

# Non-surgical management of extraoral sinus: A case report

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## ABSTRACT

**Chronic odontogenic infection often leads to suppuration, which gets drained either intraorally or extraorally through a sinus tract. Being a rare condition, the extraoral sinus tract of odontogenic origin usually poses a diagnostic challenge. It is often confused with non-odontogenic infection by physicians. This case report describes the diagnosis and the non-surgical endodontic management of an extraoral sinus tract.**

**Keywords: extraoral sinus tract, periapical abscess, endodontic treatment.**

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## INTRODUCTION

Cutaneous sinus tracts of dental origin often pose a diagnostic challenge due to their asymptomatic nature and uncommon occurrence [1]. Patients generally seek medical intervention first due to the cutaneous location of the sinus tract. Patients often undergo multiple treatments like surgical excisions, antibiotic regimens, biopsies and even cosmetic treatments which ultimately fail resulting in the recurrence of sinus tract. This occurs due to the failure to treat the underlying etiological factor [2].

In cases of long-standing pulpal infection, the bacteria and their toxins may gain entry into the periapical space and invoke inflammatory response. An abscess may form and when the pressure within the abscess rises, it may result in the formation of sinus tract for the drainage of the abscess [3, 4]. The location of intraoral or extraoral sinus-tract depends on the location of the perforation in the cortical plate and its relationship to facial muscle attachments. If the apices of the teeth are above the maxillary muscle attachments and below the mandibular muscle attachments, the infection may spread to extra-oral regions. After formation of a sinus tract, the inflammation at the apex of the root may persist for a long period because of the drainage through the sinus tract, a chronic abscess can remain asymptomatic for extended periods. The purpose of this study was to report a case of a nonsurgical endodontic management of an extraoral sinus tract.

## CASE REPORT

A 48-year-old male patient reported to the Department of Conservative Dentistry and Endodontics at Post Graduate Institute of Dental Sciences, Rohtak with the chief complaint of a facial lesion. On extraoral examination a cutaneous lesion was found on the right side of face in maxillary region with purulent discharge (Fig. 1).



**Fig 1: Pre-operative photograph**

The lesion occurred 5 months back for which the patient visited a dermatologist and was prescribed antibiotics. The purulent discharge stopped after the patient took antibiotics, but recurred few days later after which the dermatologist referred him to our institute.

On intraoral examination, a carious lesion was found in relation to tooth 25. The tooth was asymptomatic and did not respond to percussion. The tooth was found to be non-vital after pulp vitality test was performed. Radiographic examination revealed a periapical lesion with respect to 25 (Fig 2).



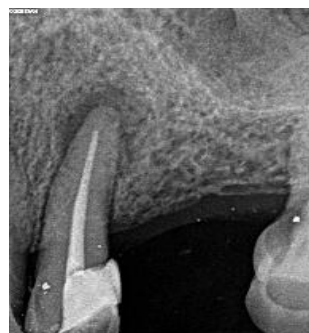
**Fig 2: pre-operative radiograph**

Sinus tracing was done by inserting a sterile 25 no. gutta-percha cone into the sinus tract till the point where resistance was felt and a radiograph was taken. The radiograph revealed the sinus tract to be associated with the periapical lesion of 25 (Fig 3).



**Fig 3: Sinus tracing using Gutta-percha cone**

Based on the clinical and radiological examinations, chronic suppurative periapical periodontitis with an extraoral sinus was diagnosed in relation to tooth 25. A nonsurgical endodontic treatment was initiated on tooth 25. Under local anaesthesia access opening was performed. The working length was determined by using Root ZX electronic apex locator (J. Morita, Kyoto, Japan) and confirmed with a periapical radiograph. The root canal system was cleaned and shaped up to K file ISO size 60 (Dentsply Maillefer, Ballaigues, Switzerland) by the step-back technique and irrigated with normal saline. Calcium hydroxide (Prevest DenPro, Jammu, India) was used as an intracanal medicament for 1 week. After 1 week, there was a sign of healing of the extraoral lesion with no purulent discharge. The canal was then obturated using gutta percha (Dentsply Maillefer, Ballaigues, Switzerland) and Zinc oxide eugenol sealer (Fig. 4).



**Fig 4. post-obturation radiograph**

## FOLLOW-UP

At 6-months follow-up the patient was completely asymptomatic with healed cutaneous lesion (Fig. 5) and radiographic examination showing almost healed periapical lesion (Fig. 6).



**Fig 5. 6 months followup**



**Fig 6. Radiograph at 6 months follow up**

## DISCUSSION

Chronic periapical infection can drain intraorally or less commonly on the skin through a sinus tract. Dental symptoms may not be present which could lead to misdiagnosis [5]. When a cutaneous draining lesion is observed, an endodontic origin should always be considered in the differential diagnosis. Differential diagnosis of a cutaneous draining sinus tract should include suppurative apical periodontitis, osteomyelitis, pyogenic granuloma, congenital fistula, salivary gland fistula, infected cyst, and deep mycotic infection [6]. The evaluation of a cutaneous sinus tract must begin with a thorough patient history, intraoral and extraoral examination with an awareness that any cutaneous lesion of the face and neck could be of dental origin. Approximately 80% of the reported cases are associated with mandibular teeth and 20% with maxillary teeth [7]. Most commonly involved areas are the chin and submental region. The other uncommon locations are the cheek, canine space, nasolabial fold, nostrils, and inner canthus of the eye [8]. In case of a patent sinus tract, a gutta-percha cone can be used to trace the sinus from the cutaneous orifice to the point of origin, which is usually a nonvital tooth [9].

As the tooth in this case was restorable, a non-surgical endodontic treatment was performed. For the healing of extraoral sinus, the underlying etiological factor must be taken care of. A spontaneous closure of the tract could be expected in 5–14 days after root canal therapy or extraction [10]. In this case after endodontic treatment cutaneous lesion showed substantial healing with a small cutaneous dimple.

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