



Case Report

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Conservative Management of Chronic Dentoalveolar Abscess with Extraoral and Intraoral Sinus Tract in A Young Permanent Molar: A Case Report

Nagarathna C¹, Berin Dhanya N B²

¹ Professor, Department of Pediatric and Preventive Dentistry, Rajarajeswari Dental College and Hospital, Bangalore, Karnataka 560074, India

² Post Graduate Student, Rajarajeswari Dental College and Hospital, Bangalore, Karnataka 560074, India

Abstract

This case report discusses the management of a girl aged 11 years with a chronic periapical abscess with both non-healing extraoral and intraoral sinus tract having multiple stomata. An 11 years old girl reported with the chief complaint of non-healing extraoral draining sinus on lower right cheek for 2 months. Endodontic treatment was initiated followed by Calcium hydroxide intracanal medicament was given for 14 days. In the subsequent appointment after 1 week, healing of intraoral and extraoral sinus tract was evident with no symptoms. At this appointment, the intracanal medicament was washed out from the canals followed by obturation. This case report strengthens the importance of proper diagnosis and conservative management and the follow up of non-healing sinus tract that promoted good healing and better prognosis and showed satisfactory outcome. Conservative treatment should be taken into consideration whenever possible in children.

Keywords: Dentoalveolar Abscess, Infections, Sinus Tract.

INTRODUCTION

Chronic dentoalveolar abscess is a long standing, low grade infection of the periradicular alveolar bone, the source of the infection could be extensive dental caries involving the root canal or periodontal space resulting in natural death of the pulp with extension of the infective process periapically. It through a sinus tract either intraorally or extra orally. The the spread of inflammation until the cortex of bone is destroyed and when the periosteum is pierced it results in sinus.

The etiology in this case being long standing deep dentinal caries and dental neglect. Time and again the accurate diagnoses of such cutaneous sinus tracts have remained a challenge, as the initial appearance of these lesions are similar to other conditions such as skin infections, furuncles, ingrown hair or occluded sweat gland ducts, osteomyelitis, neoplasms, tuberculosis, actinomycosis, and carcinomas.^[1]

CASE DESCRIPTION

A 11 years old female patient reported to our department with a chief complaint of non-healing skin lesion on lower left cheek region for 1 month and pus discharge since 2-3 days. She was moderately built and well nourished with vital signs being normal and no other systemic abnormality was noted. The past dental history revealed the patient had visited a private practitioner 2 months back and undergone temporary intervention, did not comply with further follow up. On extraoral examination, an erythematous area of approximately 1.8x1cm in diameter was found along the inferior left border of the mandible approximating the angle of mandible. The opening of the lesion was found closed by scab formation with pus discharge on palpation. On intraoral examination, the presence of a temporary restoration was found in 36 (Fig: 3) along with vestibular obliteration, tenderness and intraoral sinus tract (Fig: 4). Tooth no. 36 was found slightly sensitive to percussion and palpation with no mobility.

Investigations

1. **OPG (Fig):** It revealed the presence of diffuse inter-radicular radiolucency extending periapically in relation to tooth no. 36, evidence of restorative material on the occlusal aspect of 36.

*Corresponding author:

Dr. Berin Dhanya N B

Post Graduate Student,
Rajarajeswari Dental College
and Hospital, Bangalore,
Karnataka 560074, India

Email: berindhanya@gmail.com

2. **Sinus tract tracing using gutta-percha (GP):** The source of the lesion (sinus) was determined radiographically using a GP point. The radiograph showed a GP point extending into the furcation area of tooth no. 36 and confirmed it as the source of draining sinus. The radiograph also reveals external surface resorption along the inner aspect of cervical third of mesial and distal root.

Final Diagnosis

Finally it was diagnosed as Chronic dentoalveolar Abscess i.r.t 36 associated with extra and intraoral sinus tract.

Treatment

A conservative approach of non-surgical endodontic therapy was elected. In the first appointment, after proper isolation & under aseptic conditions access cavity preparation was done i.r.t 36, working length was determined using Ingle's radiographic method followed by copious irrigation with the alternate use of normal saline and 1.0% sodium hypochlorite (NaOCl), open dressing was given. In the second appointment after one day, BMP was done till 35 size K file, Calcium hydroxide was mixed with sterile saline solution to a creamy consistency and condensed into the root canals and left inside the root canal system for 14 days. In the third appointment, the calcium hydroxide intracanal medicament was washed out from the canals followed irrigation with normal saline and 1.0% sodium hypochlorite (NaOCl), closed dressing was given using cavit. After one week, Master cone selection done i.r.t 36, Obturation done i.r.t 36 using cold lateral condensation technique with application of sealer, Access cavity was filled with type IX GIC. After 15 days, the favorable healing of the extraoral sinus tract was noted with absence of signs and symptoms. Tooth preparation was done i.r.t 36, Stainless steel crown cementation done.

