Extraoral Cutaneous Sinus Tracts of Dental Origin - A Case Report

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Abstract :

Odontogenicextraoral, cutaneous sinus is described as a path leading from an enclosed area of inflammation to an epithelial surface.A cases of 25 year old female patients with cutaneous extraoral sinus tract has been discussed in this article. Proper diagnosis is the basic requirement for the successful management of the odontogenic cutaneous sinus tracts of pulpal origin. Several case reports reveal that the appropriate diagnosis could not be made leading the incorrect treatment offered to the patients. It causes the cutaneous sinus tract to reoccur as the dental etiology is not addressed. Proper management can lead to treatment at a much earlier stage thus curring the progression of the disease and also saving of time and expenses of the patient.

Keywords : Cutaneous sinus tracts, extraoral sinus, odontogenic sinus, ,sinus tract treatment.

Introduction

Sinus tract is a passageway from the enclosed area of inflammation to epithelial surface. Odontogenic cutaneous sinus tract is a rare but well discussed in the dental literature.[1]

Main etiological cause for odontogenic infections is dental caries followed by periodontitis, pericoronitis or other side effects of comprehensive dental procedures. Often, the second and third molar infections lead to these odontogenic infections.[2]

Pulpitis caused due to the caries, may develop into periodontitis if not treated, finally leading to alveolar ostitis and abscess formation in the orofacial region.[3]

Abscess formation in the orofacial region is relatively rare.[4,5]

Clinically, a cutaneous sinus tract may resemble a nodule, ulcer, or an infected cyst on the skin. Cutaneous draining sinus tract should be differentiated from infected sebaceous, osteomyelitis, suppurative apical periodontitis, epidermoid or thyroglossal cysts, actinomycosis pyogenic granuloma, congenital fistula, deep mycotic infection, furuncle, and salivary gland fistula.[6]

Case Report :

An 25-year-old female was reported to our departement, with a chief complaint of purulent discharge from extraoral sinus on her left lower jaw region. She had a history of irreversible pulpitis in relation to lower left back tooth region since few months back. The patient was given antibiotics for the swelling at local health center, but it did not subside.

On clinical examination :

Extraorally, a soft swelling was present in relation to left side of the body of the mandible. A draining sinus tract which was about 1 cm below the inferior border of the mandible was present in left cheek **(Figure 1)** Intraorally, there was grossly decayed mandibular left second molar tooth, the tooth was tender on percussion. Oral hygiene was poor.

The diagnosis was made of chronic apical periodontitis due to caries that involved the pulp causing its inflammation and spread of infection to the surrounding structures with extraoral sinus.

Treatment :

The extraoral swelling was drained and the extraoral opening of the sinus was found in relation to the inferior border of the left side of the body of the mandible.(Figure 2A)

The tract was excised and irrigated and debrided with Povidone-iodine and normal saline and the involved tooth was extracted. Patient recalled after 7 days and sutures removed.

Oral prophylaxis was also done.

Complete healing of the extraoral fistula was observed with minimal scar formation within 2 months.

[Preoperative images Figure 1].

[Intraoperative images :Figure 2A].

Removal of sinus tract(Figure 2b)

Closure of sinus tract(Figure 2B)

Discussion :

A patient with cutaneous sinus tract should be evaluated with a detailed patient history and a dental etiology. Patient discomfort, esthetic problems, and complications such as sepsis and osteomyelitis can be reduced by proper

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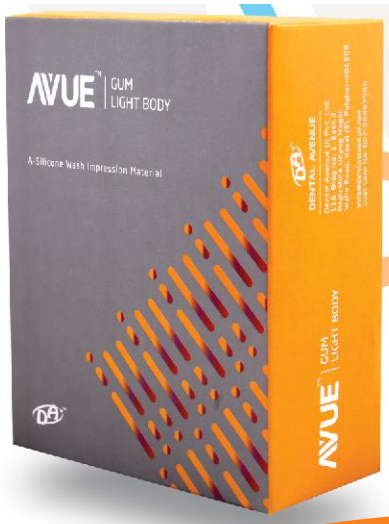

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diagnosis and treatment.[5]

Acute periapical abscess drains along a path of least resistance through an intraoral or extraoral opening in the form of a sinus tract or spread to deeper tissues causing fascial space infection. The teeth apices located below the muscle attachments of the mandible and above the muscle attachments of maxilla can the spread infection extraorally. 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 of time.[7]

Most of the sinus tracts of dental etiology are located intraorally. The extraoral dental sinus tract often is located in close relation to the offending tooth.[8]

These sinus tracts most commonly are found in the submandibular region and the chin. If there is a closure of the sinus tract, then the chronic abscess may become symptomatic.[9]

Clinically, the cutaneous sinus tracts present as erythematous, nontender, fixed nodules, or cystic lesions in the skin of the lower face. Cutaneous lesion takes a long time to develop as the chronic infection is located as a distant site than origin of the primary infection.[1]

As soon as the periosteum is perforated, the pain ceases. A "cord" of tissue can be palpated on the skin overlying the involved bone, and a purulent discharge confirms that a tract is present in the region.[2]

Treatments such as surgical excision, biopsy or surgical revisions, the administration of topical and oral antibiotics. However, these all are inappropriate.[10]

The treatment of these teeth depends on the overall health, cooperation, the tooth position in the oral cavity, clinical and radiographic findings. [10]

The surgical and non-surgical modalities can be used to treat these cases. A non-surgical approach should be done initially. Appropriate cleaning, shaping, asepsis, sterilization of the root canal, and periradicular region and filling of the root canal determine the success of the treatment and good periapical healing.[11]

Many methods have been propagated, which range from periapically perforating the root of tooth during root canal treatment thus draining the pus through orthograde approach, to creating an extraoral pathway for providing rapid relief to the patient in case of large sinuses. Shoelace technique is one such method, where the sinus is managed extraorally by inserting a gauge piece soaked in Povidone-iodine to make a path for pus drainage.[12]

Kaban[6] reported that 80% of the cases of chronic dental infections are associated with mandibular teeth and 20% with maxillary teeth.[13]

Conclusion :

Proper diagnosis is the basic requirement for the successful management of the odontogenic cutaneous sinus tracts of pulpal origin. Several case reports reveal that the appropriate diagnosis could not be made leading to the incorrect treatment offered to the patients. It causes the cutaneous sinus tract to reoccur as the dental etiology was not addressed. These lesions continue to be a diagnostic predicament.

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