

Case Report

Cutaneous Dental Sinus Tract: A Challenging Diagnosis

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Abstract: Cutaneous odontogenic fistulas or sinus tracts are frequently misdiagnosed and incorrectly treated, leading to unnecessary procedures and patient suffering. A 30-year-old patient referred to us with a chronically draining lesion on his cheek. The clinical and radiologic examination reveal a pulpal necrosis of a decayed first molar which is the most probable dental origin. The absence of total healing of cutaneous sinus tract after endodontic treatment of the first mandibular molar lead to search an eventual second etiology; a disinclused third molar. After the extraction of the disinclused third molar, the lesion showed an obvious healing. This double etiology has extended the treatment and delayed the healing.

Keywords: Cutaneous Sinus tract, endodontic treatment, extraction, healing.

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INTRODUCTION

An odontogenic cutaneous sinus tract is a pathologic canal that initiates in the oral cavity but opens externally at the cutaneous surface of the face or neck.

It still represent a diagnostic dilemma due to its clinical similarity to bacterial infections, furuncles, traumatic injuries, osteomyelitis, and congenital fistula or to the presence of multiples etiologies.

A delay in correctly diagnosing these types of lesions can result in ineffective and inappropriate treatment [1].

Several factors such as the path of least resistance, gravity, virulence of microorganisms, host resistance, and anatomic arrangement of neighboring

musculature and fasciae may also lead to cutaneous sinus tract formation [2, 3].

In this paper we will present a case of cutaneous sinus tract on the lower cheek secondary to pulpal necrosis of the first molar and/or disinclusion of the third molar. This double etiology has extended the treatment and delayed the healing.

As patients with cutaneous facial sinus tracts of dental origin often do not have obvious dental symptoms, possible double dental etiology may be overlooked.

Case History/Examination

A 30-year-old patient, without medical history, consults for an unsightly cheek lesion. Extraoral examination reveals a productive, non-retractile, evolving cutaneous fistula (fig. 1) for a month, associated with subacute inflammation.



Fig. 1: Cutaneous fistula

The extraoral examination reveal no genial or submandibular swelling. Painless palpation brings out pus. The opening mouth is normal. The intraoral examination shows a deep decay on 36 (fig. 2-a); the 38 is included with the presence of a 5 mm periodontal pocket mesial to 38. The vitality test is negative on the 36, the axial percussion is not painful. The lower left vestibule is free with normal-looking mucosa. The search

for a fistulous cord by tensioning the cheek is negative. The panoramic X-ray shows a periapical image related to 36 (fig. 2-b).

The insertion of the locating cone in the fistulous tract, causes a lot of pus to well up (fig. 2-c). The retro-alveolar X-ray was inconclusive; the causal tooth could not be confirmed.