Outcome and Follow up

At the 1month follow-up, there was complete closure of the extraoral opening with significant healing. The patient was comfortable as there were no symptoms. At 6 months follow-up there was complete healing of the sinus tract with scar formation. The teeth were asymptomatic and the patient was comfortable. The 6 month follow up radiograph shows healing of interradicular and periradicular radiolucency by bone deposition.

DISCUSSION

Chronic inflammation of pulpal origin is one of the reasons for an extraoral sinus of odontogenic origin. The purulent discharge from the odontogenic infection will move towards the path of least resistance from the periapical area. In our case, the lingual cortical plate has been penetrated leading to the formation of the sinus tract. Periradicular pathoses may result in formation of a fistulous sinus tract. In such cases, the inflammatory exudate travels through tissues and structures of minor resistance to exist anywhere on the oral mucosa or the skin. Muscular attachments determine whether the sinus tract will open intraorally or extraorally [3].

The uniqueness of the present case is that considering the age of the child, size of lesion, this is a rare presentation of sequelae of pulpitis leading to the involvement of sinus tract opening on the skin surface. Generally an extraoral sinus tract of odontogenic origin is often misdiagnosed or neglected, as the patient suspects it to be a skin lesion. Approximately 50% of the patients go through unnecessary surgical excisions, radiotherapy, antibiotic therapy and multiple biopsies before the correct diagnosis is established [4].

Nonsurgical endodontic therapy, sometimes complemented by surgery, or dental extraction, is the preferred treatment for extraoral sinus tracts of endodontic origin. But it should be highlighted that several cases of odontogenic extraoral sinus tracts have been treated by surgical excision

with the source of infection being a grossly decayed tooth. In such cases, an endodontic treatment could not be considered as a mode of treatment [4].

In our case, considering the age of the patient conservative management was done, sodium hypochlorite is used as an irrigant which has antibacterial property, tissue dissolving capacity and calcium hydroxide has been used as an intracanal medicament which has highly alkaline pH (approx.12.5–12.8), antimicrobial, tissue dissolving capacity, neutralise LPS, promote periodontal repair, acts as physical barrier. The antimicrobial properties of calcium hydroxide are achieved as a result of its dissociation into Ca^{2+} and OH^- ions along with its alkaline pH of 12.5 [5].

Complete healing of the extraoral sinus indicates the adequacy of the disinfection procedure and it confirms the existing opinion of the management of such an endodontic infection. Unlike intraoral sinus tracts, extraoral tracts will heal with granulation tissue thus leaving a cutaneous scar [6]. Therefore, the patient needs to be advised of a possible surgical revision of the scar. Usually, the surgical revision is uneventful and enhances cosmetic results.

This case report strengthens the importance of proper diagnosis and conservative management and the follow up of non-healing sinus tract that promoted good healing and better prognosis and showed satisfactory outcome. Conservative treatment should be taken into consideration whenever possible in children.

CONCLUSION

This case report indicates how history, correct diagnosis and appropriate treatment of endodontic infection associated with sinus tract can be conservatively healed with endodontic treatment alone. Cleaning, shaping and using intracanal medicament before obturation can heal the persistent sinus tract.



Figure 1: Presence of extra oral sinus tract



Figure 2: Intraoral sinus tract i.r.t 36



Figure 3: OPG



Figure 7: Stainless steel crown placement



Figure 4: Sinus tract tracing using gutta percha, Gutta percha cone is used to track the origin of the sinus tract



Figure 8: Healing of extraoral sinus tract



Figure 5: Working length determination



Figure 9: Follow up at 1 month

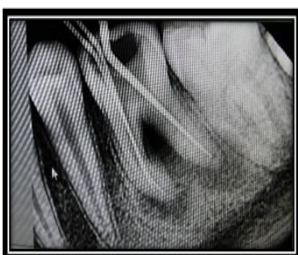


Figure 6: Master cone selection & obturation



Figure 10: Follow up after 6 months

Conflicts of Interest

The author reports no conflicts of interest.

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ORCID ID

Nagarathna C: <https://orcid.org/0000-0002-0678-8850>

Berin Dhanya N B: <https://orcid.org/0000-0002-6279-4083>

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