



GLOBAL JOURNAL OF MEDICAL RESEARCH: J  
DENTISTRY AND OTOLARYNGOLOGY  
Volume 14 Issue 4 Version 1.0 Year 2014  
Type: Double Blind Peer Reviewed International Research Journal  
Publisher: Global Journals Inc. (USA)  
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

## Nonsurgical Management of Cutaneous Sinus Tract of Odontogenic Origin: A Case Report

By Dr. Gautam P. Badole, Dr. Rajesh Kubde, Dr. Mohit Gunwal & Dr. Shital G. Badole  
*VSPMs Dental college and research center, India*

**Abstract-** Draining cutaneous sinus tracts in the area of face may be caused by chronic dental infections. Misdiagnosis of these cutaneous sinus tracts usually leads to destructive invasive treatment of the skin lesions that is not curative. Diagnosis of the cause may be challenging but is the key to successful therapy. Successful repair depends primarily on removal of etiological factors. This scientific paper aims to present a case, treated successfully & closure of the tract achieved by conventional root canal therapy.

**Keywords:** *cutaneous sinus, odontogenic infection, sinus tract, trauma.*

**GJMR-J Classification:** *NLMC Code: WO 460*



*Strictly as per the compliance and regulations of:*



© 2014. Dr. Gautam P. Badole, Dr. Rajesh Kubde, Dr. Mohit Gunwal & Dr. Shital G. Badole. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License <http://creativecommons.org/licenses/by-nc/3.0/>), permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

# Nonsurgical Management of Cutaneous Sinus Tract of Odontogenic Origin: A Case Report

Dr. Gautam P. Badole <sup>α</sup>, Dr. Rajesh Kubde <sup>σ</sup>, Dr. Mohit Gunwal <sup>ρ</sup> & Dr. Shital G. Badole <sup>ω</sup>

**Abstract-** Draining cutaneous sinus tracts in the area of face may be caused by chronic dental infections. Misdiagnosis of these cutaneous sinus tracts usually leads to destructive invasive treatment of the skin lesions that is not curative. Diagnosis of the cause may be challenging but is the key to successful therapy. Successful repair depends primarily on removal of etiological factors. This scientific paper aims to present a case, treated successfully & closure of the tract achieved by conventional root canal therapy.

**Keywords:** cutaneous sinus, odontogenic infection, sinus tract, trauma.

## I. INTRODUCTION

Chronic inflammation of pulpal origin is one of the reasons for an extra oral sinus of odontogenic origin.<sup>1</sup> The discharge of purulent exudates usually is associated with periapical radiolucent area and goes through tissues and structures along the path of least resistance.<sup>2</sup> Cutaneous lesion may develop over a long period of time and is often distant from the site of primary infection. Hence successful management of these odontogenic cutaneous sinus tracts of pulpal pathology depend on proper diagnosis.<sup>3,4</sup> The site of drainage depends on the tooth which is diseased, and the apex position relatively to muscular attachments, bacterial virulence and lower host resistance.<sup>5</sup> If the apices of the teeth are above the maxillary muscle attachments and below the mandibular muscle attachments the spread of infection may be extraoral.<sup>6</sup> These sinus tracts occurring more frequently from infected mandibular teeth than from infected maxillary teeth and particularly on the chin or in the submandibular area.<sup>7</sup> The involved tooth is asymptomatic as there is absence of swelling or pain results from pressure build up.<sup>7</sup> Patient first visits a physician for evaluation and treatment. Diagnosis of cutaneous sinus tracts of dental origin presents constant challenge to practitioners.<sup>8, 9</sup> Based on literature reports, misdiagnosis has often worsened the chronicity of the lesion and has pronounced effects on facial aesthetics due to unnecessary treatments such as multiple biopsies, antibiotic regimens resulting in further skin scarring.<sup>10</sup> It has been observed that systemic antibiotic therapy will result in a temporary reduction of the drainage and

apparent healing. Root canal therapy in minimal scarring of skin.<sup>11</sup> The purpose of this report is to present a case of cutaneous sinus tract successfully managed with only conventional root canal treatment

