

Cutaneous Sinus Tract of Odontogenic Origin: A Case Report**Sangeetha J¹, Balaji P², Poornima C³**

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ABSTRACT:

Cutaneous sinus tracts of odontogenic origin are often misdiagnosed and inaptly treated due to their uncommon occurrence and the absence of symptoms in approximately half the individuals affected. Patients are often referred with a recurrent or chronic cyst, a furuncle, or an ulcer on the face or neck. Correct diagnosis is based on a high index of suspicion and on radiologic evidence of a periapical pathology. Appropriate treatment results in rapid healing of these lesions. We present a case report of this common misdiagnosis and a review of the literature with regard to diagnosis and treatment.

Keywords: Cutaneous sinus tracts, Endodontic treatment, Odontogenic infections.

INTRODUCTION

An oral infection may originate in the dental pulp and extend into the periradicular tissues, or it may originate in the superficial periodontal tissues subsequently dispersing through the spongy bone. Thereafter, it may perforate the outer cortical bone and spread in various tissue spaces or discharge onto a free mucous membrane or skin surface.¹ Most of the odontogenic sinus tracts develop intraorally. However, in 0.9% patients they may drain extraorally. When an extraoral odontogenic sinus tract occurs, it most often develops in close proximity to the offending tooth. Patients often seek treatment from a physician and present with chronic suppurative lesions that resemble a cyst, furuncle, or ulcer.² The common sites for extraoral sinus tracts are the mandibular angles, chin and cheeks.^{3,4} Extraoral fistulas presents as erythematous, symmetrical, crusting, smooth and non-tender nodules with episodic drainage.⁵ The sinus tracts are most frequently associated with mandibular teeth, which have been documented in 80 ~ 87% of the reported cases.^{6,7} Therefore, odontogenic cutaneous sinus tracts are often misdiagnosed as lesions of non-odontogenic origin by surgeons and

dermatologists, leading to unnecessary antibiotic or surgical therapies and the chronic persistence of the lesion. Treatment of dental infection through endodontic therapy or tooth extraction is crucial for the management of cutaneous sinus tracts.⁵

CASE REPORT

A 12 year old female patient reported to the department with a chief complaint of wound on right lower part of cheek since 3 years. Patient was apparently well 3 years ago, when she noticed a small pimple on left part of the cheek. Patient's history comprised three-year-long unsuccessful therapy which included patient's visit to a general physician wherein wound dressing was done and antibiotics were prescribed for a week, but with no relief. Patient later visited ESI hospital for the same complaint and was given antitubercular tablets for 6 months. No history of any traumatic facial or dental injury was reported, and no orthodontic treatment with fixed appliances was performed. It was associated with purulent discharge, not associated with pain, bleeding, swelling or fever. General physical examination revealed

that the patient has normal gait, moderately built, and nourished.

Extraoral examination revealed a draining sinus on left lower border of mandible. (Figure 1)



Figure 1: Extraoral examination

The surrounding skin appears shrunken. Opening of sinus appears crusted. Palpation elicited thick purulent discharge on applying pressure through the sinus opening. (Figure 2)



Figure 2: Extraoral examination

Intraoral examination revealed deep dental caries in 36, tender on percussion positive with vestibular tenderness. (Figure 3) Based on the history and clinical findings, a provisional diagnosis of chronic suppurative osteomyelitis was given. Patient was subjected to radiological investigations. Patient's panoramic radiograph revealed a diffuse radiolucency at the periapical region measuring approximately 0.5 x 1 cm. Sinus tract with periapical lesion was confirmed by localization of the lesion using a GP point. (Figure 4)



Figure 3: Extraoral examination



Figure 4: Panoramic radiograph

Intraoral periapical radiograph in relation to 36 revealed diffuse radiolucency in the distoocclusal aspect of the crown, loss in continuity of lamina dura and diffuse radiolucency seen at the periapical region measuring approximately 0.5 x 1 cm. Thus a radiographic diagnosis of chronic periapical abscess in relation to 36 was made. (Figure 5)

Figure 5 shows the healing of the cutaneous lesion after 3 months post-operatively.

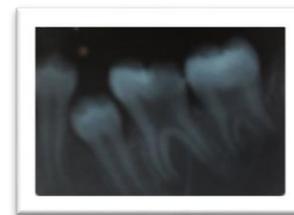


Figure 5: Intraoral periapical radiograph



Figure 6: Post-operative photograph

DISCUSSION

A fistula is an abnormal pathological communication between two cavities/ spaces or between an internal organ/ cavity and external skin surface, while sinuses are abnormal blind tracts arising from or terminating in an opening. Draining cutaneous sinuses are localized diseases of primarily skin and underlying deeper tissues. The conditions which commonly cause cutaneous draining sinuses include suppurative dental infections, osteomyelitis, infected cysts, and tubercular or fungal infections.⁸ Odontogenic infections

commonly drain internally into oral cavity. Cutaneous sinus tracts of odontogenic origin are uncommon entities and are often misdiagnosed as primary skin disease, if not properly evaluated.^{9,10} If not adequately treated, these sinus tracts may rarely lead to development of cutaneous fistula with communication of oral cavity to external skin through periapical abscess, as seen in our case. Underlying predisposing causes can be dental caries, dental trauma or periodontal disease. If not treated, infection spreads beyond dental confines and to periradicular area forming an abscess. Inflammation causes resorption of adjacent bone. Abscess may later break down internally through the oral mucosa into oral cavity. Outer spread to overlying soft tissues and external skin may lead to formation of cutaneous sinus tract. Overall, intraoral rupture of abscess is commoner than external skin rupture.⁸

When an extraoral odontogenic sinus tract occurs, it most often develops in close proximity to the affected tooth. Patients presenting with chronic suppurative lesions that resemble a cyst, furuncle, or ulcer usually seek treatment from a physician.² The sinus tract's exit is determined by the location of muscle attachments and fascial planes. Of the reported cases, 80% arise from infections of mandibular teeth, anterior teeth cutaneously drain into the chin and jaw. Premolars and molars drain to the posterior mandible or below the inferior border in the submandibular region. Cutaneous dental fistulas arising from infections of the maxillary teeth, result in sinus tracts erupting intranasally or the nasal sinus or inner canthal areas. Osteomyelitis is a rare complication.¹¹

CONCLUSION

Patients presenting with cutaneous sinus tracts of dental origin often do not have obvious dental symptoms, a possible dental etiology may be overlooked. If dental origin is suspected, the diagnosis is easily confirmed by dental examination and radiographs of the involved area. Early correct diagnosis, based

on radiologic evidence of a periapical root infection and treatment of these lesions can help prevent unnecessary and ineffective antibiotic therapy or surgical treatment, reducing the possibility of further complications such as osteomyelitis.

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How to cite this article: Sangeetha J, Balaji P, Poornima C. Cutaneous Sinus Tract of Odontogenic Origin: A Case Report. Arch of Dent and Med Res 2016;2(4):57-60.