



Case report

An uncommon cause for a non-healing cutaneous fistula in the parotid gland area - A case report

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ABSTRACT

Introduction: Orocutaneous fistulae of dental origin are uncommon but well documented in the literature. This condition is often misdiagnosed because of the multiplicity of manifestations and the atypically presentation of the condition. Dental symptoms are rare. This makes diagnosis and treatment a challenging process.

Presentation of a case: A 67-year-old patient presented in the emergency room with an abscess in the parotid area. After incision and drainage the patient developed a non-healing fistula in the region of the parotid. Multiple treatment attempts and several investigations did not solve the problem. Finally, a panoramic x-ray showed a hidden, infected and displaced tooth in the right mandibular angle. After surgical extraction of the tooth and fistula excision, healing was uneventful and there was no recurrence.

Discussion: Given the diagnostic challenge, the real origin of the condition is frequently only discovered after several unnecessary interventions that may have harmed the patient. The key to early diagnosis is dental examination and dental radiographs. The goal of treatment is the elimination of the infection by surgical extraction of the tooth or non-surgical endodontic therapy.

Conclusion: Early diagnosis and rapid treatment minimize patient discomfort and reduce the probability of further complications. The differential diagnosis of sinus tract of dental origin should be considered in any case of unclarified non-healing skin lesion in the head and neck area, especially if initial treatments have failed. An early interdisciplinary approach is essential.

1. Introduction

Cutaneous sinus tracts of dental origin are an uncommon manifestation of dental infection that is often misdiagnosed [1]. Precise data on prevalence are not found in the literature. The similarity of the clinical presentation with other diseases such as basal cell carcinoma, squamous cell carcinoma, osteomyelitis, congenital fistula, salivary gland fistula, infected cyst, mycotic infection, pyogenic granuloma, actinomycosis and foreign body reaction [2] often leads to inadequate management. The reason is the distance between the source of the disease and the manifestation site and the frequent lack of toothache. Incorrect diagnosis often leads to multiple unsuccessful attempts at incision, biopsy and drainage. Even the exaggerated use of antibiotics [3], radiotherapy [4] and electrodesiccation [5] have been reported. Approximately 80% of cutaneous dental sinus tracts arise from mandibular teeth with almost half of these lesions involving anterior mandibular teeth [6]. The

most important source is pulpal necrosis with periapical abscess formation due to caries or dental trauma. Cutaneous sinus tracts of odontogenic origin appear more commonly in the submandibular or submental region as nodulocystic suppurative lesions [7,8]. The manifestation site is often not in the proximity of the infected tooth but arises after pathogens have slowly formed a track through the cancellous bone following the path of least resistance to perforate the cortical plate and present either intra-, or extraorally. To provide the correct diagnosis dental examination, dental radiography, vitality testing and probing the fistula are essential. The foremost aim of treatment is to eliminate the source of infection. Treatments of choice are root canal treatment or surgical extraction [9].

A particularly challenging situation presents when the tooth is completely covered by the oral mucosa. We report a case in which an orocutaneous fistula of dental origin was managed empirically as a recurrent parotitis because of the similarity of symptoms. This case has

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been reported in line with SCARE (Surgical case report) criteria [10].

2. Presentation of a case

A 67-year-old woman presented at the emergency unit with an increasingly painful swelling and reddening in the area of the right parotid gland that had persisted for one week. A previously initiated empirical antibiotic therapy with Augmentin® (amoxicillin/clavulanate potassium, GlaxoSmithKline AG, Münchenbuchsee, Switzerland) orally for 7 days had been unsuccessful. On admission there was general malaise with elevated temperature and clearly elevated blood inflammatory parameters. The clinical examination showed an incipient weakness of the mouth branch of the facial nerve on the right side. The patient also suffered from increasing trismus. The intraoral inspection showed an edentulous patient with a total upper and lower denture. An ultrasonographic examination revealed fluid collection with signs of abscess formation in the parotid area. The case history showed two similar episodes in the past. At that time, a recurrent sialadenitis of the parotid gland had been assumed. The treatment with a short antibiotic regime was successful. The patient was generally healthy without regular medication. An empirical intravenous antibiotic therapy with Augmentin® (amoxicillin/clavulanate potassium, GlaxoSmithKline AG, Münchenbuchsee, Switzerland) was started. The submandibular incision and drainage of the abscess in the area of the lower parotid gland lobe was performed in general anaesthesia. Swelling and pus formation returned and so a repeat procedure was performed three days later. The wound went on to heal uneventfully after this procedure. The patient was discharged eight days after admission in good general condition.

