Non-Surgical Management of Extraoral Sinus - A Case Report

Dr. Subhankar Banik, [1] **Dr. Navdeep Jethi,** [2]

1. **Dr. Subhankar Banik**
   MDS (Conservative Dentistry and Endodontics); Narayani Dental Care, Agartala, Consultant Endodontist ILS Hospitals, Agartala, Tripura
2. **Dr. Navdeep Jethi**
   Reader, Department of (Conservative Dentistry and Endodontics), Daswani Dental College and Research Centre, Kota , Rajasthan.

CORRESPONDING AUTHOR
Dr. Navdeep Jethi
Department of (Conservative Dentistry and Endodontics),
Daswani Dental College and Research Centre,
Kota , Rajasthan.
Mobile - +91-9815117836
Email - navdeepk43@gmail.com

Abstract

Endodontic infections when left untreated may lead to serious consequences. Sinus tract results from chronic abscess. The drainage of infective material may lead to no or less swelling along with short episodes of pain which goes off on systemic antibiotic therapy. It is best to treat the root cause of infection to get permanent relief. This case exhibits non-surgical treatment of extraoral sinus tract. Proper endodontic treatment and judicious use of intracanal medicament may result in marvelous healing of infected sinus tracts which will lead to healing of extraoral sinus tract.

Keywords - Non surgical, sinus tract, endodontic treatment.

INTRODUCTION

Chronic inflammatory pulp irritation is the most common causative condition of draining or non-draining sinus tracts, which are mostly of tooth-related origin1.

Most cases of severe endodontic infection show an intraoral sinus tract, but those with an extraoral sinus tract are really rare. An extraoral sinus tract of tooth origin is often diagnosed much later, as the patient suspects it to be a skin lesion and not of odontogenic origin2.

Such cases, when misdiagnosed initially by a general practitioner or physician, often take weeks or months to be referred to a dental specialist or general dental practitioner2,3.

The sinus tract is a sequel to a diseased condition where the site of drainage can be external or internal, depending on certain circumstances such as 1,2:

1. Tooth affected,
2. Apex position to muscular attachments,
3. Bacterial virulence,
4. Lower host resistance
5. path of least resistance along structures

Cutaneous sinus tracts are most commonly located on the chin, the cheek, or in the submandibular area and rarely in the nasal region, occurring more frequently from infected mandibular teeth than from infected maxillary teeth4.

A chronic periapical abscess is basically a low-grade but long-standing infection of the peri radicular alveolar bone, where the involved tooth may remain asymptomatic due to the presence of the sinus tract, which does not lead to swelling or pain from pressure buildup and provides continued drainage of the peri radicular lesion5.

It has been seen that using systemic antibiotic therapy will result in temporary relief. The drainage and apparent healing may last for a few weeks, after which the sinus tract will be active again.

Definitive treatment is simple and effective, comprising either tooth extraction or the removal of infected pulp tissue with root canal therapy, resulting in minimal scarring of the skin.

The following case is a nonsurgical management of an extraoral sinus tract of odontogenic origin with endodontic therapy.

CASE HISTORY

A female patient of 65 years reported to the dental outpatient department with the chief complaint of pain in the right lower back tooth region for a few months and extra oral swelling in the right lower cheek.

The patient gave history of pain in the same region that subsided on medication. She then developed a small nodule in the lower border of her right cheek, which grew over the past few weeks. The pain became severe, which had been throbbing in nature for the past five days.

Past medical history: The patient did not have any medical problems but underwent medication for the nodular swelling a month ago.

Past dental history: It was her first dental visit.

Extraoral examination: swelling of 1x1cm, non-fixed swelling, is seen in relation to the lower border of the mandible in the 45–46 region.

Intraoral examination: deep distal caries in 46 with swelling in the buccal vestibule in the 45–46 region.

