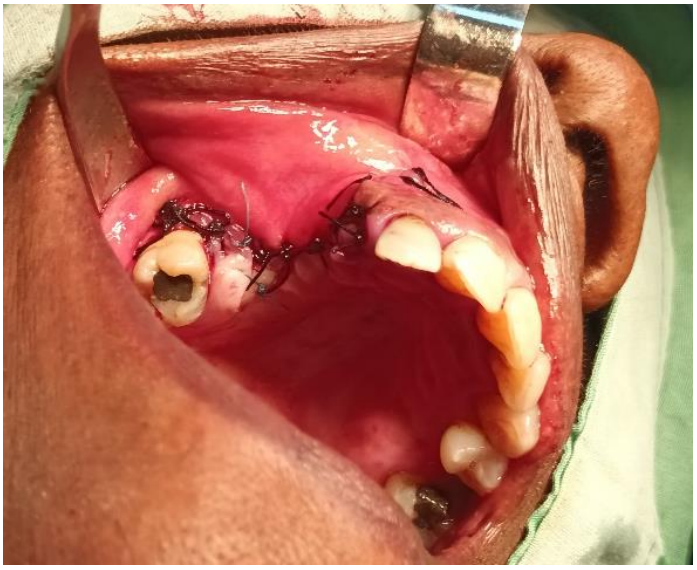

Fig5. Tissue synthesis

For the publication of the case in question, the patient's informed consent was obtained, taking into account the ethical standards established in the Declaration of Helsinki.

DISCUSSION

The spread of osteomyelitis in the jaw occurs very easily, mainly at the average age of 40 years and in individuals with systemic diseases. The area of the mandibular molars is the most affected, due to the vascularization and quality of the bone tissue; [4] this differs from what was presented in this

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patient where the involvement is in the maxilla.

Its presence is due to different factors, one of the most common is odontogenic infection, which is observed more frequently in males, in a ratio of 5:1 compared to females.[1,8]

A study carried out by Nilesh [9] states that the main clinical characteristics are pain, hemifacial inflammation, halitosis, presence of bone sequestration, intraoral drainage site, extraoral drainage site, orosinusal communication and purulent nasal discharge. In our case, the patient presented exposed bone in the area of 14 and 15, stench in the described area and partial mobility of the entire bone fragment.

In the current clinical case, surgical treatment was chosen because the patient had a movable bone fragment that caused discomfort; Furthermore, osteomyelitis could continue to advance and invade other bone structures, destroying healthy tissue.

Nilesh [9] and Cavalho et al. [10] recommend including hyperbaric oxygen therapy in the treatment, which promotes oxygenation of the affected bone, and the topical application of phenytoin, due to its local capacity for healing soft tissues and bones.

Maxillary osteomyelitis represents an additional challenge for a patient receiving bisphosphonate therapy. That is why in 2014, the American Association of Oral Maxillofacial Surgeons recommended a suspension of the drug two months before surgery, as long as the systemic condition allows it, in those patients on treatment for more than four years as well as those who had concomitant risk factors such as rheumatoid arthritis, previous or current exposure to corticosteroids, diabetics as well as smokers until the socket was properly healed.[11,12]

If there is no other possibility other than extraction, it is advisable to perform it as atraumatically as possible, suturing the socket with the aim of promoting healing. It would also be advisable to prescribe antibiotic prophylaxis with amoxicillin/clavulanic acid (875/125 mg) or clindamycin (300 mg) in the case of those allergic to penicillin from two days before the extraction and for ten days after, as well as rinses with chlorhexidine at 0.12% twice a day. [6]

Patients with osteomyelitis can often have a prolonged healing period with the need for long-term antibiotic therapy. Recurrence and/or incomplete resolution of maxillary osteomyelitis with a chronic course have been reported in the literature. [13,14]

Díaz-Castellón et al [4] state that, in the panoramic radiograph, the radiographic findings of

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osteomyelitis of the jaws include the appearance of damaged bone, spherical or ovoid radiolucent images with sclerosis, bone expansion, periosteal reaction (onion skin) and sometimes the presence of bone sequestration seen as radiopaque images within the area of bone destruction; which corresponds to the present clinical case.

In general, the information provided by panoramic radiography is limited due to the superimposition, which makes precise analysis of the lesion difficult[15], so the authors recommend using diagnostic tools such as computed tomography (CT), computed tomography cone beam imaging (CTHC), magnetic resonance imaging (MRI) and bone biopsies, which are available to be able to plan the surgical procedure in detail and locate structures that may be compromised; in order to avoid intraoperative and postoperative complications.

It is the authors' opinion that, to perform a tooth extraction under treatment with bisphosphonates, in a person who has an injury with exposed bones in the oral cavity, with a history of more than eight weeks without healing, they should be immediately referred to the maxillofacial surgery service.

CONCLUSIONS

It is important for the stomatologist to keep in mind the association between osteomyelitis and the use of bisphosphonates, to avoid complications that may occur as a consequence of their consumption.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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