

# An Unusual Odontogenic Cutaneous Sinus Tract to the Cervical Region: A Case Report

Altan Varol<sup>1</sup>, Aydin Gülses<sup>2</sup>

<sup>1</sup> Department of Oral and Maxillofacial Surgery, Marmara University, Nisantasi, Istanbul, Turkey. <sup>2</sup> Department of Oral and Maxillofacial Surgery, Gülhane Military Medical Academy, Etlik, Ankara, Turkey.

## Abstract

Odontogenic sinus tracts are the most common cause of a chronically draining papule of the face and neck. Sinus tracts of dental origin opening on the skin with the absence of oral symptoms are often misdiagnosed and can result in inappropriate and ineffective treatment. Cutaneous sinus tracts of odontogenic origin usually appear more commonly in the submandibular or submental regions. A case of an unusual presentation of a cutaneous sinus tract to the cervical region secondary to a periapical abscess of the left mandibular second molar tooth (described as tooth number 37 using Fédération Dentaire Internationale nomenclature) is presented. The case was successfully treated by extraction and the sinus tract healed. Patients with odontogenic cutaneous sinus tracts usually seek treatment from a physician rather than a dentist. Dermatologists and other physicians should be aware that dental extra-oral sinus tracts may be confused with skin lesions. A dental origin must be considered for any chronically draining sinus of the face or neck.

*Key Words: Cutaneous, Odontogenic, Sinus*

## Introduction

A cutaneous dental sinus tract is a channel that leads from a dental focus of infection to drain onto the face or neck [1]. Cutaneous sinus tracts of odontogenic origin usually appear more commonly in the submandibular or submental regions as nodulocystic suppurative lesions [2,3]. These tracts tend to occur more frequently from infected mandibular teeth (80%) than from infected maxillary teeth (20%) [4]. They do not always arise in close proximity to the underlying infection, and only about half of all patients have obvious dental symptoms [3]. Therefore, a cutaneous sinus tract of dental origin can be easily misdiagnosed and many patients seek evaluation from several physicians before an accurate diagnosis is made. It has been estimated that half of all patients undergo surgical excisions, radiotherapy, multiple biopsies, and antibiotic regimens before definitive diagnosis [1,4].

The purpose of this paper is to report a very rare case of a sinus tract to the midline of the cervical region, just over the hyoid bone, secondary to a periapical abscess of the left mandibular second molar (described as tooth number 37 using Fédération Dentaire Internationale nomenclature).

This paper also points out at the need for the consideration of dental origins for any chronically draining sinus of the face or neck.

## Case Report

A 14-year-old female sought evaluation of a chronically draining small nodule on the midline of the cervical region just over the hyoid bone (*Figure 1*). She denied having dental symptoms such as pain or swelling. Gentle pressure on the surrounding tissue elicited thick purulent drainage from the central punctum (*Figure 2*). The nodule had been present for several months. Radiographic examination revealed the presence of a concrecence-like malformation of tooth number 37 and a radiolucent area extending from it to the inferior border of the mandible (*Figure 3*). The diagnosis of periapical abscess with dentocutaneous sinus tract was made. The patient was treated successfully with the extraction of the malformed 37 (*Figure 4*). One week after the extraction, resolution of the infection was conspicuous but a small umbilication in the skin remained (*Figure 5*).

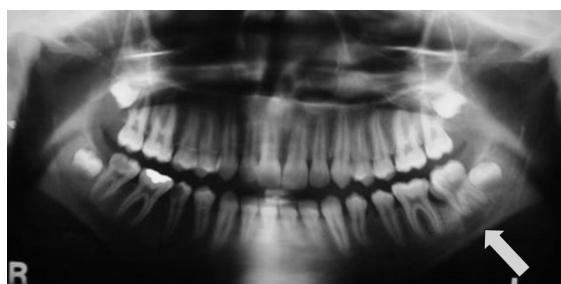
Corresponding author: Dt. Aydin Gülses, Gülhane Askeri Tıp Akademisi, Dis Bilimleri Merkezi Agiz. Dis, Çene Hastalıkları ve Cerrahisi Anabilim Dalı Etlik, 06018 Ankara, Turkey; e-mail: aydingulses@gmail.com



**Figure 1.** Cutaneous sinus tract on the midline of the cervical region over the hyoid bone.



**Figure 2.** Pressure on the surrounding tissue elicited thick purulent drainage from the central punctum.



**Figure 3.** A dental panoramic tomograph revealed the presence of a radiolucent area extending from tooth 37 to inferior border of mandible (arrow).



**Figure 4.** Malformed tooth 37.



**Figure 5.** One week after the extraction, resolution of the infection was conspicuous but a small umbilication in the skin remained.

### Discussion

Cutaneous draining sinus tracts are typically formed by periapical abscesses, which result from inflammatory degeneration of the pulp and periodontal membrane of the tooth [5]. The point of drainage usually depends on the location of the apex of the affected tooth in relation to the muscular attachments of the bone and will follow the path of least resistance through the fascial planes of the face [6]. According to Cioffi *et al.* (1986)[7], the mandible (40%) and the chin (30%) are the most common sites of cutaneous drainage. In the case presented, considering the infection spread, the midline of the cervical region is an infrequent cutaneous site of drainage for a sinus tract originating from a dental abscess localised on tooth 37. The malformed anatomy of tooth 37 may have resulted as an unusual spread of the periapical abscess. However, we did not come across any such reference in the literature.

A cutaneous draining sinus tract of the face frequently presents a diagnostic problem and may mimic a pyogenic granuloma, actinomycosis, thyroglossal duct cyst, a branchial cleft cyst, a furuncle, a squamous cell carcinoma, and an epidermal cyst [3].

According to Spear *et al.* (1988)[8], obtaining a medical history from patients is most important for the differential diagnosis. In the present case report, radiographic findings and clinical examination were suggestive of an odontogenic extra-oral sinus tract. In particular, the examiner should look for dental caries or restorations and periodontal disease [9]. We

also suggest that malformations of the teeth (such as fusions, twinnings or conrescences) should also raise suspicions of a cutaneous sinus tract.

Treatment of an odontogenic cutaneous sinus tract must focus on elimination of the source of the infection. the treatment of choice is either root canal therapy or surgical extraction [10]. After treatment, the sinus tract usually heals in 5-15 days,

leaving a small scar that will become almost invisible over the next few months [8].

The present case report also highlights the importance of communication between medical subspecialists and general dental practitioners in the evaluation of patients with head and neck lesions, even if there is no complaint of dental symptoms.

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