



Painful facial abscess

Any case of a chronic nonhealing lesion of the face should include this condition in the differential.

A 35-YEAR-OLD WOMAN presented to our clinic with a purple-red cyst on her right cheek that had been present for about 4 years but had worsened over the prior 2 weeks (FIGURE 1). She said she was experiencing excruciating pain and that the cyst had purulent drainage. She denied any history of diabetes, dental problems, recent trauma, or an inciting event.

On physical examination, there was no

cervical lymphadenopathy, and her vital signs were normal. An incision and drainage procedure was performed. About 2 mL of purulent fluid was extracted and sent for aerobic and anaerobic cultures.

- WHAT IS YOUR DIAGNOSIS?
- HOW WOULD YOU TREAT THIS PATIENT?

FIGURE 1
Purple-red nodule on right cheek



PHOTO COURTESY OF MORTEZA KHODAEI, MD, MPH

At the initial visit, pustular lesions were visible within the patient's cyst.

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The authors reported no potential conflict of interest relevant to this article.

doi: 10.12788/jfp.0287

➤ **Actinomycosis is often called a “great mimicker” due to its ability to masquerade as infection, malignancy, or fungus.**

Diagnosis: Cervicofacial actinomycosis

Direct Gram stain showed gram-positive cocci, so the patient was started on a 7-day course of cephalexin 500 mg tid. Five days later, the anaerobic culture grew *Actinomyces neuii*, revealing the diagnosis as cervicofacial actinomycosis; the patient stopped taking cephalexin. The patient was then switched to a 3-month course of amoxicillin 875 mg bid.

■ **Actinomyces** are natural inhabitants of the human oropharynx and gastrointestinal and genitourinary tracts.¹⁻⁴ They are filamentous, gram-positive rods with characteristic sulfur granules (although these are not always present).¹⁻⁴ It is believed that actinomycosis is endogenously acquired from deep tissue either through dental trauma, penetrating wounds, or compound fractures.^{2,4}

■ **The most common presentations** of actinomycosis include cervicofacial (sometimes referred to as “lumpy jaw syndrome”), followed by abdominopelvic and thoracic/pulmonary, manifestations.²⁻⁴ Primary cutaneous actinomycosis is rare.⁵⁻⁹ Actinomycosis infection often manifests with indolent constitutional symptoms such as fatigue and anorexia.¹ Most cases occur in men ages 20 to 60 years, although cases in women are increasingly being reported.²⁻⁴

■ **Risk factors** include poor dental hygiene or dental procedures, alcoholism, intrauterine device use, immunosuppression, appendicitis, and diverticulitis.²⁻⁴ The exact cause of this patient’s actinomycosis was unknown, as she did not have any known risk factors.

Furunculosis and sporotrichosis are part of the differential

Actinomycosis is often called a “great mimicker” due to its ability to masquerade as infection, malignancy, or fungus.¹ The differential diagnosis for this patient’s presentation included bacterial soft-tissue infection (eg, furunculosis), infected epidermoid cyst, cutaneous tuberculosis, sporotrichosis, deep fungal infection, and nocardiosis.

■ **Furunculosis was initially suspected**, but the original wound culture demonstrated actinomycoses instead of traditional gram-positive bacteria.

A clinical diagnosis

The diagnosis of actinomycosis is usually made clinically, but definitive confirmation requires culture, which can be challenging with a slow-growing facultative or strict anaerobe that may take up to 14 days to appear.²⁻⁴ A Gram stain can aid in the diagnosis, but overall, there is a high false-negative rate in identifying actinomycosis.^{1,3,4}

Treatment time can be lengthy, but prognosis is favorable

Unfortunately, there are no randomized controlled studies for treatment of actinomycosis. The majority of evidence for treatment comes from in vitro and clinical case studies.^{2-4,10} In general, prognosis of actinomycosis is favorable with low mortality, but chronic infection without complete resolution of symptoms can occur.^{1-4,7,8,10}

■ **First-line therapy** for actinomycosis is a beta-lactam antibiotic, typically penicillin G or amoxicillin.^{2-4,10} High doses of prolonged intravenous (IV) and oral antibiotic therapy (2 to 12 months) based on location and complexity are standard.^{3,11} However, if there is minimal bone involvement and the patient shows rapid improvement, treatment could be shortened to a 4 to 6-week oral regimen.^{1,11} Surgical intervention can also shorten the required length of antibiotic duration.^{1,10}

■ **Cutaneous actinomycosis Tx.** Amoxicillin/clavulanic acid has been shown to be an effective treatment for cutaneous actinomycosis, especially if polymicrobial infection is suspected.^{5,6} Individualized regimens for cutaneous actinomycosis—based on severity, location, and treatment response—are acceptable with close monitoring.^{1,2,11}

A lengthy recovery for our patient

Seven weeks after the initial visit, the patient reported that she had taken only 20 days’ worth of the recommended 3-month course of amoxicillin. Fortunately, the lesion appeared to be healing well with no apparent fluid collection (FIGURE 2).

The patient was then prescribed, and completed, a 3-month course of amoxicillin/clavulanic acid 875 mg/125 mg bid.

FIGURE 2

Improvement after initial antibiotic therapy



Swelling had minimized 7 weeks after the initial visit with antibiotic therapy.

FIGURE 4

A look at the lesion on CT



A computed tomography scan taken 2 years after the patient's initial visit revealed a skin lesion over the right mandible measuring approximately 6 x 8 mm (red arrow). There were 2 superficial sinus tracts (yellow arrows). There was no evidence of cellulitis or any other abscess in the deeper tissues. The patient was then treated for 3 more months with amoxicillin/clavulanic acid 875 mg/125 mg bid. The lesion resolved.

Nineteen months after initial treatment, the lesion reappeared as a painless cyst in a similar location (FIGURE 3). Plastic Surgery incised and drained the lesion and Infectious Diseases continued her on 3 months of amoxicillin/clavulanic acid 875 mg/125 mg bid, which she did complete.

Due to the continued presence of the lesion, a computed tomography scan of the

FIGURE 3

A new, painless cyst emerges



Nineteen months after initial treatment, a new cyst appeared in the same general location on the patient's right cheek.

face was ordered 2 years after the initial visit and demonstrated a superficial skin lesion with no mandibular involvement (FIGURE 4). She was then treated with 3 more months of amoxicillin/clavulanic acid 875 mg/125 mg bid, with the possibility of deep debridement if not improved. However, debridement was unnecessary as the cyst did not recur.

We believe that the course of this patient's treatment was protracted because she never took oral antibiotics for more than 3 months at a time, and thus, her infection never completely resolved. In retrospect, we would have treated her more aggressively from the outset. **JFP**

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