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Odontogenic Cutaneous Fistula: A Case in Aged Patient With Delayed Diagnosis

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Abstract

Odontogenic cutaneous fistula is a pathologic communication between the cutaneous surface of the face and the oral cavity and it is a rare entity frequently misdiagnosed.

Therefore, the lesion may persist for a long period before the correct diagnosis is made and odontogenic source is treated appropriately. Delay in diagnosis adds to the chronicity of the lesion and if not diagnosed in times fistula can even leave deforming scars.

Considering the scarceness and diagnostic predicament of odontogenic cutaneous fistulas, the authors report a significant case of 80 years old female.

Odontogenic cutaneous fistula continues to be a diagnostic challenge. It is a pathologic communication between the cutaneous surface of the face and the oral cavity. A cutaneous fistula of dental origin is a rare entity and it is frequently misdiagnosed as lesions of non-odontogenic origin by physicians and surgeons alike and this leads to incorrect and unnecessary treatment. The lesion may persist for a long period before the correct diagnosis is made and odontogenic source is treated appropriately.

It has been estimated that half of the patients with odontogenic cutaneous fistulas are submitted to multiple dermatological surgical operations, long term antibiotic therapy and, in some cases, even radiotherapy, before the correct diagnosis is established. Delay in diagnosis adds to the chronicity of the lesion and if not diagnosed in times fistula can even leave deforming scars.¹

The cutaneous fistulas are most frequently associated with mandibular teeth, which have been documented in 80% to 87% of the report cases. An odontogenic cutaneous fistula usually arises as a sequel to bacterial invasion of the dental pulp through a breach in the enamel and in the dentine by a carious lesion, trauma or other causes. If the treatment does not start at this stage, the pulp becomes necrotic and the infection spreads beyond the apex of the tooth into the peri-radicular area becoming an apical periodontitis that subsequently dissects along the path of least resistance and erupts through the skin.²

Elimination of dental infection through endodontic treatments or tooth extraction is fundamental for the management of cutaneous fistulas. Considering the scarceness and diagnostic predicament of odontogenic cutaneous fistulas, we report a significant case of 80 years old female.

CASE REPORT

An 80-year-old woman was referred to the Department of maxillofacial surgery in order to verify a possible dental cause for her skin lesion. The patient's chief complaint was the presence of a stiff nodule in the right cheek close to the lower border of the mandible, which had been periodically discharging pus for 1 year. She reported that the lesion had been previously diagnosed such as a sebaceous cyst and as an inflammation of the salivary glands. For about 1 year, she had undergone multiple failed regimes of traditional medical therapies. Finally, she was referred to a dentistry and a dental etiology was suspected. There was no history of dental pain, sensitivity or restricted mouth opening during the previous year.

Extra-oral examination revealed a cutaneous draining fistula and an erythematous stretched and stiff nodule about 1.5 cm in diameter in the right cheek (Fig. 1). On palpation, the swelling was fluctuant, and it mildly ached after pressure; concurrently, palpation of the surrounding tissue produced yellow pus.

Intraoral examination revealed that the patient is completely edentulous and carries complete dentures. After the removal of the prosthesis the occlusal surface of 48 was notated. The tooth was tender to slight percussion and painful (Fig. 1). Periodontal probing around the tooth discovered a pocket depth within physiological limits. The vestibular mucous membrane corresponded to the apex of the root and it was very inflame. Also the tooth had grade 1 mobility.

Radiographs revealed periapical rarefaction and an osteolytic area around the 4.8 (Fig. 1). Based on the aforementioned findings, we could draw a preliminary conclusion the patient had a chronic

suppuration with a cutaneous fistula on the right cheek due to pericoronaritis of tooth 4.8, partially erupted in the oral cavity and affected to coronal destruens caries (Fig. 2).

We had surgical excision of the cutaneous fistula: to excise the fistula, first an elliptical incision was made on the skin. Then the dissection was made below the skin until the fistula path was reached. The affected tooth was removed and the lesion and granulation tissue were completely enucleated. The incision site was irrigated with antibiotics and close in layers (muscle and oral mucosa with 3.0 vicryl suture and skin with 4.0 nylon suture) (Fig. 2).

DISCUSSION

Cutaneous facial fistula may be difficult to diagnose: patients may not always have dental symptoms and the cutaneous fistula may develop far from the origin of infection.

Misdiagnosis of these lesions results in unnecessary treatment including long term antibiotic therapy, surgical excision and even radiotherapy. Antibiotic therapy will bring a temporary resolution of drainage and apparent healing. However, if the cause of infection is not eliminated the fistula will recur shortly.³⁻⁵

A thorough anamnesis and intraoral examination are fundamental for the appropriate diagnosis and may spare the patient much unnecessary treatment.

Dental pathology is the most common cause of cutaneous fistula in the face and neck region and should be the primary suspect in differential diagnosis. Other etiologies include pyogenic granuloma, osteomyelitis, salivary gland and duct fistula, congenital sinus tract, infected cyst, mycotic infection and some skin lesions such as pustole, furuncles, forcing-body, malignancy and granulomatous disorders.⁶

The classic lesion is an erythematous, smooth, nodule with an irregular surface and with or without drainage. "Dimpling" or retraction below the normal skin surface is characteristic. It is usually possible to palpate a cord-like tract that start from the underlying alveolar bone in the area of the suspected tooth. The chronic lesion often leads to retraction of skin and then leaves a scar.