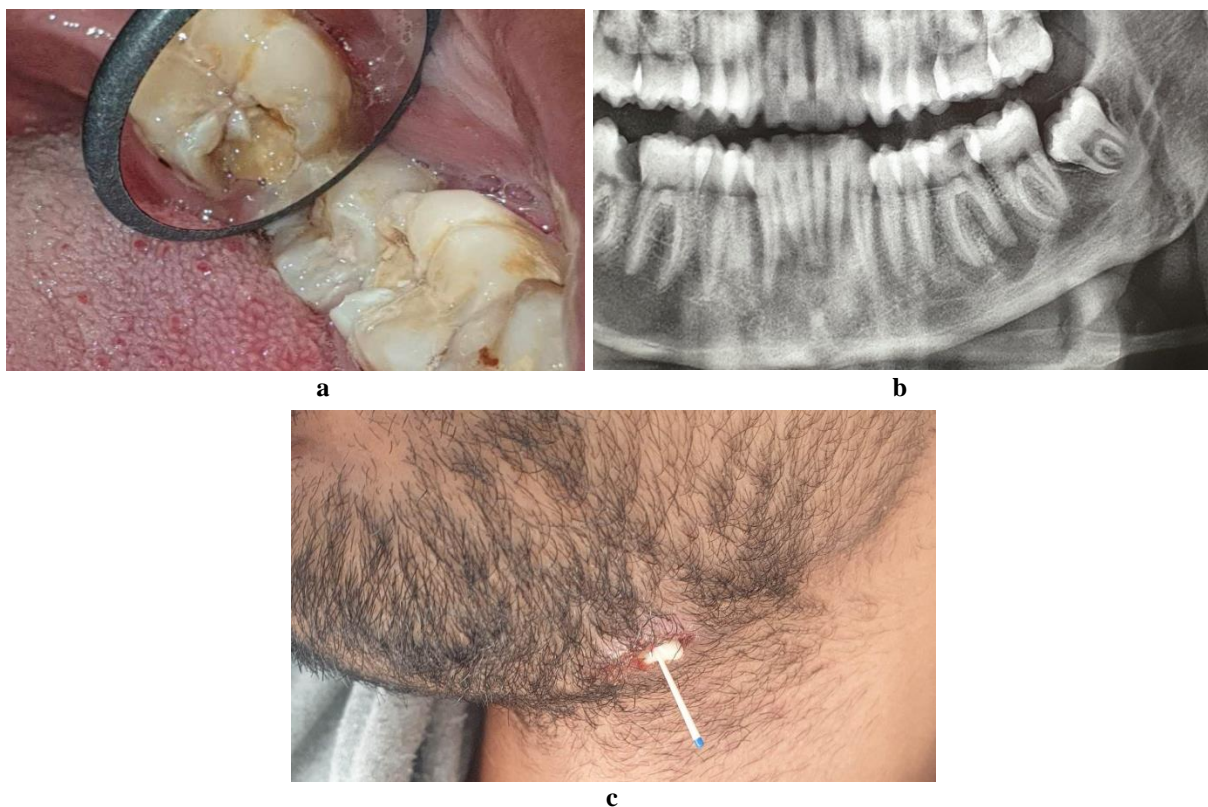


Fig. 2: a-The intraoral examination shows a deep decay on 36; b- Panoramic radiograph: periapical lesion regarding 36; c- locating cone

Treatment

At the end of the clinical and radiological examination, the diagnosis of chronic periodontitis on the 36 is retained. The usual treatment was carried out: endodontic treatment and disinfection of the fistula with sodium hypochlorite (Dakin_) from the skin orifice.

The first session, a canal shaping and copious irrigation with hypochlorite sodium 5,25% was done, followed by a canal filling with calcium hydroxide, 2 weeks later there was a slight improvement (fig. 3), the final canal filling was done. One week later, the definitive coronary obturation was made with composite

resin and a radiological control appointment was fixed at 1 month.



Fig. 3: Regression of the sinus tract 2 weeks after endodontic treatment and calcium hydroxide dressing

Outcome and follow up

Unfortunately, at the control session, the patient returns with reappearance of the productive fistula (fig.

4-a) without intraoral manifestations nether radiographic symptoms (fig. 4-b).



a



b

Fig. 4: a- Recurrence of pus discharge from cutaneous fistula 5 weeks later; b- Rx panoramic: 5 weeks after endodontic treatment of tooth 36

The persistence of this fistula leads to the search for another etiology: we suspect the communicating periodontal pocket on the mesial side of 38 with its pericoronal sac (desincluded tooth) although there are no

obvious clinical signs (absence of pain and inflammation). The patient is suggested to proceed at the extraction of the 38. The evolution of the cutaneous fistula is very favorable in about fifteen days (fig. 5).



Fig. 5: Healing of cutaneous fistula 15 days after extraction of tooth 38

DISCUSSION

Cutaneous sinus tracts of dental origin have been well-documented in both medical [4, 5] and dental literature [6].

A dental infection should be suspected as the primary etiology in chronic draining cutaneous sinus tracts of the face and neck. This diagnosis might easily be overlooked by physicians therefore patients may undergo many inappropriate surgeries and courses of antibiotics. However even dentist can overlook the right dental etiology.

Clinicians should carefully investigate the possibility of a potential chronic odontogenic infection. Radiographic examinations, conventional or advanced imaging, should be performed to identify any radiolucency at the apex of the suspected teeth. These examinations could show the presence of infection. These investigations are notably more important if multiple teeth are suspected [7].

Tracing with an endodontic gutta percha point along the mucosal sinus tract during the radiographic examination can identify the affected tooth. However, this is not evident with cutaneous sinus tracts due to the distance between the orifice of the fistula and the alveolar bone as well as the presence of multiple levels: Cutaneous, muscular, and mucosal [8].

In the present case the locating cone was inconclusive and the dental origin was not confirmed.