## II. CASE REPORT

A 17 year-old female patient was referred to the Department of conservative dentistry and endodontics with a complaint of extra oral nodulous growth on her chin for the past five months. Patient had given a history of treatment for the same nodule from dermatologist since its appearance but not subsided. On extraoral examination, 0.5×0.5 cm nodule like lesion (Figure 1) was present on her chin. Palpation elicited nontender nodule and fixation of the lesion to underlying bone. Intraoral examination revealed no mucosal lesions or buccal sulcus swelling but elicited tenderness at the root apex of 31. Pulp vitality showed negative response with 31. Periapical radiograph of mandibular left central incisor revealed periapical radiolucency (Figure 2). While recording the dental history patient revealed that she met with trauma two years ago, but there was no pain present with any of the tooth. On clinical and radiographic examination, chronic apical periodontitis with 31 leading to extraoral sinus tract was made. Root canal treatment was planned with 31.



Figure 1 : Extra-oral sinus on chin

**Author α σ ρ ω:** Department of Conservative Dentistry & Endodontics  
VSPM's Dental College & Research Center, Nagpur (INDIA).  
e-mails: badole\_g15@yahoo.co.in, badoleshital@yahoo.in



Figure 2 : Periapical radiolucency with 31



Figure 3 : Post-obturation radiograph

Under the rubber dam isolation, access opening was done with 31 and samples were collected for both aerobic and anaerobic culture so that effective antibiotic treatment was started. Working length was determined with apex locator (Root ZX; Morita, Tokyo, Japan.) and confirmed with intra-oral periapical radiograph. Cleaning and shaping was completed with step-back technique using hand K-files (Dentsply Maillefer, Ballaigues, Switzerland). Chlorhexidine (Endo-CHX, Prime Dental Product, Mumbai, India.) was used as intracanal irrigant and not sodium hypochlorite, due to the risk of apical extrusion of the irrigant. Canal was dried with paper points and calcium hydroxide (RC Cal; Prime Dental Products, Thane, India.) was placed within the canal as intracanal medicament. After a week obturation was completed using gutta-percha points with cold lateral condensation technique (Figure 3). Patient was evaluated for a period of 3 months showed complete healing of extraoral sinus (Figure 4). Intra oral periapical radiograph showed complete healing of periapical radiolucency (Figure 5).



Figure 4 : Complete healing of extra-oral sinus

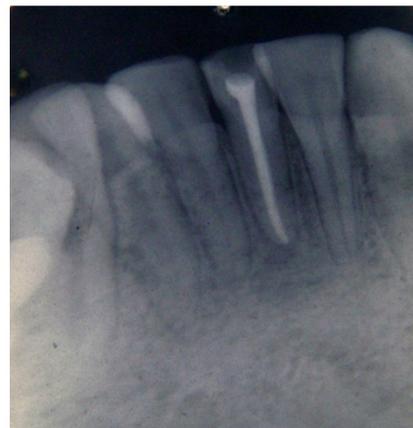


Figure 5 : Healing of periapical lesion on radiograph

### III. DISCUSSION

The cutaneous sinus tract of dental origin is an uncommon but well documented condition in the

medical, dental, and dermatological literature.<sup>6</sup> Cutaneous dental sinus or Odontogenic cutaneous sinus tract or Cutaneous facial sinus tract of dental origin was first stated by Winstock in 1950.<sup>12</sup> Approximately 80% of these sinuses related to mandibular teeth and 20% with maxillary teeth.<sup>8</sup> The characteristic lesion is erythematous, smooth, symmetrical nodule, 1-20 mm in diameter. There is periodic drainage and crusting in some cases and the lesion is depressed below the normal skin surface. A cord - like tract can be felt attached to the underlying bone.<sup>8</sup> If the sinus tract is patent a lacrimal probe or gutta-percha cone can be introduced into the opening and confirmed the affected tooth on intraoral periapical radiograph. Pulp vitality test should be performed on suspected as well as on adjacent teeth. Culture and sensitivity testing of discharged fluid should be performed to rule out fungal and syphilitic infection.<sup>13</sup>