The treatment plan was first to trace the extraoral sinus tract, followed by root canal treatment with an intra-appointment calcium hydroxide dressing. If necessary, subgingival curettage of the sinus tract

PRE OPERATIVE VIEW

Fig. - Pre operative radiograph, Intra oral view, Extra oral view.

TREATMENT

First L.A. was administered by inferior alveolar nerve block without any local infiltration around 46.
Sinus tract tracing was done using a #25 G.P. point.
Access opening at 46 was done after occlusal reduction.
Soon after canals were negotiated with the #10 k file, pus drainage was evident from the distal canal.
Copious saline irrigation was done, followed by 2.5% NaOCl irrigation, and then calcium hydroxide dressing in glycerin was applied.
The patient was prescribed systemic oral antibiotics for five days and recalled after seven days.
On the next visit, working length was determined using an electronic apex locator.
Working lengths obtained were MB 18.5 mm, ML 18mm, and D 17 mm in 46.

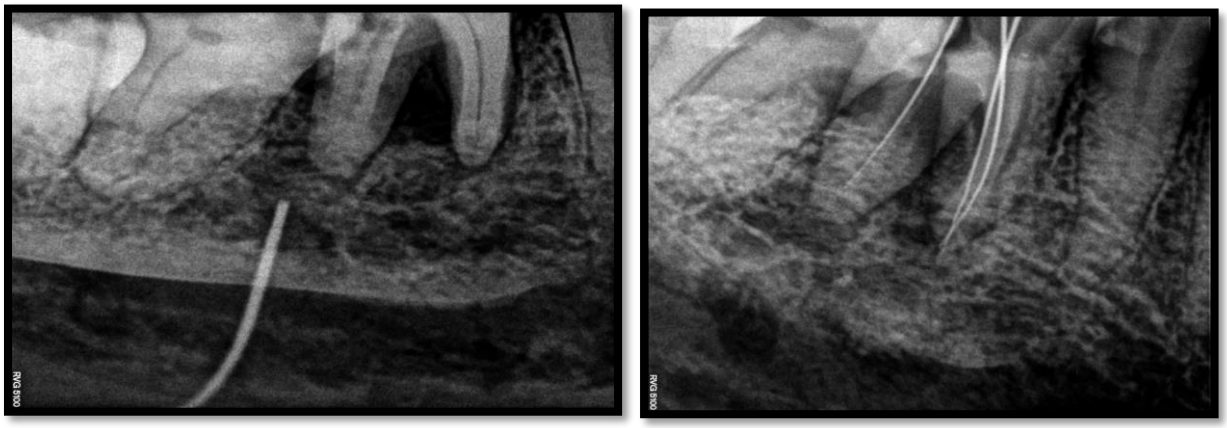

Fig. - Sinus tract tracing, Working length.

BMP was carried out till # 15 k file in 46 up to working length & calcium hydroxide dressing was applied.
On next visit the extra oral swelling decreased in size to half of its previous size. The overall pain also subsided.

Fig. - Reduction in size of extraoral sinus tract

Copious irrigation with saline and 2.5% sodium hypochlorite (NaOCl) was carried out.
The calcium dressing was changed after bmp until F2 hand pro taper in all canals.
On the next visit, after confirming the canals were dry using sterile paper points, the canals were obturated.
Before obturation, final irrigation with saline and 2.5% NaOCl was carried out.
The extraoral sinus tract was completely subsided, with a minimal scar left extra oral.

