

Surgical Management of an Extra Oral Mandibular Cutaneous Sinus Tract in a 23 Year Old Male Patient

Pathak Anjani K.*, Kumar V.**, Lal N.***, Singhal D.****, Goel K.****

Abstract

Chronic alveolar abscess, as a sequelae of pulpal necrosis, can drain through a sinus tract, which may be intra-oral or extra-oral, though the intra-oral drainage is much more common. The extra oral sinus tract can be often misdiagnosed as an exclusive cutaneous lesion and get maltreated by systemic antibiotics. This case report demonstrates that if the general health of the patient allows, such ill-treated conditions can be managed by performing single visit endodontic therapy of the involved tooth followed by surgical excision of sinus tract so as to minimize the residual scar formation and therefore, aesthetically more acceptable for the patient.

Keywords: Chronic Alveolar Abscess; Pulpal Necrosis; Cutaneous Sinus Tract.

Introduction

The term sinus tract is defined as a blind ending tract, usually lined with granulation tissue that leads from an epithelial surface into the surrounding tissue, often into an abscess cavity. A chronic pulpal inflammation is one of most common etiologies for an extra oral sinus of dental pathology [1]. The periradicular microorganisms and related bacterial by-products present there, may perforate the buccal cortical bone with the infection finally draining onto the mucosal or cutaneous surface following the path of minimum resistance, after exiting a persistently infective and necrotic pulp-canal system [2].

After the formation of a sinus tract, the periapical inflammation may persist for a significant time period as in the case of chronic abscess where because of the continuous drainage, it remains asymptomatic and becomes symptomatic when there is drainage obstruction [3]. Misdiagnosis often adds to the chronicity of the lesion and has

deleterious effects on facial aesthetics due to unnecessary scarring and dimpling. For this reason, differential diagnosis followed by a thorough clinical and radiographic examination is of paramount importance.

The case presented here is of a young, systemically healthy patient having an extra-oral cutaneous sinus tract in relation to mandibular symphyseal (chin) area, which is more common as compared to other regions like submandibular or sublingual. The management was initiated conservatively by nonsurgical endodontic treatment of the involved teeth followed by the surgical excision of the sinus tract so as to minimize the residual scar formation and dimpling as esthetics was one of the prime concerns of the patient.

Case Report

A 23 year old male patient reported to the department of periodontology with chief complaint of a painless, small nodular mass in the chin region with occasional pus discharge from it (Figure 1). The patient recalled that the complaint started 2 years back, when he started noticing a small swelling in the mid symphyseal area, which soon after, resulted in a small skin lesion with spontaneous pus discharge from it. Along with that, he was experiencing mild pain in the lower front

Author's Affiliation: *Assistant Professor **Junior Resident ***Professor and Head ****Senior Resident, Department of Periodontology, Faculty of Dental Sciences, King George's Medical University, Lucknow-226003, Uttar Pradesh, India.

Reprints Requests: Pathak Anjani K., Assistant Professor, Department of Periodontology, Faculty of Dental Sciences, King George's Medical University Lucknow-226003, Uttar Pradesh India.

E-mail: dr.anjanipathak@gmail.com

Received on 07.03.2017, Accepted on 17.03.2017

teeth while biting. Following that, he went for medical consultation from a physician who started systemic antibiotics and anti-inflammatory drugs for the same. The complaint used to reappear after every few months following the therapy. Finally the patient was referred to our institute for opinion and needful.

On the day of examination, the patient was afebrile and devoid of any systemic diseases. On extra oral examination, an erythematous nodule of size 6mm × 4mm × 3mm is seen (Figure 1). The nodule was firm on palpation and occasional pus discharge was elicited when pressed. Intraoral examination and vitality tests revealed non-vital mandibular central incisors which were not tender on percussion (Figure 2). Patient also gave the history of traumatic injury to the lower incisors while playing. Radiographic examination showed presence of diffused periapical radiolucency involving the apical 1/3rd of the root of 31 and 41 (Figure 3). Chronic alveolar abscess with extraoral draining sinus following pulpal necrosis was set as definitive diagnosis. Root canal treatment of 31 and 41 was performed. Surgical excision of sinus tract was planned as to prevent dimpling and to minimize the residual scar formation. The sinus was traced intra orally by raising a full thickness flap between the mesio facial surfaces of lower canines, providing better access. Also, it served the dual purpose of Miller's class 1 recession coverage in relation to 31 and 41 when advanced coronally as shown in the picture (Figure 4).

