

An asymptomatic draining lesion on the cheek



Anisha Guda, BS,^a Rebecca N. Matz, MD,^b and Wendi E. Wohltmann, MD^{c,d}
San Antonio, Texas and Air Force Academy, Colorado

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A 14-year-old boy presented to a medical mission clinic in the Dominican Republic for a several-year history of an asymptomatic draining lesion on his left buccal cheek. He reported a history of tooth pain in the past, which had resolved several months before his presentation. On physical examination, there was a several-centimeter, bound-down, erythematous plaque with central ulceration (Fig 1). Intraoral examination found a nonvital first permanent molar, tooth 19 (Fig 2). A radiograph showed a periapical radial lucency consistent with a periapical abscess (Fig 3).

From University of Texas Health San Antonio Long School of Medicine^a; the Department of Dermatology, United States Air Force Academy^b; and the Departments of Dermatology^c and Pathology,^d San Antonio Military Medical Center.

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Correspondence to: Anisha Guda, BS, UT Health San Antonio Long School of Medicine, 7703 Floyd Curl Dr, San Antonio, TX 78229.
 E-mail: gudav@livemail.uthscsa.edu.

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Question 1: What is the most likely diagnosis?

- A. Furuncle
- B. Pyogenic granuloma
- C. Cutaneous sinus of dental origin (dental sinus)
- D. Squamous cell carcinoma
- E. Osteomyelitis

Answers:

A. Furuncle — Incorrect. Furuncles are skin abscesses that typically involve hair follicles and surrounding tissue; red, tender swollen nodules usually appear. The centralization of the lesion around a periapical abscess makes this less likely.

B. Pyogenic granuloma — Incorrect. Pyogenic granuloma is a benign vascular tumor that occurs on both mucosa and skin and appears as an overgrowth of tissue due to irritation, physical trauma, and hormonal factors. It usually involves the gums.

C. Cutaneous sinus of dental origin (dental sinus) — Correct. Cutaneous sinus of dental origin presents with dimpling or retraction of the skin, and a cordlike tract attached to the underlying alveolar bone may be palpable.¹ Expression of a purulent discharge with applied pressure confirms the presence of a sinus tract, and radiolucency at the apex of the infected tooth confirms the diagnosis.²

D. Squamous cell carcinoma — Incorrect. Oral squamous cell carcinoma develops as an ulcer with fissuring or raised exophytic margins and may also present as a red (erythroplakia) or white plaque (leukoplakia). The absence of these findings intraorally, the young age of the patient, and the presence of a periapical abscess makes this less likely.

E. Osteomyelitis — Incorrect. Skin overlying an area of osteomyelitis can present with pain, erythema and swelling and can be associated with a draining sinus tract. There may be uniformly increased radiodensity related to the tooth or widened periodontal ligament space or periapical area.

Question 2: What is the preferred treatment?

- A. Root canal therapy or extraction
- B. Intravenous vancomycin
- C. Incision and drainage
- D. Radiation therapy
- E. Discharge home with oral antibiotics

Answers:

A. Root canal therapy or extraction — Correct. The preferred treatment is root canal therapy (for a restorable tooth) or extraction (for a nonrestorable tooth), after which the sinus tract and associated cutaneous lesion usually resolve within 5 to 14 days.³ Dental sinuses tend to heal with mild dimpling and hyperpigmentation, which usually improve over time.⁴

B. Intravenous vancomycin — Incorrect. Intravenous vancomycin is the preferred treatment for osteomyelitis but would not be effective in treating a cutaneous sinus of dental origin.

C. Incision and drainage — Incorrect. Nearly 50% of patients reported as having a dental sinus have undergone multiple courses of antibiotics, along with incision and drainage attempts. However, these do not lead to permanent resolution of the sinus.

D. Radiation therapy — Incorrect. This patient does not exhibit signs of squamous cell carcinoma or other forms of cancer that would require radiation therapy.

E. Discharge home with oral antibiotics — Incorrect. The patient has had a draining lesion for many years because of tooth decay. He requires definitive (root canal or tooth extraction) treatment; oral antibiotics will not permanently treat the sinus.

Question 3: What is the most common alternative cause of a patent cutaneous fistula of dental origin?

- A. Epidermal cyst
- B. Tuberculosis
- C. Thyroglossal duct
- D. Actinomycosis
- E. Gumma of tertiary syphilis

Answers:

A. Epidermal cyst — Incorrect. Epidermal cysts are slow-growing painless masses that elevate the skin and often have a central punctum that represents the plugged orifice at the pilosebaceous follicle. If the lining of the cyst is ruptured, keratin can spill out and create a granulomatous foreign body reaction.

B. Tuberculosis — Incorrect. Cutaneous tuberculosis, caused by *Mycobacterium tuberculosis*, accounts for 2% to 3% of all tuberculosis cases. It evolves into an ulceration with the formation of an abscess and a fistula can form spontaneously from the abscess, which will exude creamy pus.

C. Thyroglossal duct — Incorrect. Thyroglossal duct is the most common developmental cyst in the neck but is a rare phenomenon. The cyst moves upward with swallowing or when the tongue is extruded and may burst to form a mucus-draining sinus, which opens below the hyoid bone in the midline of the neck.

D. Actinomycosis — Correct. Actinomycosis is a subacute-to-chronic bacterial infection caused by *Actinomyces israelii* that induces both suppurative and granulomatous inflammation. Localized swelling with draining sinuses and abscess formation characterize this disease, which spreads contiguously; infections of the oral and cervicofacial region commonly occur.⁵

E. Gumma of tertiary syphilis — Incorrect. Gummata of tertiary syphilis, caused by *Treponema pallidum*, tend to arise on the hard palate and tongue as painless swellings, which coalesce into

serpiginous plaques. Areas of ulceration can develop, with foci of breakdown and eventual bone destruction, palatal perforation, and oronasal fistula formation.

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