Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 9, Issue, 09, pp.58202-58205, September, 2017

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

ISSN: 0975-833X

CASE STUDY

NON SURGICAL MANAGEMENT OF MISDIAGNOSED ODONTOGENOUS SINUS TRACT TO CHIN: CASE SERIES

***[1]Monika Khangwal, [2]Monika Khokhar, [3]Ravinder Solanki and [2]Arjun Soni**

[1]Demonstrator (MDS), PGIDS
[2]Post Graduate Students, PGIDS
[3]Associate Professor (MDS), PGIDS

ARTICLE INFO

Article History:
Received 17th June, 2017
Received in revised form
09th July, 2017
Accepted 05th August, 2017
Published online 30th September, 2017

Key words:
Apical Periodontitis,
Sinus tract.

ABSTRACT

The purpose of this article is to present conservative nonsurgical successful endodontic treatment of an odontogenic cutaneous sinus tract with exuberant extraoral granulation tissue .This case report emphasises the need for more awareness in differential diagnosis of extraoral sinus tracts by dermatologists and other medical practitioners. In the case of a single chronic suppurative or nodulocystic facial lesion, a dental clinical examination as well as a radiological assessment of the maxillary and mandibular dentition should be performed to exclude any odontogenic origin thus preventing unnecessary multiple antibiotic and surgical interventions. Antibiotic therapy should never be administered without diagnosis of the underlying dental cause. Conservative non-surgical endodontic therapy may be the choice for an extraoral sinus tract of endodontic origin.

Citation: Monika Khangwal, Monika Khokhar, Ravinder Solanki and Arjun Soni, 2017. Non surgical management of misdiagnosed odontogenous sinus tract to chin: Case series", *International Journal of Current Research*, 9, (09), 58202-58205.

INTRODUCTION

Apical periodontitis is an inflammatory disease present as acute or chronic condition. Chronic apical periodontitis may represent as a dental granuloma or a periradicular cyst and is characterised by the development of connective tissue and by the factors of destruction and repair (Abbott, 2005). In some untreated cases, the chronic inflammation can give rise to a sinus tract. A sinus tract is a drainage duct for the suppuration produced by abscesses (Baumgartner, 1984). Cutaneous sinus tracts of dental origin have been well documented in the medical, dental and dermatological literature. Such patients usually seek treatment from a physician or a surgeon instead of a dentist and often undergo multiple surgical excisions, radiotherapy, multiple biopsies and multiple antibiotic regimens (Cohen, 1990). Misdiagnosis usually leads to destructive treatment of the local skin lesions that is not curative, and is often mutilating (Foster, 1992). Extra oral fistula of odontogenic origin can be misdiagnosed and confused with traumatic injuries, furuncles, bacterial infections, carcinomas, osteomyelitis, pyogenic granulomas, foreign objects and congenital fistula (Perry, 1972). Extraorally, the sinus tract may open anywhere on the face and neck.

****Corresponding author:*** **Monika Khangwal,**
Demonstrator (MDS), PGIDS

However, it is most commonly found on the cheek, chin, and angle of the mandible, and occasionally also on the floor of the nose (Heling, 1989). The principle of managing such lesions is to remove the source of dental infection. Conventional root canal treatment and occasionally periapical surgery and extraction are effective in providing disappearing sinus tract in a very short duration. The purpose of these case series is to present a rare case of a cutaneous sinus tract with an exuberant granulation tissue and its resolution after successful endodontic therapy including one year follow up with intaoral periapical radiographic (IOPA).

Case Presentation-I

A healthy 26 year old patient reported with a chief complaint of extra-oral intermittent pus discharge on his chin region since 7 months. The patient experienced no pain, and there were no medical history and was not on any medication and had no allergies. Clinical examination evaluated the presence of a scab approximately 2×2cm in diameter in the sub mental area (Figure -1a). Previous surgical intervention by a dermatologist had not resolved the sinus tract. Based on the histological examination diagnosis of exuberant granulation tissue was made by the dermatologist. The sinus tract was inactive because of the recent prescription of antibiotics. An electronic pulp tester (Digitest D626D; Parkell Electronics, New York, NY), cold test (Endo-Ice – The Hygienic Corporation, Ohio,

