Cutaneous Sinus Tract of Dental origin. A Case Report

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Abstract

A cutaneous sinus tract of dental origin is the result of pulp necrosis and asymptomatic apical periodontitis. Patients do not associate this lesion with dental pathosis and consult various medical specialists as internists, dermatologists, surgeons, looking for a solution to their problem. A case of a cutaneous sinus tract of endodontic origin with healing as a result of cleaning, disinfecting and sealing the root canals is presented.

Key words: Biofilm, Cleft, Palatal expander, Streptococcus

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Introduction

Cutaneous sinus tract of endodontic origin is a rare dermatosis originating from a tooth affected with pulp necrosis and asymptomatic apical periodontitis⁵. The site of extraoral drainage depends on the location of the affected tooth and other specific factors such as the virulence of the microorganisms involved, and the relationship between the surrounding anatomy and facial muscles insertions⁶. Sometimes patients do not associate this lesion with a dental problem so they seek advice from different specialists mainly dermatologists or surgeons looking for a solution to their problem. When misdiagnosed and treated with antibiotics or surgical therapies the end result could be a chronic persistent lesion³⁴. According to the literature, this kind of sinus tract is associated more often with mandibular molars 80-87%⁵.

The purpose of this paper is to report a case of a cutaneous sinus tract of dental origin associated with a mandibular first molar with asymptomatic apical periodontitis, and the healing obtained after non surgical endodontic treatment.

Case Report

A 22 year old female patient was seen at the endodontic graduate clinic. The patient complained about feeling a lump on the left side of her cheek. Her medical history does not show any abnormalities. Upon extraoral examination a skin lesion was observed on the area above the lower border of the mandible on the left side (Fig. 1A). At this time there was no exudate or pain present in the area. Intraoral clinical examination showed the mandibular left first molar with an occlusal temporary restoration and there was no response to thermal tests. On radiographic examination a pulp stone was observed in the pulp chamber, and also periapical radiolucent areas associated with the mesial and distal roots (Fig.1B).
The diagnosis was: cutaneous sinus tract associated with the mandibular left first molar with pulp necrosis and asymptomatic apical periodontitis.

**Clinical Procedure**

**First session:** After local anesthesia and rubber dam isolation the area was disinfected. Upon access opening a pulp stone was removed from the pulp chamber and the presence of 4 root canal orifices was observed on the pulpal floor. Working lengths were determined and biomechanical preparation was performed using hand and rotary files K3XF® (Sybron Endo). The mesial canals were instrumented to #35 .04 taper and the distal canals were instrumented to #40 .04 taper. Manual irrigation with 5.25% sodium hypochlorite was done and the canals were dried and medicated with calcium hydroxide Ultracal® (Ultradent). A temporary filling with glass ionomer was placed.

**Second session two weeks later:**
At this visit the patient was asymptomatic and the skin lesion was no longer present, however the temporary filling was broken and the canals contaminated so the tooth was irrigated, dried and medicated with calcium hydroxide.

**Third session: 4 weeks after second appointment**
After access opening and irrigation, the canals were reinstrumented, followed by a rinse with 17% EDTA, then a final irrigation with 5.25% sodium hypochlorite. Canals were dried and obturated with sealer and gutta-percha lateral condensation. The access cavity was sealed with a glass ionomer cement and a final radiograph was taken (Fig. 2 A). A control radiograph was obtained 6 months later, a significant reduction of the periapical radiolucency was observed, (Fig. 2 B) the patient was asymptomatic and skin lesion had disappeared. (Fig 2 C)

**Discussion**

Dental pathosis is the most common cause of cutaneous sinus tract of the face and neck region and should be the primary suspect in a differential diagnosis. However there are other pathosis of non odontogenic origin that can produce cutaneous sinus tracts so the opinion of the dentist is most important to establish the differential diagnosis [6]. Other etiologies include osteomyelitis, pyogenic granuloma, salivary gland and duct fistulas, congenital sinus tract, infected cyst, deep mycotic infection and some skin lesions such as pustules, furuncles, foreign-body lesions, malignancy and granulomatous disorders [4]. Recognition of the nature of these lesions and prompt treatment reduces patient discomfort, aesthetic problems and future complications. In this case the patient went straight to a dentist who was able to determine the origin of the dermal lesion. The elimination of infection within the root canal system is very important for the favorable evolution of this type of lesion [7]. It is very important to keep in mind the internal anatomy of the teeth in order to identify possible variations with the presence of various canals. The mandibular first molar usually presents two canals in the mesial root and one or two canals in the distal root [8, 9]. In this case four canals were identified, two in the mesial root and two in the distal root and a non surgical root canal treatment was performed for the left mandibular first molar which had an infected pulp. The instrumentation was performed using hand and rotary files, along with copious Sodium hypochlorite irrigation. Sodium Hypochlorite is one of the most effective root canal irrigants due to its excellent anti-septic and tissue-dissolving properties [10]. In addition, Calcium Hydroxide medication was placed in the pulp chamber and canals because of its antibacterial potential [11].
Conclusion
In the present clinical case the cutaneous sinus tract originated from a tooth with an infected dental pulp. The disinfection, medication and sealing of the root canals promoted the disappearance of the skin lesion, and the overall prognosis of the tooth was considered very favorable.

References
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