

## CASE REPORT

## Chronic osteomyelitis with proliferative periostitis: case report in the State of Amazonas

Marina ROLO PINHEIRO da ROSA <sup>1\*</sup>, Flávio TENDOLO FAYAD <sup>1</sup>,  
Gustavo CAVALCANTI de ALBUQUERQUE <sup>1</sup>, Luiz R. COUTINHO MANHÃES Jr <sup>2</sup>,  
Joel MOTTA Jr <sup>1</sup>, Marcelo V. OLIVEIRA <sup>1</sup>, Válber BARBOSA MARTINS <sup>1</sup>

<sup>1</sup>Maxillofacial and Traumatology Surgery, Amazonas State University (UEA), Manaus, Brazil; <sup>2</sup>São Leopoldo Mandic Faculty of Medicine and Dentistry, Porto Alegre, Brazil

\*Corresponding author: Marina Rolo Pinheiro da Rosa, Avenida Codajás 25, Cachoeirinha, Manaus, AM, 69065-132, Brazil. E-mail: [marinarolo@hotmail.com](mailto:marinarolo@hotmail.com)

### ABSTRACT

The objective is to report a case of chronic osteomyelitis with proliferative periostitis and post-removal monitoring of the offending agent. A male leukoderma patient aged 16, exhibiting increased size in the left jaw region associated with housing of extraction element 37, limitation to mouth opening and facial asymmetry with one year of advance. Laboratory tests were performed, such as panoramic radiography and computed tomography, with intense periosteal reaction in the angle of the left mandible. The patient underwent incisional biopsy and histopathological findings revealed the deposition of trabecular bone that have various forms with deposition of collagenous fibers, exhibiting chronic moderate inflammatory infiltration. At 30 days' follow-up, the patient presented good conditions and had no pain complaints. The prognosis is favorable when the cause is completely removed and adjunct antibiotic therapy is performed.

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**Key words:** bone; infection; osteomyelitis.

The chronic osteomyelitis with proliferative periostitis is the result of a low degree of irritation and infection, stimulating the periosteum activity to the formation of a new bone.<sup>1</sup> In most cases, the osteogenic origin, having as a common factor in caries in permanent molar region, but other factors may be included, such as periapical infection of molars, periodontal infection, untreated fractures, tooth development of the follicle, Impacted teeth, recent tooth extraction, vestibular bifurcated cyst, lateral odontogenic cyst, not odontogenic infection and origin idiopathic.<sup>2,3</sup>

Affected patients tend to be primarily children and young adults, with a mean age of 13 years old. Most cases originate in the lowers pre-molars and molars.<sup>3,4</sup>

Clinically, chronic osteomyelitis with proliferative periostitis is generally characterized by a unilateral facial swelling, which leads to facial asymmetry, with or without episodes of pain, trismus, malaise, and regional lymphadenopathy absence of pus.<sup>5,6</sup>

Clinical examination is very important during the diagnostic process as well as the imaging tests. The radiographic findings are presented with very specific characteristics for the resolution of the case, enabling better diagnosis and subsequently resulting in a good prognosis pathology.<sup>7</sup> The periosteal response can be observed on the occlusal radiography in the form of concentric laminations, features of this disease, which usually appear parallel to each other and along the axis

of the affected bone, giving the appearance known as “onion skin.” The most common cases of this condition can be completed by radiographic clinical, but in some cases the diagnosis should be confirmed by histopathology examination.<sup>2, 8</sup>

Treatment consists in the removal of the etiological factor with the association or not of prophylactic antibiotic coverage. The answer is usually satisfactory, with reduced swelling as the body itself causes bone remodeling that with muscle action in most cases can remodel the bone in the affected region, although it may remain some residual bone growth after a while. The prognosis of chronic osteomyelitis with proliferative periostitis is favorable, the removal of the causative factor of infection resolution case.<sup>9, 10</sup>

**Case report**

Male leucoderma patient 16 years old, an increase of volume in the body and angle region of the left mandibular associated with

bone houses of extraction element 37, with limited mouth opening, facial asymmetry, with painful symptoms and skin thickening in the left preauricular area (Figure 1). Patient reported that about one begins to realize the increase in the jaw region. Laboratory tests were performed, panoramic radiography and computed tomography.