At the first consultation, the clinical examinations and radiological point towards the endodontic focus on 36. The fistula sits in the lower genian area, facing of the 36 mortified.

Thus the treatment of the probal causal tooth (the 36) has been done and a check-up appointment has been set.

Evolution is often favorable within the usual period, between 5 and 15 days after elimination of the periapical infectious focus [9].

In the reported case, the dental origin has been suspected but not the probable existence of two infectious foci.

The persistence of the cutaneous fistula despite the therapies undertaken has led to the search for another etiology. The wisdom tooth, which is the second infectious focus likely to be the origin of a low genian cutaneous fistula, was not implicated initially in the absence of clinical and radiological signs (inflammation or infection). The anamnesis, considered essential for the search for the etiology of a cutaneous fistula, did not make it possible to suspect the tooth of wisdom.

A disimpacted tooth can be the cause of a low genian fistula at the level of the premolar region when the pus drains into the gutter formed by the insertion of the masseter on the mandible. Arrived in an area of least resistance whose anterior limit corresponds to the posterior edge of the depressor muscle of the commissure, the upper limit at the lower border of the buccinator, the posterior limit to the anterior border of the masseter and the lower limit at the basilar edge from the mandible, the purulent discharge is oriented towards the skin and gives rise to a purulent collection or fistula [8, 10].

A posteriori, we can wonder if there were one or two causal teeth. The absence of cord in the bottom of the vestibule and absence of orientation of the locating cone towards a tooth constitute elements whose value has probably been under estimated. The radio cone reperature could not be conclusive considering the length of the fistulous way coming from the 38.

In summary there were probably two etiologies occurring almost simultaneously. Which explains the initial regression of the fistula after the endodontic treatment of the 36 or the 38 was the only causal tooth and it is only the realization of the extraction of the 38, which made the fistula disappear.

The clinical diagnosis of a cutaneous fistula of origin dental is relatively easy but it is not even for the etiological diagnosis. Indeed, the existence of Concomitant foci of infection can lead to difficulties diagnostic, even for an experienced clinician. If the indication therapy is most often simple – endodontic treatment or avulsion of the causative tooth – it is sometimes necessary, for old fistulas, to perform excision of the fistulous tract.

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REFERENCES

1. Kallel, I., Moussaoui, E., Kharret, I., Saad, A., & Douki, N. (2021). Management of cutaneous sinus tract of odontogenic origin: Eighteen months follow-up. *J Conserv Dent*, 24, 231-5.
2. Patni, P. M., Jain, P., Prashanth, M. B., Jain, N., & Patni, J. M. (2010). Non-surgical management of an extraoral cutaneous sinus tract of odontogenic origin: An endodontic challenge. *Endo (Lond Engl)*, 4, 285-91.
3. Mittal, N., & Gupta, P. (2004). Management of extra oral sinus cases: A clinical dilemma. *J Endod*, 30, 541-7.
4. Johnson, B. R., Remeikis, N. A., & van Cura, J. E. (1999). Diagnosis and treatment of cutaneous facial sinus tracts of dental origin. *J Am Dent Assoc*, 130, 832-6.

5. Spear, K. L., Sheridan, P. J., & Perry, H. O. (1983). Sinus tracts to the chin and jaw of dental origin. *J Am Acad Dermatol*, 8, 486-92.
6. Calışkan, M. K., Sen, B. H., & Ozinel, M. A. (1995). Treatment of extraoral sinus tracts from traumatized teeth with apical periodontitis. *Endod Dent Traumatol*, 11, 115-20.
7. Lamia, O., Sana, B., Nabiba, D., & Faten, B. A. (2011). Jamil Selmi Fistule cutanée d'origine dentaire: recherche de la dent. *Causale Med Buccale Chir Buccale*, 17, 39-43.
8. Peron, J. M., & Mangez, J. F. (2002). Cellulites et fistules d'origine dentaire. *Encycl Med Chir stomatologie/odontologie*, 22-033-A-10. Editions scientifiques et médicales, Elsevier SAS, Paris.
9. Varol, A., & Gülses, A. (2009). An unusual odontogenic cutaneous sinus tract to the cervical region: a case report. *OHDMBSC*, 8, 43-5.
10. Guyot, L., Catherine, J. H., Richard, O., Olivi, P., & Chossegras, C. (2006). Fistules cutanées d'origine dentaire. *Ann Dermatol Venereol*, 133, 725-7.

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