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# An Older Man With an Asymptomatic Depression on His Face

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A 75-year-old man with a history of multiple basal cell and squamous cell carcinomas of the face and scalp presented for a total body skin examination. The patient did not report any lesions of concern.

On physical examination, a hyperpigmented depression was noted 1 cm lateral to the right nasolabial fold (**Figure**). Palpation revealed a fixed nodule below the skin surface. No discharge was expressed from the lesion.



**Figure.** *A hyperpigmented depression on the patient's face with a palpable fixed nodule below the skin surface.*

The patient had noticed the lesion 2 weeks prior when he had nicked it with a shaving razor. On further questioning, he revealed that he had had an abscess of the right maxillary canine tooth for the past 6 months. He had undergone a root canal procedure 4 days prior to presentation. He reported having had pain at the site of the tooth abscess but denied pain or discharge associated with the facial lesion.

What's Your Diagnosis?

B. Pyogenic or foreign body granuloma

B. Hair casts

C. Odontogenic cutaneous sinus

D. Epidermal inclusion cyst

E. Furuncle

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## ANSWER: Odontogenic Cutaneous Sinus

Cutaneous sinuses of dental origin represent a communication between the skin surface and a periapical dental abscess caused by a longstanding untreated tooth infection. Because of the patient's history of a dental abscess adjacent to the site of the skin defect, a clinical diagnosis of odontogenic cutaneous sinus was made.

The patient was reassured of the benign nature of this condition. He was informed that with his recent root canal procedure, his condition had been appropriately treated, and the physical appearance of the skin lesion would likely improve over time.

## EPIDEMIOLOGY

The incidence of cutaneous sinuses of dental origin is not known, but the diagnosis is considered to be relatively rare. The mean age at diagnosis is 45 years, and the most affected age group is persons aged 50 years or older.<sup>1</sup> The condition affects men and women equally.<sup>1,2</sup> Due to the association between cutaneous sinuses of dental origin and tooth infection, the condition is seen most frequently in persons with poor oral hygiene.

## ETIOPATHOGENESIS

The most common etiology of cutaneous sinuses of dental origin is periapical dental abscess.<sup>1-4</sup> Periapical abscesses begin with dental pulp necrosis stemming from trauma or untreated dental caries.<sup>3</sup> Infection can then spread to the apex of the tooth, as well as to surrounding ligaments and bone, forming an abscess.<sup>3</sup> When the abscess perforates the cortical bone into the oral mucosa, an intraoral dental sinus tract can develop.<sup>3</sup> Alternatively, when the sinus tract erupts through the skin, a cutaneous sinus develops.<sup>3</sup>

## HISTOPATHOLOGY

Histology findings of the cutaneous lesion are nonspecific and include acanthosis and elongation of the rete ridges, which may be read as pseudoepitheliomatous hyperplasia.<sup>4</sup>

## **CLINICAL MANIFESTATIONS**

Cutaneous sinuses of dental origin most commonly present with a cutaneous nodule and/or dimpling of the skin.<sup>1,2</sup> A cordlike structure representing the sinus tract can often be palpated, and purulent discharge may be expressed through the skin defect.<sup>3</sup> The underlying abscess involves a maxillary tooth in 20% of cases and a mandibular tooth in 80%,<sup>2</sup> and the cutaneous lesion is adjacent to the underlying abscess in virtually all cases.<sup>1</sup> For example, maxillary abscesses commonly drain to the cheek or nasolabial fold, whereas mandibular abscesses drain to the angle of the jaw, submandibular region, or submental region.<sup>2</sup> The underlying tooth abscess is associated with symptoms such as pain in only 50% of cases, since the draining sinus tract may alleviate pain and pressure.<sup>5</sup>

## **DIAGNOSIS**

Diagnosis begins with an intraoral examination, which may reveal a dental abscess, caries, or edentulism.<sup>6</sup> Panoramic or apical radiographs may reveal periapical lucencies that suggest the diagnosis of an abscess.<sup>6</sup> Placement of a gutta-percha cannula through the patent sinus tract followed by radiographs will confirm the origin of the fistula.<sup>1</sup>

## **DIFFERENTIAL DIAGNOSIS**

Depending on the clinical presentation, the differential diagnosis may include basal cell carcinoma, squamous cell carcinoma, pyogenic or foreign body granuloma, epidermal inclusion cyst, or furuncle.<sup>1</sup> Infections such as actinomycosis, tuberculosis, and sporotrichosis should also be considered.<sup>1</sup>

## **MANAGEMENT**

Treatment is directed at the underlying tooth infection. Nonviable teeth are managed with extraction, whereas a root canal procedure is performed on viable teeth.<sup>6</sup> Surgical excision of the sinus tract without treating the underlying dental pathology likely will result in recurrence.<sup>3</sup>

## **COMPLICATIONS AND PROGNOSIS**

Cases are usually uncomplicated, since the presence of the draining sinus tract prevents further spread of the infection. After extraction or root canal, the sinus tract typically resolves within 5 to 14 days.<sup>7</sup> Patients who are treated with tooth extraction or root canal may have rapid resolution of the cutaneous defect; others will be left with temporary postinflammatory hyperpigmentation or permanent skin dimpling.<sup>2</sup> Patients who are concerned about the cosmetic appearance of the skin defect may undergo scar revision after the lesion has healed.

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