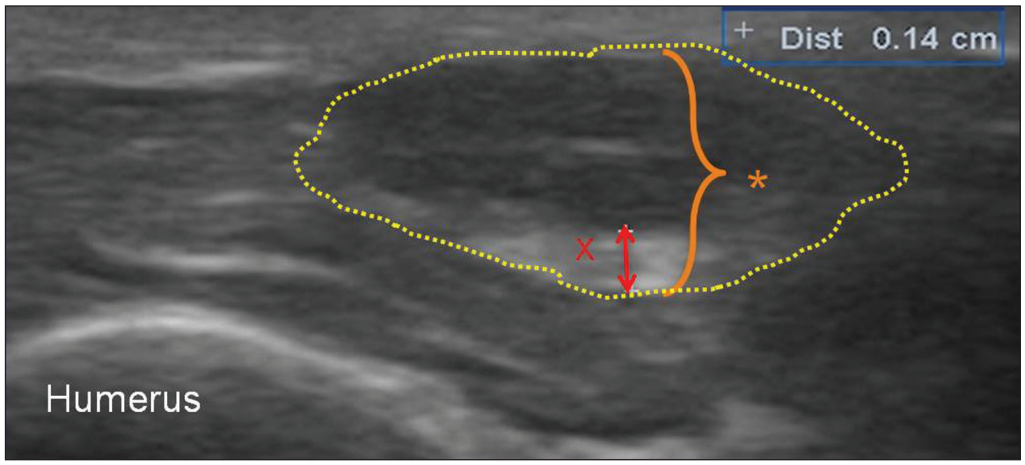

Figure 3. Ultrasound of the left ulnar nerve (asterisk, with contours indicated by dotted lines), in an axial view, 20 mm above the elbow, showing thickening of the epineurium (red ×), which had a thickness of 1.4 mm—much greater than the average (0.77 mm) and similar to the greatest thickness reported by Visser et al.[5].

Ultrasound imaging of the peripheral nerves can be used in order to assess their morphology, identify thickening, estimate the thickness of the epineurium, and calculate their cross-sectional area, as well as to determine their echogenicity and (on Doppler ultrasound) vascularity[1–3]. The ulnar nerve is most often affected, followed by the median and fibular nerves[4]. However, to our knowledge, there have been no ultrasound studies assessing alterations in the greater auricular nerve, which is involved in 18% of cases[4]. In the case presented here, we were able to assess that nerve and found it to be enlarged, as shown in Figure 2. We also identified enlargement of the left ulnar nerve, at approximately 20 mm above the elbow (Figure 3), as was previously reported by Visser et al.[5].

Despite the scarcity of data in the literature on specific quantification of thickening of the greater auricular nerve, we believe that this case illustrates the value of ultrasound in assessing the nerve. Although it is generally smaller than the ulnar nerve, the thickening parameters of the greater auricular nerve epineurium in our patient were similar to the cut-off points for the ulnar epineurium established in other studies[5].

Leprosy is an endemic mycobacteriosis that has a broad clinical spectrum, characterized by nerve and cutaneous lesions with nerve thickening[1,5], and is relatively common in Brazil. Several recent studies have proposed measuring nerve thickness with high-resolution ultrasound involving the use of high-frequency linear probes. That technique has provided a good evaluation of peripheral nerves[6]. An increase in the cross-sectional area of the nerve can thus be identified, providing an assessment of the degree of nerve damage, and the technique could be used in follow-up evaluations[2]. Here, we have reported the first case in which ultrasound evaluation of the greater auricular nerve revealed its thickening in a patient with leprosy.

The use of ultrasound for determining nerve thickness could significantly improve early diagnosis of peripheral neuropathy in leprosy, because it can show the changes that occur even before nerve thickening is palpable or visible on clinical examination. A major goal of treatment is to prevent nerve damage, which progresses to cause physical disabilities[1,4]. In this context, the monitoring of leprosy patients through the use of bedside ultrasound evaluation is a quite useful tool.

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Osteomyelitis of the maxilla caused by *Actinomyces* sp.

Dear Editor,

We report the case of a 76-year-old female patient with diabetes and hypertension that were not being treated on a regular basis. She had undergone a tooth extraction, then continued to feel pain and had a persistent low fever, even during the course of oral antibiotic therapy. Over the following months, she lost multiple, contiguous, teeth at the previously manipulated site. Computed tomography for investigation of bone involvement showed soft-tissue density that was poorly defined, indicating bone erosion in the left maxilla, extending to the maxillary sinus, and palatal fistula. A biopsy of the lesion showed mixed inflammatory infiltrate with granulation tissue (visualized with hematoxylin-eosin staining) and actinomycete colonies permeating the bone tissue (visualized with Grocott's staining), which allowed us to make a diagnosis of osteomyelitis caused by *Actinomyces* sp. (Figure 1).

Actinomycosis is a chronic suppurative infection caused by the Gram-positive bacillus *Actinomyces*, the species *Actinomyces israelii*, which is a member of the endogenous flora often found in the teeth, oropharynx, gastrointestinal tract, and female genital tract, being the most common agent in humans[1].

