CONSERVATIVE MANAGEMENT OF EXTRA-ORAL SINUS TRACT ASSOCIATED WITH ODONTOGENIC INFECTION IN A SINGLE VISIT: REPORT OF TWO CASES

Reema Malik1* Amit Raj2, Rajul Vivek3

1Post Graduate student, Department of Conservative Dentistry and Endodontics, Faculty of Dental sciences, IMS, BHU, Varanasi-221005, Uttar Pradesh, India
2Post Graduate student Department of Prosthodontics and Implantology Faculty of Dental sciences, IMS, BHU, Varanasi -221005, Uttar Pradesh, India
3Ph D Scholar Faculty of Dental sciences, IMS, BHU, Varanasi, 221005 Uttar Pradesh, India

Received: 22-10-2016; Revised: 20-11-2016; Accepted: 18-12-2016

*Corresponding Author: Reema Malik
Post Graduate student J-39, Mansarovar Park, Shahdara Delhi, 110032 Phone no. 7275095434

ABSTRACT

Odontogenic cutaneous sinus tracts are often misdiagnosed as lesions of non-odontogenic origin, leading to the treatment of patients with unnecessary and ineffective therapies. Sinus tracts of endodontic origin usually respond well to endodontic therapy. Draining sinus tract of odontogenic origin is one of the indications for single visit endodontics, but extra-oral sinus tract is generally treated in a multiple visit procedure. The present article aims to report two cases of cutaneous sinus tracts in the submental area which were treated conservatively by endodontic treatment following single visit protocol.

Keywords: Odontogenic sinus tract, Cutaneous sinus tract, Nonsurgical treatment, Single visit root canal, Single sitting.

INTRODUCTION

Oro-cutaneous fistulas or cutaneous sinus, a tract of dental origin, though uncommon, but is a well-documented condition that usually requires dental treatment. Early diagnosis and prompt treatment minimize patient discomfort and esthetic problems, reducing the possibility of further complications such as sepsis and osteomyelitis.1 Possible aetiology includes trauma, retained roots, residual chronic infection of the jaws, and pulp disease.2 A sinus tract of endodontic origin is caused by pulp necrosis of the affected tooth. The microbiologically induced inflammation may penetrate the alveolar bone and spread along the path of least resistance. The sinus tract can open either intra-orally or extra-orally. The site of extra-oral drainage depends on the tooth involved, and on specific factors such as the virulence of the microorganism and the relation between anatomy and facial muscle attachments to determine the trajectory of the fistula3. However, it is most commonly found on the cheek, chin, and angle of the mandible, and occasionally on the floor of the nose.4

Currently, cutaneous sinus tracts of endodontic origin require no special therapy because they heal after appropriate endodontic therapy5,6. Single visit endodontics is gaining popularity over the traditional multi-visit endodontics because of various advantages. The advantages include a reduction in patient’s appointments per tooth, which would avoid inter-appointment leakage, the immediate use of a canal for the retention of the posts, particularly in the anterior region (esthetic consideration) and reduced procedural costs. Although, a draining sinus tract of odontogenic origin is one of the indications for single visit endodontics, but extra-oral sinus tract is generally considered as a multiple visit procedure. This article presents two cases of extra-oral cutaneous sinus tracts in the chin region, managed conservatively by nonsurgical endodontic treatment following a single visit protocol.

