



Management Of Oro-Facial Sinus Tract with Shoe Lacing Technique: A Case Report

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Abstract

Facial sinus tracts of odontogenic origin represent one among the many types of sinus tracts that may form on the face and neck region. They are usually present on the chin and cheek region. The facial sinus resolves rapidly if the lesion is recognized early and diagnosed properly followed by surgical excision of sinus tract, removal of offending tooth and facial closure is performed.

Keywords: Oral, Facial sinus tract, Excision

INTRODUCTION

Facial sinus tracts of the face and neck are formed by many conditions that occur inside and outside the oral cavity of these, dentoalveolar abscess is the most common lesion encountered by the dentist. However, Facial sinus tracts are associated more with periapical abscess than with the other types of dentoalveolar abscesses.¹ However, only 50% of the patients experienced dental pain and the involved teeth are not always tender to percussion.² A sinus tract of endodontic origin is caused by pulp necrosis followed by invasion of microorganisms causing an inflammatory lesion in the periapical area of the affected tooth. The microbiologically induced inflammation may penetrate the alveolar bone and spread along the path of least resistance. Eventually, the inflammatory process can reach the surrounding soft tissue and form a path for drainage. The site of extraoral drainage depends on which tooth is diseased, and on specific factors such as the virulence of the microorganism and the relation between anatomy and facial muscle.³ In the medical literature, approximately half the patients reported as having a Facial sinus tract of dental origin have undergone multiple unsuccessful attempts at incision and drainage and numerous lengthy

trials of antibiotics.⁴ When a draining lesion is observed on the facial skin, an endodontic origin should always be considered in the differential diagnosis, including suppurative apical periodontitis, osteomyelitis, pyogenic granuloma, congenital fistula, salivary gland fistula, infected cyst, and deep mycotic infection.⁵ Odontogenic sinus tracts appear as a papule or nodule with purulent discharge usually in the chin or jaw region.⁶

The treatment of choice for facial sinus tracts of dental origin is excision of the sinus tract and Facial lesion followed by removal of offending tooth and usually resolves within 1-2 weeks. The area usually heals with slight dimpling and hyper pigmentation, which frequently diminish with time. Cosmetic surgical revision may be required if there is significant Facial retraction or dimpling from a residual ~~tra~~

Case report: A twenty-nine-year-old female patient was referred to our Oral Surgery PG department with complaint of pain and frequent fluid discharge from right maxillary posterior region since 6 months. On extraoral examination Facial wound discharge was observed over right maxillary posterior region in relation to first molar and second premolar region (**Fig.1**).



Figure1: Preoperative right profile view

Intraoral examination presented with poor oral hygiene, decayed first right maxillary molar teeth. No altered sinus opening intraorally in relation to molars region (**Fig.2**). On palpation skin over and around Facial infected wound was firm and fixed to underlying structure and intraorally first molar teeth were tender with periodontally weak. Provisional diagnosis was confirmed as oro-facial sinus tract in relation with right maxillary first molar. Radiographic features showing radiolucency of crown and periapical region of first molar teeth in first quadrant confirms deep proximal caries involving distal portion of first molar, and periapical infection as well (**Fig.3**). A detail case history, extraoral and intraoral examination with radiographic features confirmed with final diagnosis as oro-Facial sinus tract.



Figure 2: Preoperative intraoral view



Figure 3: Preoperative Orthopantomogram X ray view

Blood investigations revealed normal study and case was planned for surgical excision of sinus tract along with necrotic Facial part and removal of affected tooth followed by Facial approximation under local anaesthesia. Local anaesthesia 2% Lignocaine with

1:80000 adrenaline was deposited around the healthy region of Facial sinus tract, followed by placing of the elliptical incision. Necrotic skin was dissected and identified the sinus tract followed by deep dissection along the sinus tract to reach near apical region of an involved tooth. After dissection and separation around the sinus tract, excision of necrotized Facial part and sinus tract was removed completely through and through from extraoral to intraoral followed by extraction of right first maxillary molar tooth (**Fig.5**). tby giving elliptical incision around facial surface of fistula around whole margin so granulation tissue is removed and then deepithilization was done by using gauza piece so that to achieve complete excision of sinus tract , surgical site was copious irrigated and cleaned with betadine and saline solution and followed by layer by layer closure of wound extraorally and intraorally by shoe lacing technique suturing procedure (**Fig. 6**). Sutures are removed on after a 2 week postoperatively. (**Fig. 7,8**).



