



# Orocutaneous Fistula from a Retained Tooth Fragment: A Case Report and Review of the Literature

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## Introduction:

- Oro-cutaneous fistulas are commonly misdiagnosed and incorrectly treated<sup>1,2</sup>.
- These fistulas often result from odontogenic sources including pulpal necrosis, suppurative apical periodontitis and retained tooth fragments<sup>3</sup>.
- They most commonly present as cutaneous lesions on the chin or mandibular region as nodulocystic lesions with suppuration.
- The lesions are often misdiagnosed as pyogenic granulomas, foreign body reaction, deep fungal infection, squamous cell carcinoma, or osteomyelitis, which can delay proper care<sup>4</sup>.
- Here we present a case of an oro-cutaneous fistula arising from a retained tooth fragment.

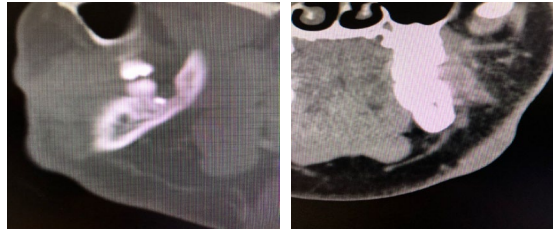


Figure 1:

## Case Presentation:

- History:** A 22-year-old man with no smoking or alcohol history presented with an enlarged, discolored and cystic mass of the left cheek. The lesion had increased in size over the past 3 months. It was associated with some discharge and pain that was rated a 3/10 in intensity. The hair-bearing skin was no longer present and the surrounding region was erythematous.
- Workup:** Treatment with oral clindamycin did not provide any improvement. He underwent a fine-needle aspiration (FNA) biopsy which was nondiagnostic. A punch biopsy was then performed in the outpatient office which demonstrated a chronic inflammatory-type change and granulation tissue.
- Given the unusual features and progressive growth of this lesion, definitive excision and reconstruction was recommended. Further imaging with a computed tomography (CT) scan soft tissue neck showed no mandible involvement and a hyperdense and cystic, superficial lesion of left cheek (**Image 1**).
- Surgery:** The involved skin of the left cheek was excised in an ellipse shape. A fistula tract was found and identified which measured 5.2 x 1.8 cm (**Image 2**). The tract extended from the left cheek to the left distal mandibular molar (tooth #18). The fistula was then excised completely from the buccal cortex of the mandible. The remaining skin defect was closed primarily.
- Due to the intraoperative findings, the patient was referred to oral surgery for further management. A panorex ordered by the oral surgeon, revealed a retained tooth fragment of left third molar as the source of the fistula (**Image 3**).
- Final pathology showed skin and connective tissue with acute and granulomatous inflammation. Special stains for acid fast bacilli, fungus and bacteria were all negative.

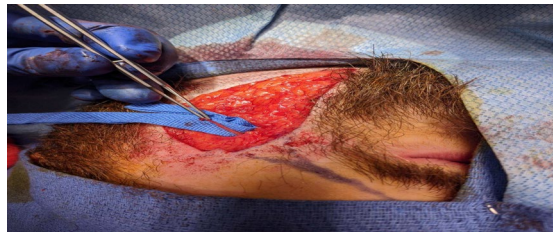


Figure 2:

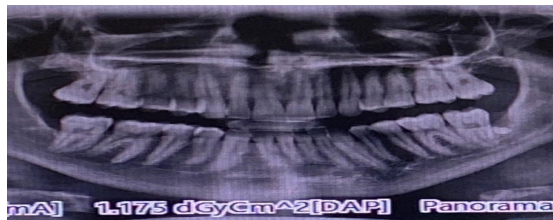


Figure 3:

## Discussion:

- Orocutaneous fistulas are rare conditions in which there is a pathologic communication between the oral cavity and the skin.
- Common causes include dental infections, trauma, dental implant complications, salivary gland lesions and neoplasms<sup>5</sup>.
- Fistulas can start out as odontogenic infections that invade the cortical wall of the alveolar bone and continue through the soft tissue interstitial spaces by following the path of least resistance<sup>5</sup>.
- Buccally positioned root apices located below the buccinator muscle facilitate abscess or fistula formation at the base of the mandible<sup>5</sup>.
- Patients with oro-cutaneous fistulas often do not always have obvious dental symptoms, making this a challenging diagnosis<sup>3</sup>.
- Tooth extraction history should be obtained to identify patients who are at risk of having retained teeth fragments that can act as a fistulous source<sup>6</sup>.
- Radiographic imaging can aid in diagnosis, particularly in identifying a source<sup>6</sup>.
- Definitive management includes antibiotics, complete surgical excision and source control.

## Conclusions:

- Our case is unique in that it is an example of an oro-cutaneous fistula that developed from a retained tooth fragment.
- Orocutaneous fistulas are often misdiagnosed due to a lack of odontogenic symptoms.
- The use of radiographic imaging including CT and panoramic X-ray films can aid in diagnosis.
- When suspecting an oro-cutaneous fistula, it is imperative for a surgeon to perform a thorough dental history and physical exam in order to avoid a delay in treatment.

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