Simultaneously extra orally, under local anesthesia, primary incision was made around the lesion. The area was dissected to surgically remove the cord like tract of approx. 3.8cm- 4cm (Figure 5-9). The skin was undermined to relax the affected area and restore the normal facial contour. Interrupted sutures were placed extra as well as intra orally (Figure 7-8). After 3 months of follow up, the cutaneous lesion has healed completely with neat linear scar formation, which is esthetically satisfactory for the patient.(Fig 9-10)



Fig. 1: Pre op extraoral



Fig. 2: Pre op intraoral



Fig. 3: Pre op IOPA

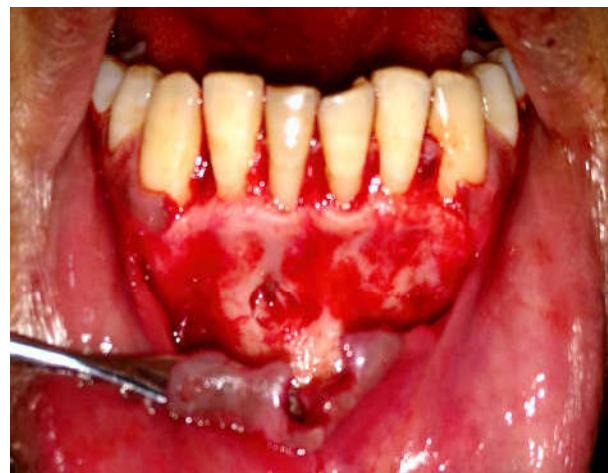


Fig. 4: Intra op



Fig. 5: Intra op



Fig. 9: Sinus tract



Fig. 6: Intra op



Fig. 10: Follow up(3months)



Fig. 7: Post op



Fig. 8: Post op

Discussion

Cutaneous sinus tract of dental origin have been documented extensively [4,5,6]. Because of its clinical appearance being very similar to many other cutaneous lesion, it can pose a diagnostic challenge. The differential diagnosis should include traumatic lesions, bacterial and fungal infections, neoplasms, presence of foreign body, local skin infections (carbuncle and infected epidermoid cyst), pyogenic granuloma, chronic tubercular lesion, osteomyelitis,

actinomycosis and gumma of tertiary syphilis. Also the less common ones like the developmental defects of throglossal duct cyst origin or brachial cyst, salivary gland and duct fistula, dacryocystitis, and suppurative lymphadenitis [7]. The examination of a cutaneous sinus tract must begin with a thorough history and awareness that any cutaneous lesion of neck and face could be of dental origin. Winstock [8] described cutaneous lesions with dental infections. Kaban [9] elaborated the path of spread of chronic dental infection. Approximately 80% of the reported cases are associated with mandibular teeth.

If the tooth is restorable, single or multi visit root canal treatment is preferred over extraction in such cases. In case of a chronic odontogenic sinus tract, the cord like tract must be eliminated by either cutting it off its insertion in the alveolar bone or by removed by complete excision. Antibiotic therapy is indicated when there are signs of systemic involvement (fever or lymphadenopathy) [10].

In this case report, the cord was removed from its origin to the point of skin attachment, which allowed relaxation of facial skin, elimination of skin dimpling in the affected area and restoration of normal facial contour.

Conclusion

Resolution of sinus tract can be achieved by elimination of the source of infection by endodontic treatment or tooth removal. But in case of an older sinus tract, wound contraction and scar tissue formation may require surgical excision of cord like tract.

The aim of this paper is to present a dental as

well as medical literature review of cutaneous sinus tract of odontogenic origin, and to present the surgical technique used to eliminate the cord like tract and dimpling of the skin for esthetic concerns.

References

1. Bender IB, Seltzer S. The oral fistula: its diagnosis and treatment. *Oral Surg Oral Med Oral Pathol.* 1961; 14:1367-76.
2. Kotecha M, Browne MK. Mandibular sinuses of dental origin. *Practitioner.* 1981; 225:910-5.
3. Swales KL, Rudralingam M, Gandhi S. Extraoral cutaneous sinus tracts of dental origin in the paediatric patient. A report of three cases and a review of the literature. [Int J Paediatr Dent. 2015; 22. doi: 10.1111/ipd.12205.
4. Cioffi GA, Terezhalmay GT, Parlette HL. Cutaneous draining sinus tract: an odontogenic etiology. *J Am Acad Dermatol.* 1986; 14(1):94-100.
5. Caliskan MK, Sen BH, Ozinel MA. Treatment of extraoral sinus tracts from traumatized teeth with apical periodontitis. *Endod Dent Traumatol.* 1995; 11(3):115-20.
6. Barrowman RA, Rahimi M, Evans MD, Chandu A, Parashos P. Cutaneous sinus tracts of dental origin. *Med J Aust.* 2007; 186(5):264-5.
7. Tidwell E, Jenkins JD, Ellis CD, Hutson B, Cederberg RA. Cutaneous odontogenic sinus tract to the chin: a case report. *IntEndod J.* 1997; 30(5):352-5.
8. Winstock D. Four cases of external facial sinuses of dental origin. *Proc R Soc Med.* 1959; 52:749-51.
9. Kaban LB. Draining skin lesions of dental origin: the path of spread of chronic odontogenic infection. *Plast Reconstr Surg.* 1980; 66(5):711-7.
10. Witherow H, Washan P, Blenkinsopp P. Midline odontogenic infections: a continuing diagnostic problem. *Br J Plastic Surg.* 2003; 56(2):173-5.