A few days after dismissal from the hospital an exuding fistula in the area of the incision developed. The patient suffered with this condition for the following four months. All empirical and resistance-based attempts to treat this condition with antibiotics failed. A surgical approach that involved trying to stitch up the fistula was unsuccessful. Magnetic resonance imaging (MAGNETOM® Aera, 1.5T, Siemens Healthcare AG, Zürich, Switzerland) with sialography was performed. The findings did not reveal a possible reason for the persistent fistula. An additional sialendoscopy did not show any abnormalities.

Four months after discharge a panoramic x-ray of the mandible was taken. This image showed an impacted and displaced tooth in the region of the right mandibular angle. Bone radiopacity around the roots indicated osteolysis due to infection (Fig. 1). The patient was re-admitted to the Department of Maxillofacial Surgery at the same hospital. The revised diagnosis was now cutaneous fistula of dental origin with chronic infection of the third molar of the right lower jaw (Fig. 2). Empirical oral antibiotic therapy (Clindamycin®, Pfizer PFE Switzerland GmbH, Zürich, Switzerland) was started and the tooth was surgically removed in regional anaesthesia (Fig. 3). The fistula was excised. The healing process was uneventful. Antibiotic therapy was given for 7



Fig. 1. Panoramic x-ray showing the impacted and displaced tooth in the right mandibular angle (red arrow). The blue arrow shows periapical osteolysis indicating infection. (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)



Fig. 2. Cutaneous fistula of dental origin in the area of the right lower parotid lobe and mandibular angle. Macerated skin with turbid secretion.



Fig. 3. Intraoperative picture after incision of the oral mucosa and discreet removal of mandibular bone. Crown of the displaced lower right wisdom tooth (black arrow).

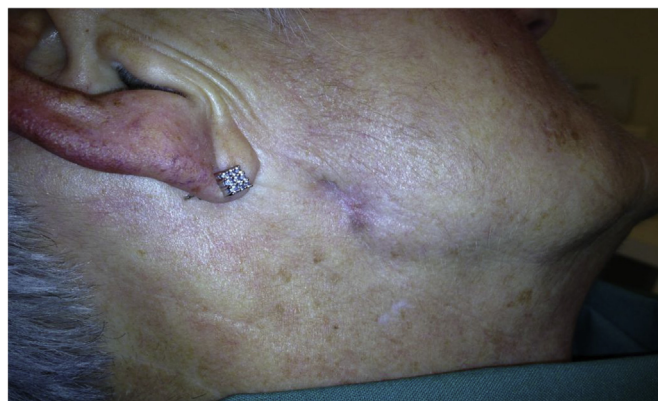


Fig. 4. Clinical situation three months after the operation. Complete healing. Discreet scarring without any sign of recurrence.

days. Three weeks later healing was complete. There was no residual swelling, no pain and no recurrence of the fistula. At the three-month follow-up the result was still satisfactory without any signs of recurrence (Fig. 4).

3. Discussion

Cutaneous fistula of dental origin is and remains a diagnostic challenge. A periapical dental abscess secondary to caries is the major factor behind a large proportion of such cases [11]. Other causes are trauma and periodontal disease. Patients often present without obvious dental discomfort, which results in unfocused or inappropriate therapy, consequently, extending the time of infection [12]. In fact, after

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