USA) and a heat test (application of hot gutta-percha) yielded no response from the mandibular anteriors. All of the mandibular incisors were sensitive to percussion. A periapical radiograph showed a periapical radiolucent area associated with mandibular anteriors. A diagnosis of chronic apical abscess with Cutaneous draining sinus tract was made. After rubber dam placement, root canal treatment was initiated with removal of necrotic content of pulp chamber and root canal. Working length was established using 10k file and biomechanical preparation with step back technique was done. Irrigation during instrumentation was carried out with 3% sodium hypochlorite and final irrigation with EDTA. Calcium hydroxide paste was used as the intracranial for 1 week. After 1 week, drainage had ceased. The canal filling was performed 2 weeks after the initial appointment. Patient was recalled after one month. Clinically lesion healed completely without scar (Figure -1b). After 6 and 12 months, there was a progress in radiographic healing of the periapical lesion (Figure- 2a, 2b, 2c, 2d, 2e).

Figure 1. Clinical changes of the granulation tissue
(1a) Exophytic scab of approximately 2×2cm size
(1b) Clinical picture after one month of endodontic therapy

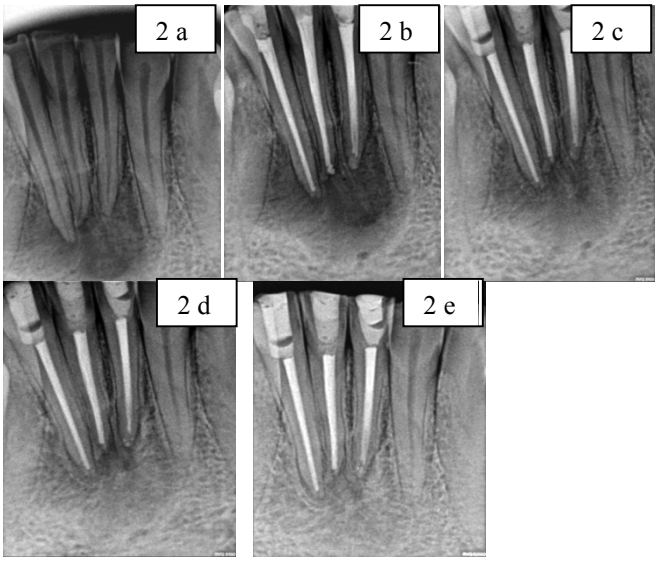

Figure 2. Periapical radiographs showing the changes of the granuloma. (2a) periapical radiolucency was visible showing Chronic apical periodontitis (2b) endodontic treatment, (2c) three months follow up showed no signs of healing, (2d) six months follow up showed ongoing bone healing, (2e) one year follow up showed healing of the periapical tissues

Case presentation- II

A 26 years old female reported to department of Conservative dentistry and Endodontics with a chief complaint of purulent discharge from lower border of chin since one year. Patient had history of previous root canal treatment five years back from civil hospital with no sinus tract at that time. During extraoral examination, purulent discharging exophytic lesion was present at lower border of chin. A periapical radiograph showed a periapical radiolucency in mandibular central and lateral incisors (31, 32, 41, 42) with poor quality of obturation (Fig-4a). Gently extraoral tracking the offending tooth with gutta percha point to visualize the trajectory during radiographic examination was done (Figure 3a). Her medical history was noncontributory. After rubber dam placement, non-surgical retreatment was planned. The root canal shaping was performed with manual k files using step back technique and 5.25% sodium hypochlorite solution as irrigant. The root canal was filled with a paste containing calcium hydroxide powder and 2% chlorhexidine digluconate. The root canal dressing was changed twice at the gap of 15 days. Afterwards, the root canal was filled with gutta-percha and sealer using cold lateral compaction technique (fig-4b). In a 6 and 12-month follow up period, a reduction of the periapical radiolucency was verified and there was definite extraoral healing of the sinus tract (Figure- 4c,4d,3b)

Figure 3. Extraoral Clinical examination- 3a) purulent discharging exophytic lesion tracked the offending tooth with gutta□percha point 3b) clinical picture of 10 days after the use of antibiotics and endodontic treatment