Patient presents no systemic changes in laboratory tests. The panoramic radiograph there was a picture but radiopaque circumscribed in the mandibular angle region (Figure 2). In tomography was observed skin thickening and densification of subcutaneous fat in the left pre-auricular region, an increase of soft tissue in the left masticatory region and intense periosteal reaction on the side margin in the angle of the left jaw, with a slight increase in the size of lymph nodes in the region cervical left without fluid collections associated (Figure 3).

Later patient underwent incisional biopsy jaw branch region with intraoral access the external oblique jaw line and then the surgical specimen was sent for histopathological analysis (Figure 4). Histopathological findings were found mineralized material formed by deposition of trabecular bone that have various forms showing osteocytes in their gaps with the edges of the layers of the presence of osteoblasts. The loose connective tissue that permeates the trabecular features discrete deposition of collagenous fibers, exhibiting moderate chronic inflammatory infiltrate, diffuse, pre-



Figure 1.—Extraoral image showing increased volume in the left mandible.



Figure 2.—Panoramic radiograph showing a radiopaque image and well-define angle in the region and body in the left jaw.



Figure 3.—Computed tomography showing an image with intense periosteal reaction in the angle of the left jaw.



Figure 4.—Intraoral access in branch region of the left mandible for the biopsy.

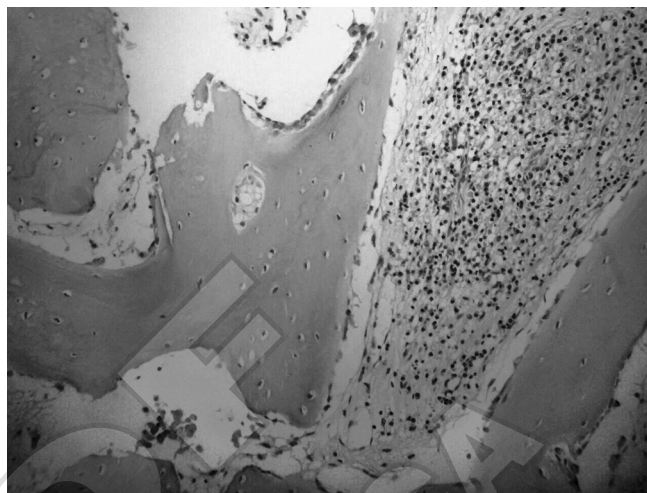


Figure 5.—Photomicrograph of histological section showing deposition of bone trabeculae arranged in various forms and moderate chronic inflammatory infiltrate stained with HE.