POST OPERATIVE RADIOGRAPH

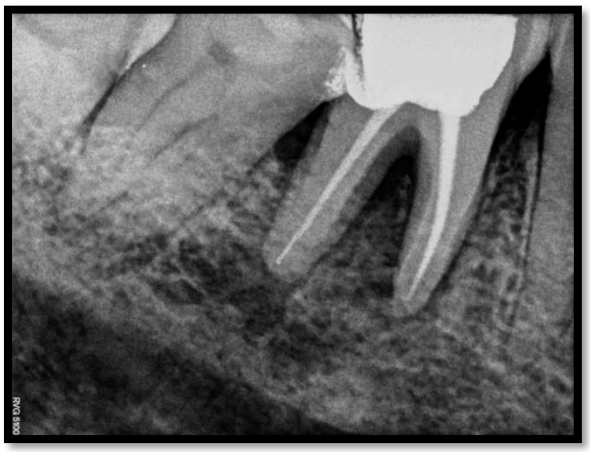

Fig. - Immediately after obturation

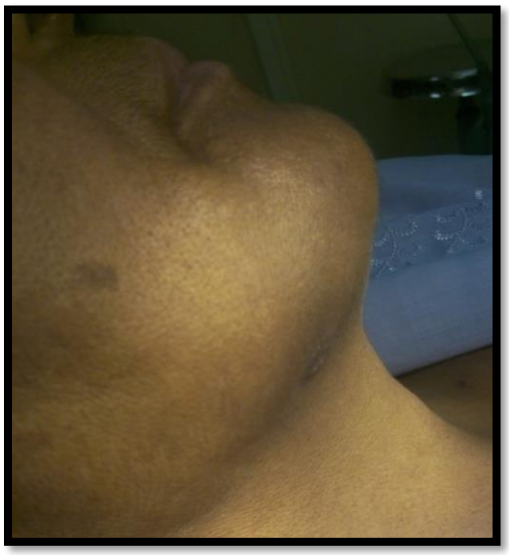

Fig. - Healed extra oral sinus after a month.

DISCUSSION

Endodontic involvement was suspected as the lesion was draining on the facial skin, which led to the diagnosis of the lesion being of intra-tooth origin[1].

Infected cyst, suppurative apical periodontitis, pyogenic granuloma, congenital fistula, deep mycotic infection, salivary gland fistula, and osteomyelitis were all included in the differential diagnosis[2].

Intracanal antibiotic therapy was instituted during the treatment period.

The results were favorable, and the extraoral sinus tracts healed without any surgical treatment. Only non-healing cases should be considered for surgery.

The gutta-percha tracing technique by Tai et al. can be used to determine whether the present sinus tract originated from a lesion at the apical part of a tooth or from a periodontal lesion[4].

In a case by Mittal N et al., it was suggested that during palpation of the area, milking the sinus tract should be attempted in such cases[5].

Many reported cases of cutaneous sinus tract involvement have shown maxillary tooth involvement to be 20%, with most related to mandibular tooth involvement being 80% involved. A skin-involved sinus tract may develop late, up to 30 years old, or early, by a few weeks[6].

Mental and submental regions, followed by the cheek, canine space, nasolabial fold, nose, upper lip, and inner canthus of the eye, are the most common areas of involvement for such cutaneous lesions[5].

In this case, calcium hydroxide was used as an intravenous medicament, which demonstrated a

commendable result. The antimicrobial property of calcium hydroxide comes from the release of hydroxyl ions, which provide a highly alkaline environment (approximately 12.5).

Calcium hydroxide in solution creates a highly alkaline environment in which endodontic microorganisms are unable to survive[2,3].

Most authors believe that on removal of the primary cause, a cutaneous lesion heals without any intervention within 5 to 14 days, but dimpling and hyperpigmentation of the area occur, which fade over time. and only a surgical revision of a bigger scar might be needed to provide a better cosmetic result in the future[6].

Practitioners should be aware of the fact that cutaneous lesions of the face and neck may be of odontogenic origin and should seek evaluation and opinion from appropriate specialists, irrespective of whether or not they are associated with dental symptoms.

CONCLUSION

Disease diagnosis should always be governed by the fundamentals of diagnosis, without which a proper treatment outcome cannot be assessed.

Surgical intervention is not always needed for an extra oral sinus. Proper endodontic therapy along with antibiotics is enough to eradicate such a lesion in most cases.

In the present case, a detailed case history and clinical examination proved to be beneficial to the patient, which pinnacles the need for dental professionals to be aware of teeth as a probable cause of cutaneous or skin sinuses of the face and neck region.

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