The clinical differential diagnosis of cutaneous draining sinus tracts includes osteomyelitis, congenital fistula, salivary gland fistula and infected cyst and deep mycotic infection. In addition, skin lesions such as pustules, furuncles, foreign-body lesions, squamous cell carcinoma and granulomatous disorders show the similar superficial appearance.<sup>4</sup>

Nonsurgical endodontic therapy is the treatment of choice if the tooth is restorable or extraction if nonrestorable.<sup>11</sup> There are different opinions regarding the removal of sinus tract, some authors recommended excision of cutaneous lesion and sinus in continuity at the time of treatment of the dental pathology with immediate plastic repair of cutaneous site.<sup>12, 14</sup> Other believes that on removal of primary odontogenic cause cutaneous lesion heals without any intervention within 5 to 14 days,<sup>3</sup> dimpling and hyperpigmentation of area occurs which fade over time and a surgical revision of bigger scar might be needed to provide better cosmetic result in future.<sup>3, 15</sup>

#### IV. CONCLUSION

The key to a successful treatment of cutaneous sinus of dental origin must lay in healthy communication between the dentist and the physician in order to provide for timely recognition and treatment of such cases. Basic principles of root canal treatment should be used judiciously to create a favourable environment while effectively eliminating the pathogens and giving the body's immune, healing and repair mechanism a chance to achieve the desired result.

#### REFERENCES RÉFÉRENCES REFERENCIAS

1. Bender IB, Seltzer S. The oral fistula: Its diagnosis and treatment. *Oral Surg Oral Med Oral Pathol.* 1961; 14: 1367-76.
2. Pasternak-Júnior B, Teixeira CS, Silva-Sousa YTC & Sousa-Neto MD.. Diagnosis and treatment of

- odontogenic cutaneous sinus tracts of endodontic origin: three cases studies. *Int Endod J* 2009;42: 271-76.
3. Spear KL, Sheridan PJ, Perry HO. Sinus tracts to the chin and jaw of dental origin. *J Am Acad Dermatol* 1983;8:486-92.
4. Wood NK, Goaz PW, eds. *Differential diagnosis of oral lesions.* 4th ed. St. Louis: Mosby-Year Book;1991:264.
5. Johnson BR, Remeikis NA & Van Cura JE. Diagnosis and treatment of cutaneous facial sinus tracts of dental origin. *J Am Dent Assoc* 1999;130: 832-6.
6. Laskin DM. Anatomic considerations in diagnosis and treatment of odontogenic infections. *J Am Dent Assoc* 1964;69:308-16.
7. McWalter GM, Alexander J B, delRio CE and Knott JW. Cutaneous sinus tracts of dental etiology. *Oral Surg Oral Med Oral Pathol.*1988; 66:608-14.
8. Mittal N & Gupta P.. Management of extra oral sinus cases: a clinical dilemma. *J Endod* 2004;30: 541-7.
9. Tidwell E, Jenkins JD & Ellis CD et al. Cutaneous odontogenic sinus tract to the chin: a case report. *Int Endod J* 1997; 30: 352-5.
10. Cantatore JL, Klein PA, Liebllich LM. Cutaneous dental sinus tract, a common misdiagnosis: a case report and review of the literature. *Cutis; Cutaneous Medicine for the Practitioner* 2002; 70: 264-265.
11. Sheehan DJ, Potter BJ & Davis LS. Cutaneous draining sinus tract of odontogenic origin: Unusual Presentation of a Challenging Diagnosis. *South Med J* 2005;98: 250-2.
12. Winstock D. Four cases of external facial sinuses of dental origin. *Proc R Soc Med* 1959; 52:749-51.
13. Sakimoto E, Stratigos GT. Bilateral cutaneous sinus tracts of dental pathology : report of a case. *J Oral Surg* 1973;31:70-4.
14. Kwapis BW, Baker WD. Cutaneous fistula of dental origin. *J Oral Surg* 1956;14:319.
15. Cloffi GA, Terezhalmly GT, Parlette HL. Cutaneous draining sinus tract: odontogenic etiology. *J Am Acad Dermatol* 1986;14:94-100.