The course of patient described in this case report is typically: patient reports an intermittent remission of the symptoms, intraoral examination may reveal dental restorations and periodontal diseases, but the clinician should keep in mind that even the tooth involved can appear healthy. Some authors claim that extra-oral fistulas are more common in the children and adolescents because the teeth are not yet fully erupted and the alveolar processes is not fully developed and so roots are more

deeply seated.^{6–10} However, most case reports available in the literature are predominantly of adults and thus do not support this theory.

Odontogenic cutaneous fistula typically arises from periapical infections around the root apices as a result of pulpal necrosis due to penetrant caries or traumatic injury. Routine tests used to locate the involved teeth include pulp sensitivity tests and radiographic analysis. In the clinical case described here, the radiographies clearly revealed pericoronaritis and boneless which the cause of suppuration and fistula.^{11–13} As far as definitive treatment is concerned, root canal or surgical extraction is the treatment of choice. After surgical treatment of the pathogenic tooth the fistula often heals without further intervention by 14 days. Healing occurs by secondary intention and occasionally a residual scar may persist after a few months. In these cases, surgery may be indicated to improve aesthetics. In this case report we have preferred to have surgical excision in order to speed up the healing process.

In conclusion, a dental etiology must always be considered for any cutaneous fistula in the head or in the neck region.^{2,3,13–16} Elimination of the dental source of infection results in resolution of the fistula and the healing of the fistula is expected within 5 to 14 days. In case with of restorable teeth, even just the elimination of the infection through endodontic treatment leads to resolution of the fistula.^{2,8,17} The case here described is particular because the fistula was caused by a pericoronaritis and not by a dental necrosis. The pericoronaritis started from the third molar, whose existence was ignored, in an old edentulous woman. This case teaches that clinicians should always look for odontogenic causes of cutaneous fistula, even though they seem unlikely.

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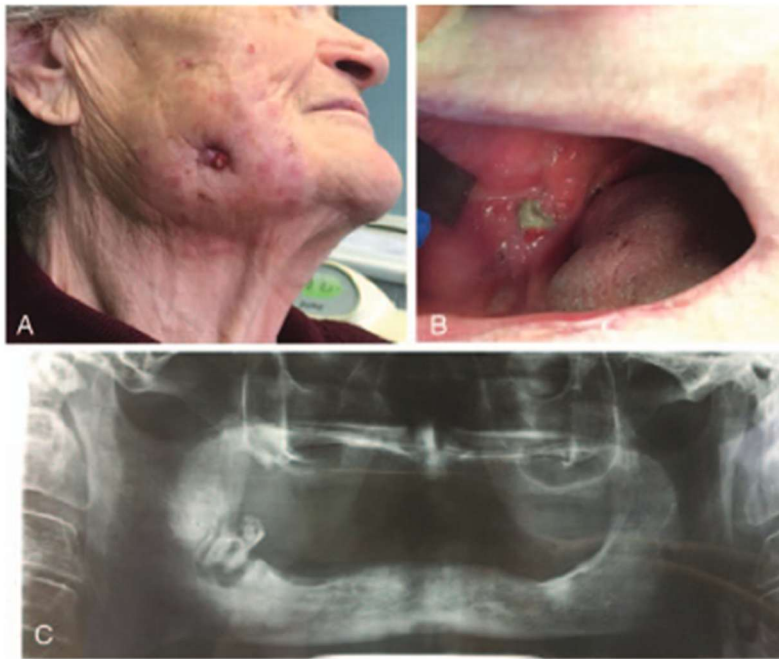


FIGURE 1. (A) Clinical preoperative view showing a cutaneous fistula on the right cheek. (B) Intraoral clinical preoperative view showing 4.8 partially erupted in the oral cavity. (C) Preoperative radiograph revealed periapical rarefaction and an osteolytic area around the 4.8.

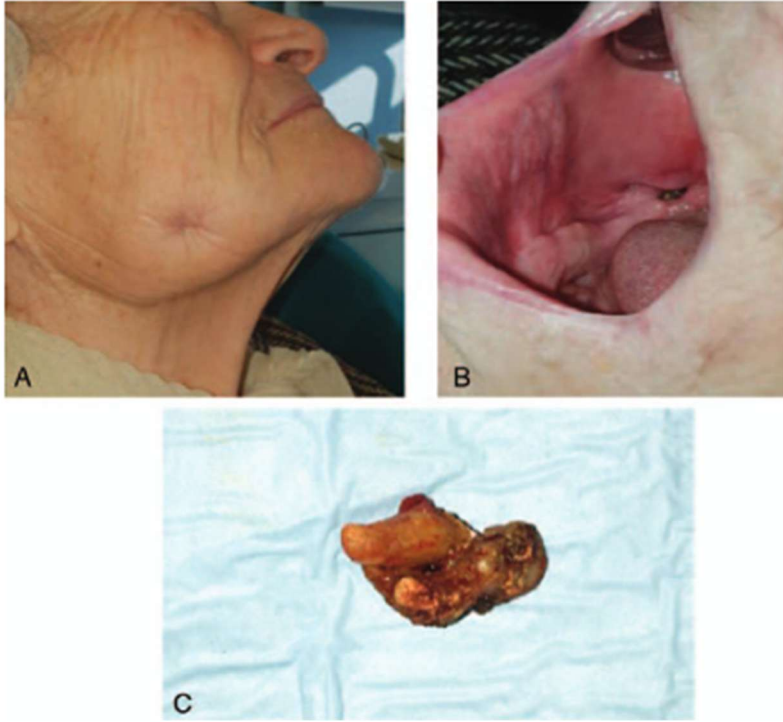


FIGURE 2. (A-B) Clinical view 2 weeks after surgery. (C) Clinical view showing 4.8 affected to coronal destruens caries.