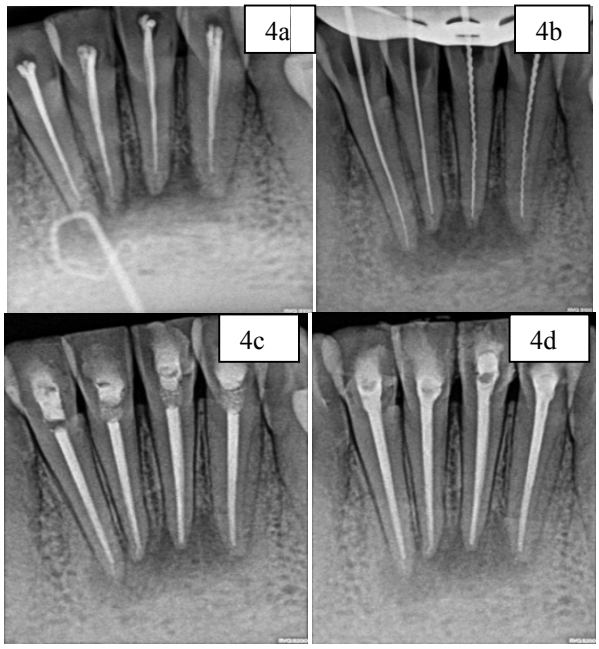

Figure 4a. IOPA showing periapical radiolucency and tracking sinus by gutta percha point (4b) Endodontic treatment under rubber dam (4c) 6 month follow up. (4d) 6 and 12 month follow up

Case presentation- III

A 28-year-old male presented with a chief complaint of extra-oral intermittent pus discharge on his chin region since 6 months. He had a history of road side trauma two years back and surgery of lower mandible was done for it. Extra-oral examination showed a scab on the skin of the inferior chin border (fig-5). An electronic pulp tester (Digitest D626D; Parkell Electronics, New York, NY), a cold test (Endo-Ice – The Hygienic Corporation, Ohio, USA) and a heat test (application of hot gutta-percha) yielded no response in the mandibular central incisors (31, 41).

A periapical radiograph showed a periapical radiolucent area around the lower central incisors (Fig-6a, 6b). The clinical diagnosis of pulpal necrosis with chronic apical periodontitis was made. Non surgical endodontic treatment was initiated and calcium hydroxide was administered as intracanal medicament. The root canal dressing was changed after 15 days for 1 month. The root canal was filled as mentioned in the other cases. The sinus tract healed in the second week of endodontic therapy. Follow up of one and six month shown in Fig-6c, 6d.

Figure 5. Extraoral scab on lower border of chin

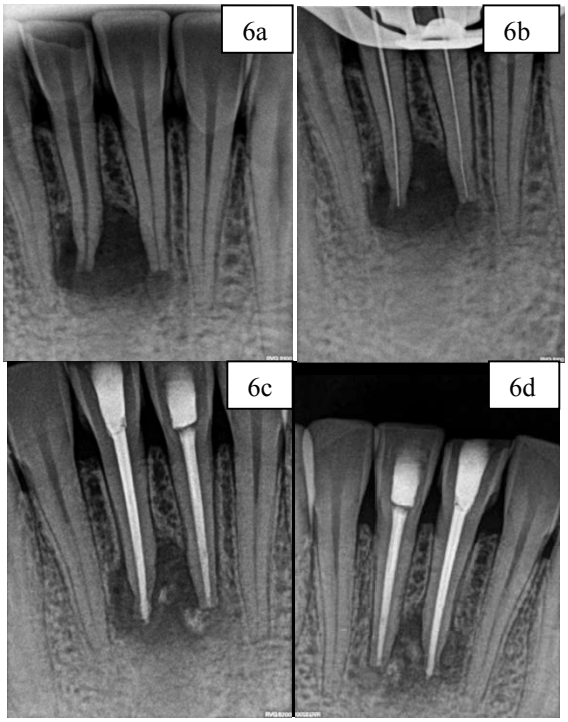

Figure 6a) IOPA showing periapical radiolucency #31,41. (6b) IOPA showing endodontic treatment under rubber dam. (6c) one month follow up and (6d) 6month follow up

DISCUSSION

An odontogenic cutaneous sinus tract is a pathologic channel that originates in the oral cavity and communicates extraorally. It commonly resembles a furuncle, a cyst, or an ulcer, or it looks like a retracted or sunken skin lesion (Gupta, 2011). Mucosal or Cutaneous sinus tract drainage depends on the path of least resistance which may lead to perforation (Craig, 1984). Extraoral sinus tracts are frequently associated with mandibular teeth and most common site of occurrence of extraoral sinus is the chin. In the literature, they have been documented in 80- 87% of the cases in the lower jaw (Guevara-Gutiérrez, 2015). In present case reports the origin of infection could be found at a mandibular incisor and ending up at the chin of the patient. From an anatomical point of view, this can be explained by the muscle attachments. When the infection spreads inferior to the mentalis muscle attachment, it can reach the skin (Kaban, 1980). Early diagnosis of the origin of the sinus tract will prevent unnecessary treatments and enhance healing. It has been reported that the longer the sinus tract persists, the more likely it is to have an epithelial lining (Valderhaug, 1973).