CASE 1

A 33-year-old female presented to Department of Conservative Dentistry and Endodontics, with a chief complaint of extra-oral nodular growth with intermittent pus discharge on her chin region since 4 months. The medical history was non-contributory. The patient had no idea of a previous trauma to the area. Clinical examination showed a crusty nodule approximately 6mm x 9mm in diameter in the submental area. Palpation elicited an exudatous discharge from it. Intraorally, no vestibular swelling was present. Pulp vitality showed a negative response with #41. Gutta-
percha tracing of the sinus tract confirmed the involvement of #41 (fig 1b, 1c). Thus, a diagnosis of suppurative apical periodontitis was made on the offending tooth, with a need of root canal treatment. Single visit non-surgical endodontic therapy of #41 was planned. Standard access cavity preparation was done under rubber dam (GDC) isolation without local anaesthesia. Necrotic content of the pulp chamber and root canal was removed. Working length was determined with apex locator and confirmed radiographically (Fig 2a). The oval shaped canal was cleaned and shaped using rotary nickel-titanium Protaper next instruments (Dentsply Maillefer) using crown down technique. 2% Chlorhexidine was used as intracanal irrigant instead of sodium hypochlorite, to avoid risk of apical extrusion of the irrigant. Chlorhexidine was left in the canal for 15 min to ensure complete disinfection and was dried with paper points. Final root canal obturation was done using AH Plus sealer (Dentsply DeTrey GmbH, Konstanz Germany) and Protaper gutta-percha X2 by cold lateral condensation technique (fig 2b, 2c). The access opening was restored with composite resin. At one month recall, patient showed healed sinus tract but a small depressed area over the healed region (Fig 3). Moreover, periapical radiograph showed signs of healing in periapical region.

CASE 2

A 20 year old female patient reported to the department with a chief complaint of a pus discharge from the chin area of the face since 11 months. She was surgically treated by a general surgeon twice but there was recurrence of the lesion, so she was referred for dental opinion. Patient reported trauma 6 years back. Extraoral examination revealed erythematous ulcerative lesion with continuous drainage in the submental area (fig 4b). Intra oral examination showed discoloured mandibular left and right central incisor with radiographic evidence of periapical pathology (fig 4a). Pulp sensibility test revealed non-vital #31 and #41. Endodontic treatment was completed in both teeth in single visit as described in the previous report (fig 5). The patient was recalled after 2 months. Clinically the draining lesion had completely healed with scar formation (fig 6).


DISCUSSION

Patients with cutaneous facial sinuses are difficult to diagnose as they may or may not always have dental symptoms, and the cutaneous sinus may develop at a distance from the origin of infection. This may lead to misdiagnosis and delay in accurate treatment protocol. They may undergo unnecessary multiple biopsies, multiple surgical interventions, multiple antibiotic regimens, and even be subjected to radiation therapy or electrodessication, as evident in the second case. However, recurrence of sinus tract may take place because the primary dental etiology is never taken care of. Therefore, early and proper diagnosis is essential. An accurate diagnosis should include medical history of the patient, inspection and palpation of the lesion, pulp vitality test and intraoral radiographs. Periapical radiography is necessary to demonstrate bone loss in the apex of the infected tooth because a tooth with a necrotic pulp can appear normal or have slightly altered color.

In addition, the insertion of a probe or gutta-percha through the fistula to take radiographs is an effective method for determining the involved tooth. Nonsurgical endodontic therapy is the treatment of choice if the tooth is restorable and extraction is considered in non-restorable cases. Chlorhexidine was advocated as root canal irrigant as it can eliminate the gram positive and the gram negative anaerobic bacteria in 15 minutes. AH Plus sealer was used because of its anti-microbial activity and a good flow, thus, it diffuses into the dentinal tubules and creates microbial inhibition. Conventionally, the root canal treatment was performed as a multiple visit procedure, as it was thought that the elimination of bacteria, and therefore its success, was possible only with a prolonged period of intra canal antimicrobial medicaments. But the healing potential for the teeth that are treated in one or two visits with the placement of an intra canal medicament appears to be similar. The healing rate of single-visit and multiple-visit root canal treatments is also similar, even for infected teeth. Moreover, it has been found that the positive...
culture which is obtained just before the obturation, does not suggest the success of the endodontic treatment. It has been suggested that the teeth with chronic apical periodontitis and a draining sinus tract can be endodontically treated by a single visit procedure. This sinus tract may act as a site of drainage for the residual inflammatory exudates. But the treatment of extra-oral sinus tract with single visit is generally not attempted probably because intra-oral and extraoral sinus tract are considered different entities.

The complete healing of the present case suggests that extraoral sinus tract can heal successfully using single visit protocol.

**CONCLUSION**

A dental cause must always be considered for any cutaneous sinus tract involving face or neck. 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. It was observed in the present case, that extra-oral sinus tract of endodontic origin could be treated successfully using single visit protocol.

**REFERENCES**


Source of support: Nil, Conflict of interest: None Declared