

Misdiagnosis of a Cutaneous Lesion Resulting from a Dentoalveolar Abscess

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Infection, like some diseases, may have many different manifestations. It may surface at the primary site of the source, it may present with atypical signs and symptoms or it may even present at a distant site from its primary source of origin.¹ Cutaneous chronic draining sinus tracts can be a manifestation of many diseases such as: squamous cell carcinoma, osteomyelitis, foreign body lesions, infection secondary to cystic lesions, even odontogenic infection.² Often the correct diagnosis is very difficult to determine, which frequently results in improper treatment leading to severe scarring that may require surgical correction.

It has been well documented that patients with cutaneous draining sinus tracts of odontogenic origin typically will present to their physician due to the unsightly appearance and persistence of the lesion.² However since there is typically no pain present to help in determining the cause of origin of the tract, the diagnosis becomes even more difficult.^{1,3} It is imperative that a

thorough intraoral, extraoral, and radiographic examination be conducted to determine the source of the infection. Without proper treatment, chronic odontogenic infections can have acute exacerbations resulting in devastating and sometimes lethal effects on the patient.⁴ Many previously published case reports of cuta-

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neous chronic draining sinuses of odontogenic origin have revealed treatment which included frequent excisions and biopsies, along with the prescribing of antibiotics. These treatments only resulted in initial diminution of the appearance and drainage of the lesion which consequently

reappeared and persisted, since the source of the infection was still present.²

Since facial cutaneous chronic sinus tracts are easily misdiagnosed by physicians and dentists,^{1,3} a complete physical and dental history along with their respective examinations must be obtained including, a radiographic examination and any history of odontogenic pain. If a diagnosis is still unclear, a sinugram can be performed. A sinugram is accomplished by inserting a gutta percha point into the orifice of the sinus tract, which will radiographically point to the probable source of infection. Since the source approximation has been made it creates a starting point for dental pulp vitality testing. Vitality testing is usually done by testing for cold sensation in each tooth in the suspected area. When a tooth tests negative to the cold test it is usually indicative of pulp necrosis. By achieving a proper diagnosis, proper treatment such as endodontic treatment or extraction can alleviate the cause, which will result in healing of the sinus tract with



FIGURE 1—Cutaneous sinus tract on the mandibular left cheek, present for 2 years.



FIGURE 2—Close-up of the sinus tract.



FIGURE 3—Periapical radiograph revealing an area of rarifying osteitis and the source of infection, the lower left first molar.



FIGURE 4—Six months post-op. Complete healing of the Cutaneous sinus tract, but with significant scarring.



FIGURE 5—Periapical radiograph demonstrating osseous healing.

minimal, if any, scarring.

CASE REPORT

A 28-year-old man presents to the endodontist's office with a large cutaneous lesion on his left lower cheek just above the cortical border of his mandible (Figs. 1 & 2). The patient's medical history and previous dental history was unremarkable. Extraoral examination revealed a round, elevated and ulcerated lesion measuring about 2cm x 2cm. Palpation of the lesion revealed a

clear yellowish discharge, with traces of blood. No concurrent lymphadenopathy was present.

The patient reported that the lesion had been present for the past two years, and that the lesion would crust over, fill and then drain. Typically this process occurred over two week cycles, but otherwise was asymptomatic. During this two year period, the patient had been seen by 11 general practice and specialty physicians and dentists prior to his

visit to the endodontist. Previous treatments performed ranged from incision, drainage, and packing to cosmetic surgery, which resulted in moderate scarring and persistent infection.

Intraoral examination revealed a large amalgam restoration on the lower left first and second molars. Periapical radiographs revealed a 5mm x 8mm periapical radiolucency involving the distal root of the mandibular left first molar (Fig. 3). The tooth in ques-

tion tested negative to a percussion test. A tooth vitality test was then performed on the suspected tooth and its adjacent teeth, using ethyl chloride. The tooth vitality test revealed that the first molar of the lower left quadrant was, in fact, non-vital.

A clinical diagnosis of a chronic alveolar abscess resulting from pulp necrosis of the mandibular left first molar was made. The tooth was then anesthetized via intraosseous and infiltrative local anesthetic, accessed and endodontically prepared. Calcium hydroxide, an intracanal medicament, was placed between appointments to change the clinical pH, resulting in a change in the local environment of the resident bacteria. Since the patient remained asymptomatic and drainage had ceased from the sinus tract, the endodontic procedure could be completed. The second appointment consisted of copious antibacterial irrigation and drying of the root canal system, and obturating the system via the warm vertical compaction technique using root canal sealer and gutta percha.

One month after complete removal of the source of infection, the patient appeared for a recall appointment. Healing of the sinus tract with some scarring was present. The six month recall revealed complete healing of the cutaneous sinus tract with moderate to severe cutaneous scarring, no percussion or mobility of the treated tooth and radiographic evidence of osseous healing (Figs. 4 & 5).

DISCUSSION

In cases where a chronic sinus tract presents on the mid or lower face or neck, dental pathosis should be suspected. A complete history and examination of the head and neck along with radiographic evaluation, a sinugram, and dental vitality testing will help in determining the origin of

the infection.^{2,3} However if an odontogenic source is not discovered, there are other pathology that should be included in the differential diagnosis such as: osteomyelitis, squamous or basal cell carcinoma, suppurative apical periodontitis, congenital fistulas, salivary gland fistulas, deep mycotic infection, foreign body lesions, and secondary infection of a cyst, just to name a few.^{2,3}

Dental infection usually occurs via pulp necrosis which results in exudate that escapes through the apical foramen and spreads to the surrounding alveolar bone. Destruction of the periodontium occurs resulting in a dentoalveolar abscess. If left untreated, the infection may remain in a chronic state or may have acute episodes

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and spread further into bone. The spread of infection usually follows the path of least resistance, which is usually dependent on the position of the dental roots and the osseous opening to the buccinator muscle. When the osseous opening is above the muscle attachment in the mandible an intraoral sinus tract typically develops and empties into the mouth. This is also the case when the osseous opening is below the muscle attachment in the maxilla. However, the opposite is true when the osseous opening in the maxilla is above the muscle attachment and the mandibular osseous opening is below. When this anatomic variation occurs a sinus tract can form extraorally onto the skin

surface or into one of the many fascial spaces resulting in cellulitis.^{1,3,4} Upon removal of the cause of the infection, either by endodontic treatment or extraction, the cutaneous sinus tract and its associated exudate should heal by granulation and diminish in 5-14 days without antibiotic coverage.³

It is not uncommon for cutaneous chronic draining fistulas presenting to the face and neck to be misdiagnosed by dentists and physicians. Though it may be challenging to properly diagnose the cause of the lesion, it is the most important step in providing the proper treatment. When these lesions are of odontogenic origin, endodontic therapy is the treatment of choice second to extraction. But once the cause is removed, complete healing of the sinus tract is achieved, many times with minimal scarring. It is usually cases where a misdiagnosis and treatment has occurred, that maximum scarring occurs. **OH**

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