Many cutaneous lesion have similar symptoms making the differential diagnosis more difficult. Several clinicians misdiagnosed the origin of the sinus tract, and the patient underwent unnecessary surgical procedures and antibiotic therapy. Differentiation with traumatic lesions, salivary gland and duct fistula, basal cell carcinoma, osteomyelitis, lobular capillary haemangioma, foreign bodies, congenital fistula and local skin infections (as inflamed epidermoid cyst and folliculitis) should be done (Kabanm, 1980). In this regard, the clinician must bear in mind that the location of the sinus tract opening does not necessarily indicate the origin of the inflammatory exudates. Therefore, tracking of the sinus with a gutta-percha point, or a similar radiopaque tracer, should be carried out routinely. An accurate diagnosis should include medical history of the patient, inspection and palpation of the lesion, pulp vitality test and intraoral radiographs coupled with insertion of a probe or gutta-percha (Calışkan, 1995). The sinus tract itself has been treated with several different therapies, ranging from phenol cauterisation to apicectomy combined with fistulous trajectory curettage (Foster, 1992). Cutaneous sinus tracts of endodontic origin require no special therapy because they are expected to heal within 5 to 14 days after appropriate endodontic root canal treatment (Al-Kandari, 1999). It is based primarily on the removal of microbial infection from the complex root canal system.

Conclusion

Chronic dental infection is one of the most common causes of fistulae of the face and neck. Elimination of odontogenic cutaneous sinus tract infection by conservative endodontic therapy results in resolution of the sinus tract without need for surgical excision.

REFERENCES

Abbott, P.V. 2004. Classification, diagnosis and clinical manifestations of apical periodontitis. *Endod Topics*., 8(1):36-54.

Al-Kandari, A.M., Al-Quound, O.A., Ben-Naji, A., Gnanasekhar, J.D. 1993. Cutaneous sinus tracts of dental

origin to the chin and cheek. Quintessence International 24, 729–33.

Baumgartner, J.C., Picket, A.B., Muller, J.T. 1984. Microscopic examination of oral sinus tracts and their associated periapical lesions. *J Endod*., 10: 146–52.

Calışkan, M.K., Sen, B.H., Ozinel, M.A. 1995. Treatment of extra oral sinus tracts from traumatized teeth with apical periodontitis. *Endod Dent Traumatol*, 11: 115-120

Cohen, P.R., Eliezri, Y.D. 1990. Cutaneous odontogenic sinus simulating a basal cell carcinoma: case report and literature review. *Plast Reconstr Surg*., 86:123-127.

Craig, R.M., Andrews, J.D., Wescott, W.B. 1984. Draining fistulas associated with an endodontically treated tooth. *J Am Dent Assoc*., 108:851–2.

Foster, K.H., Primack, P.D., Kulild, J.C. 1992. Odontogenic cutaneous sinus tract. *Journal of Endodontics* 18, 304–6.

Guevara-Gutiérrez, E., Riera-Leal, L., Goméz-Martinéz, M., Amezcua-Rosas, G., Chavez-Vaca, C.L., Tlacuilo-Parra, A. 2015. Odontogenic cutaneous fistulas: clinical and epidemiologic characteristics of 75 cases. *Int J Dermatol* 2015; 54(1):50-5.

Gupta, M., Das, D., Kapur, R., Sibal, N. 2011. A clinical predicament - diagnosis and differential diagnosis of cutaneous facial sinus tracts of dental origin: a series of case reports. *Oral Surg Oral Med Oral Path Oral Radiol Endod*., 112(6):132-6.

Heling, I., Rotstein, I. 1989. A persistant oronasal sinus tract of endodontic origin. *J Endod.,* 15:132–4.

Kaban, L.B. 1980. Draining skin lesions of dental origin: the path of spread of chronic odontogenic infection. *Plast Reconstr Surg.,* 66(5):711-7.

Perry TL. Dermal sinus of dental origin. *Arch Dermatol* 106:420–1.

Valderhaug, J. 1973. A histologic study of experimentally produced intra-oral odontogenic fistulae in monkeys. *Int J Oral Surg*., 2:54–61.

****