Figure 4 : Excision of oro-facial sinus tract with extracted tooth



Figure 5: Wound showing complete excision of oro- Facial sinus tract through and through



Figure 6: Closure of wound with vicryl and prolene suture material



Fig 7: Suturing



Fig 8: Post-Operative Pic after 15 Days

Discussion:

Facial sinus tracts of the face and neck may present a diagnostic problem, because they represent numerous pathologic conditions ranging from the common periapical abscess to rare developmental anomalies such as the first branchial arch fistula. A sinus tract prevents swelling or pain from pressure build-up, because it provides drainage from the primary odontogenic site.³ Evaluation of a Facial sinus tract must begin with a thorough history and the awareness that a Facial lesion of the face and neck could be of dental origin. Patients may not remember an acute or painful onset, and only half recall having a toothache. In addition, many patients with dental sinuses have a history of diffuse periodontal disease and gingivitis. Therefore, careful questioning of the patient about past symptoms (including dental caries, oral trauma, and periodontal disease) and oral hygiene regimens may help physicians identify a dental etiology.⁴ However; such Facial lesions do not always reveal the origin of the infection, and only few patients' report toothaches and other symptoms, complicating definitive diagnosis.⁵

Facial retraction or dimpling may be visible because of the fixation of underlying tissues through a sinus tract. Palpation of the tissues surrounding the sinus may reveal a cordlike tract attached to the underlying alveolar bone in the area of the suspect tooth. During palpation, production of a purulent discharge confirms the presence of a sinus tract. In addition, finding any discharging Facial lesion on the face or neck calls for an intraoral examination, which may

lead to discovery of one or more severely decayed teeth or a healthy-looking tooth. A lacrimal probe or gutta-percha cone can be used to trace its path from the Facial orifice to the point of origin. Dental aetiology can be confirmed by tracing the sinus tract to its origin with the help of radiographic techniques. An apical radiograph may determine the origin of the Facial sinus tract; a radiolucency is seen at the apex of the infected tooth.

The differential diagnosis should include trauma, foreign body reaction, pyogenic granuloma, furuncle, and inflamed pilar or epidermal cysts. Consideration should also be given to neoplastic processes (eg, basal and squamous cell carcinomas) and infectious causes (eg, osteomyelitis, actinomycosis, tuberculosis, gummata of tertiary syphilis). Rarely, developmental defects (eg, brachial cleft and thyroglossal duct cysts) may cause a Facial sinus tract to develop.⁴ The histology of these tracts is often characterized as fragments of granulation tissue that are focally lined by epithelium. Most infections are polymicrobial, and culture often yields growth of anaerobes or facultative anaerobes, such as *Streptococcus* species.⁶ It has been observed that system antibiotic therapy will result in a temporary reduction of the drainage and apparent healing. Surgical excision of Facial sinuses tract followed by extraction of offending tooth is the choice of treatment.

References:

1. M. A. Al-Kandari, J. D. Gnanasekhar, S. Al-Homaidah, D. Al-Khalifa. Facial sinus tract of Julie L. Cantatore, Peter A. Klein, MD, Lawrence M. Lieblich, MD. Facial Dental Sinus Tract, a Common Misdiagnosis: A Case Report and Review of the Literature. *CUTIS* 2002; Vol. 70; 264-67.
2. George G. Sotiropoulos, Eleftherios-Terry R. Farmakis. Diagnosis and Conservative Treatment of Extraoral Submental Sinus Tract of Endodontic Origin: A Case Report. *Journal of Clinical and Diagnostic Research*. 2014; Vol-8(10):ZD10-ZD11.
3. Rahul Mishra, Tayyeb Sultan Khan. Facial sinus tract in association with traumatic injury to the teeth: *IJCPD* 2013; 6(3); 205-07.
4. Dental origin on the face. *Dental News*, *DENTAL NEWS*, 1996: Vol. 3, No. 3; 13-18.

5. Jun Tian, Guobin Liang, Wenting Qi and Hongwei Jiang. Odontogenic Facial sinus tract associated with a mandibular second molar having a rare distolingual root: a case report. Tian et al. *Head & Face Medicine* 2015; 11-13.
6. Dr. Sunandan Mittal, Dr. Tarun Kumar, Dr. Shifali Mittal, Dr. Jyotika Sharma. Management of Facial Sinus Tract of Endodontic Origin: Two Case Reports. *Journal of Nepal Dental Association – JNDA2014: Vol 14, No 2; 68-71*