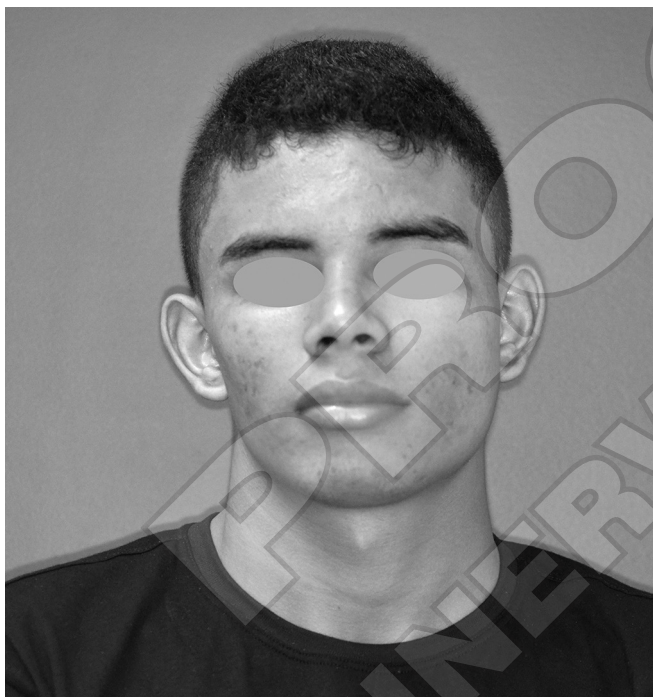


Figure 6.—Front view of the patient after 3 years with a reduction of the increase in the left jaw region.

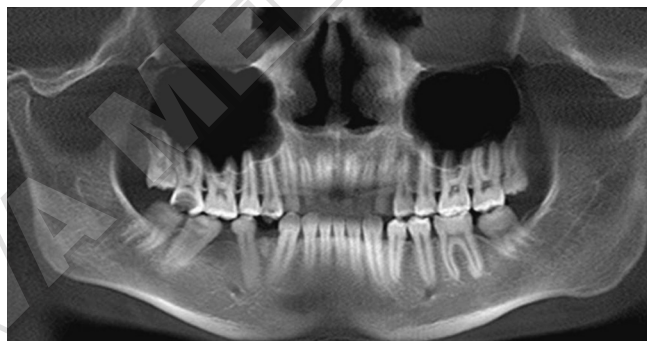


Figure 7.—Computed tomography with panoramic views revealing a hyperdense image with reduced bone increase in body angle and the left jaw.

dominantly lymphocytic, and the presence of blood vessels, confirming the diagnosis of chronic osteomyelitis with proliferative periostitis (Figure 5).

Treatment includes antibiotics. After the procedure, there was regression of the infections above. Postoperatively 30 days the patient presented in good condition and without pain complaints. After 3 years, the patient has a decrease in increasing bone volume in the jaw region (Figure 6, 7). It could be performed bone plasty to improve the aesthetics of the patient, but the patient did not ac-

cept the proposal, because it judged not necessary, because he was satisfied with his appearance.

### Discussion

The reported case of chronic osteomyelitis with proliferative periostitis occurred in a 16-year-old, which corroborates the literature, which brings the most cases with the same age old. It is known to explain exactly what causes this type of reaction in the bone tissue, but some hypotheses are considered, for example, the high activity of the periosteum in young people, which react against a low virulence infection or as a result of

an imbalance between the osteoblastic and osteoclastic activities with predominance of the first, determined by individual factors. The dynamics in the bone tissue of young individuals react more rapidly compared to more individuals.<sup>4, 8</sup>

Regarding the location, the case reported in this article was in the jaw, also in agreement with the literature, which indicates a higher occurrence in this region indeed. In most cases, the disease has become unifocal and unilateral, as can be seen in the clinical case report.<sup>7, 8, 11</sup>

The cause, as mentioned above, can be derived from many factors including the extraction of teeth as in the case reported in this paper.<sup>7, 12</sup>

Despite the clinical and radiographic analysis establish a clear diagnosis of chronic osteomyelitis with proliferative periostitis in its most common presentation, they may not be alone conclusive. In some cases, such as that here was presented the CT scan was complementary addition to histopathology for the diagnosis were conclusive.<sup>2, 7</sup>

In this clinical case, the proposed treatment was the removal of the cause associated with antibiotic therapy, and this type of therapy is recommended by the recent literature.<sup>1, 2, 8</sup>

### Conclusions

We conclude that the diagnosis of chronic osteomyelitis with proliferative periostitis should involve clinical examination, radiographic and histological confirmation in cases where there is doubt or just a confirmation of diagnosis. The prognosis is favorable when the cause

is completely removed and an adjunct antibiotic therapy is administered. Once the cause is removed, the bone will gradually remodel itself, thus in most cases restoring the original facial symmetry.

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