The most commonly affected area is the cervicofacial region (in 50–65% of cases), followed by the thorax (in 15–30%)

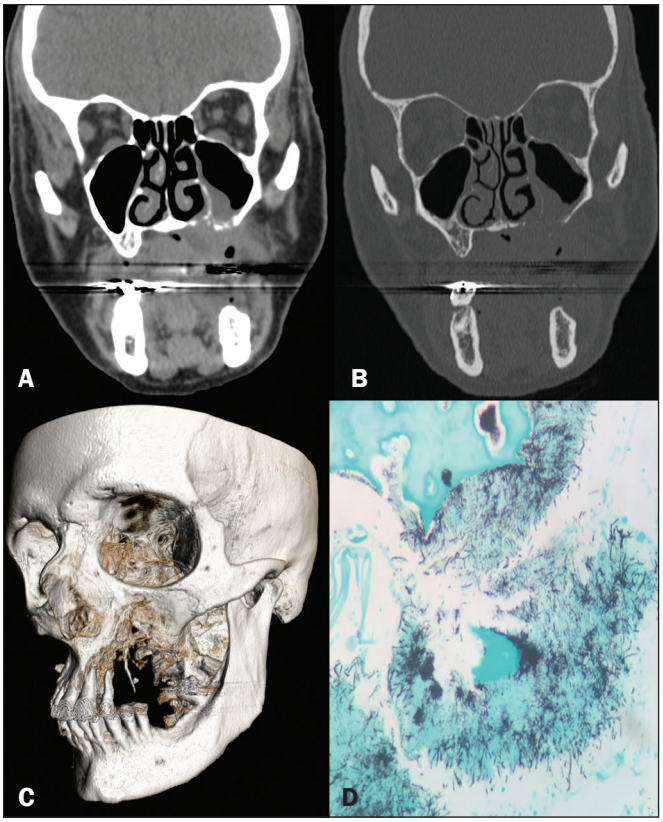

Figure 1. Computed tomography of the facial sinuses, with a soft-tissue window (**A**) and a bone window (**B**), reconstructed in the coronal plane, showing a soft-tissue density lesion eroding the maxilla, the floor of the maxillary sinus, and the left side of the palate, as well as forming a fistula from the oral cavity to the nasal cavity and to the left maxillary sinus. Three-dimensional reconstruction of a computed tomography scan (**C**), showing bone erosion in the maxilla and left palate. Grocott's staining (**D**) showing colonies of filamentous Actinomyces bacteria interspersed with bone tissue (magnification, ×400).

and the abdomen/pelvis (in 20%). However, within the cervicofacial region, the maxilla is the least commonly affected site, accounting for only 0.5–9.0% of cases in the head and neck. Bone involvement is even more rare, osteomyelitis being sporadic or secondary to infection at primary sites[2-4]. Risk factors for cervicofacial involvement include inadequate oral hygiene, trauma to the oral mucosa, chronic tonsillitis, otitis, mastoiditis, and osteonecrosis induced by radiotherapy or bisphosphonates. It is of note that, different than what is observed for the other affected sites, cervicofacial infection with *Actinomyces* sp. occurs more commonly in patients who are immunocompetent[2,3].

In its acute form, actinomycosis usually manifests as edema of the soft tissues, together with the formation of masses and abscesses, evolving, chronically, to dissemination of the infection to the adjacent soft tissues, then the fascial planes, externalizing itself through fistulas of the skin and paranasal sinuses. However, it is rarely seen in combination with osteomyelitis[3].

On computed tomography, actinomycosis appears as a mass with ill-defined borders, soft-tissue density, and contrast enhancement, together with fluid collections and fistulas. The differential diagnosis includes fungal ulcers, carcinoma, idiopathic midline granuloma, and osteomyelitis of the maxilla caused by other germs[5]. In the histopathological analysis, hematoxylin-eosin staining reveals chronic abscess with polymorphonuclear leukocytes, granulation tissue and fibrosis, Grocott's staining revealing colonies of bacilli forming "sulfur granules", which represent tangled filaments of *Actinomyces*, present in abscesses, exudates of the sinus tract, or tissues infiltrated by the lesions[3,6].

Penicillin G is the drug of choice for the treatment of actinomycosis, requiring long courses of antibiotic therapy. Surgical management is reserved for the drainage of bulky abscesses, marsupialization of chronically infected sinus tracts, excision of fibrotic lesions, and debridement of necrotic bone tissue[2].

Therefore, despite its rarity, it is important to bear actinomycosis of the maxilla in mind as a differential diagnosis, mainly in cases of aggressive lesions of the mouth related to the above-mentioned predisposing factors.

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Tubular adenoma of the breast: radiological and ultrasound findings

Dear Editor,

A 34-year-old female patient presented to the breast diagnostic clinic with a palpable nodule in the lower outer quadrant of the left breast. Ultrasound showed a solid, hypoechoic, well-circumscribed nodule, measuring 12 × 8 mm, in the lower outer quadrant of the left breast (Figure 1A). The nodule had not been visible on an ultrasound examination performed a year earlier. Mammography revealed a well-circumscribed, isodense nodule, measuring 12 mm, in the lower outer quadrant of the left breast (Figures 1B and 1C), corresponding to the lesion observed on ultrasound. A percutaneous core biopsy was performed (Figure 1D), the histopathological analysis of which showed tubular adenoma of the breast, consistent with the radiological and ultrasound findings. Therefore, it was recommended that the patient undergo another ultrasound examination in six months and be followed in the breast disease department.

Tubular adenoma of the breast is a rare benign epithelial tumor of the breast that has not been widely studied; the World