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Cutaneous Fistula of Face masquerading as a Dermatological Lesion; A Diagnostic Puzzle: A Surgical Case Report

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Abstract

Cutaneous fistula or oro-cutaneous fistula (OCF) or odontogenic lesions are uncommon conditions that can resemble typical dermatological lesions. These conditions are often misdiagnosed, resulting in delayed treatment, which can cause the lesion to become chronic, the fistula to enlarge, and there may be bone loss. Although well-documented, this condition is rare and frequently misdiagnosed and improperly managed, leading to problems such as sinus drainage, inflammation, pain, aesthetic concerns, prolonged use of antibiotics, and patient discomfort. In this case, it is challenging for general practitioners to distinguish the fistula opening from primary skin conditions, often leading to incorrect referrals to dermatology, being a main concern of maxillofacial surgery. This case report describes a 26-year-old female patient with a two-year history of a non-healing, continuously discharging abscess in the lower part of face region, specifically the chin or submental area, accompanied by chronic pain. She had been misdiagnosed and inadequately treated for two years, which contributed to the persistence of her symptoms. After a prolonged period, she was successfully treated through surgical intervention combined with endodontic treatment under our guidance and treatment protocol, with follow-up for more than a year, resulting in a favorable outcome.

The purpose of this case report is to highlight the importance of considering this condition in the differential diagnosis when encountering skin lesions in the head and neck region, emphasizing the need for accurate diagnosis and appropriate management.

Keywords: Sinus Tract, IV Infusion, Cutaneous Fistula, Endodontic Treatment, Skin Lesions, Surgical Excision, Fistulectomy, Head and Neck.

Introduction

Orocutaneous fistula (OCF) is a rare clinical condition, though it has been widely acknowledged in the literature. It frequently presents in a way that mimics common dermatological or infectious pathologies—such as carbuncles, epidermoid cysts, furuncles, facial skin tumors, or chronic infections like tuberculosis, cervicofacial actinomycosis, and jaw osteomyelitis.

Despite this, it is often overlooked or misdiagnosed by both general physicians and dental practitioners.

Such misidentification can lead to inappropriate or incomplete treatments, including unnecessary use of antibiotics, repeated biopsies, surgical drainage, corticosteroid regimens, or aesthetic procedures. These interventions, while addressing surface symptoms, fail to treat the underlying odontic origin—resulting in the lesion becoming chronic and developing into a persistent epithelialized tract or fistula [1].

The extraoral opening of orocutaneous sinus tracts typically appears near the mandibular angle, chin, or cheek region. These lesions may manifest as erythematous, symmetrical, smooth, crusted nodules with either tender or painless characteristics, often showing intermittent pus discharge. Due to their nonspecific appearance, they are frequently mistaken for other conditions such as pyogenic granuloma, retained foreign bodies, deep fungal infections, or even malignant lesions like squamous cell carcinoma [4].

It is estimated that a significant number of patients with extraoral sinus tracts undergo several dermatologic or oncologic treatments—such as long-term antibiotic therapy, radiotherapy, excision, or even cancer-focused interventions—before the odontogenic cause is identified. This delay contributes to relapse and persistence of the condition [4].

The purpose of this case report is to raise awareness among general practitioners, dermatologists, and dentists that some cutaneous facial lesions may stem from odontic infections. Early recognition of such a link can improve diagnostic accuracy and promote effective treatment strategies [6].

Here, we present the case of a 26-year-old female diagnosed with an odontogenic cutaneous fistula. The lesion was successfully treated through surgical excision (fistulectomy) with endodontic treatment under intravenous antibiotic coverage. The procedure was performed under local anesthesia in a minor operating theater in Kolkata, West Bengal, India, as a same-day care intervention.

Case Report

A 26 years old female patient was referred to me (Author 1), with chief complaint of a non healing fistula with necrotic tissue, over the middle portion of chin area i.e the submental region along with occasional drainage from the fistula (Fig 1). The history given by the patient was, there was a pea-sized swelling over the mid portion of chin area initially, gradually the swelling started increasing and formed a depression or punctum followed by drainage of pus, with intermittent mild to severe pain and tenderness over touch. The patient went to a physician who diagnosed it as a skin lesion and prescribed systematic antibiotics and topical ointments to the patient and due to the treatment the patient was free of symptoms but the wound did not heal completely and still had occasional pus discharge. Since 2 years the patient keep on shifting from one physician to other specialists along with consumption of multiple oral drugs, and the patient was psychologically burdened and finally gave up. The patient after about a year, was referred to me. During examination the cutaneous lesion was discovered over the mid portion of chin region, measuring about 2-4 mm in diameter approximately causing depression over the skin (Fig 1).The lesion was tender on palpation and firmly adherent to the underlying bone. There was no discharge observed on palpation. Intraoral examination revealed mild swelling over the labial vestibular gingival region involving 41, 31, 32 dentitions (Fig 2). No carious or grossly decayed tooth observed. Mild blackish to light grayish discolouration seen i.r.t 41 dentition. When patient was asked about any

h/o childhood trauma or fall, she reported of falling while playing in a playground when she was about 15 years of age. After that no such symptoms she noted, upto this 3 year presently. Orthopantogram Xray (OPG) was advised, which revealed periapical radiolucency with ill-defined border involving 41,31,32 dentition, which suggested of bone loss, tissue damage, infection and abscess formation, followed by through and through communication to the extraoral region of face [Fig 3].Xray revealed formation of chronic fistula tract/sinus tract through and through.

So, based on the clinical and radiological findings, a diagnosis of cutaneous fistula of odontogenic origin was made. The patient was told about the condition and planned for the surgical removal of the whole fistula with tract under antibiotic IV infusion along with endodontic intervention under local anaesthesia at a minor OT setup as a day care procedure.

Both patient and patient party consent was taken. After completion and clearance of routine blood investigations of cbc,bt,ct,fs,ppbs,t3,t4,tsh,Mantoux tuberculin test for TB, sgot, sgpt, pt(inr), hiv, hbsag, hcv, chest xray and skin patch test. Patient was given prophylactic antibiotic regimen for 3 days before OT, with Rx tab taxim 200mg(cefixime) bd, tab O2 200/500mg (ofloxacin +ornidazole) tds, tab zerodol sp (aceclofenac+ paracetamol+ serratiopeptidase) bd, tab rantac 150 mg(ranitidine) od. On 4th day the surgical procedure was undertaken. On early morning the patient was given IV infusion with-Rx Inj Augmentin 1.2 gm (amoxicillin + potassium clavunate), inj Metrogyl 1gm(metronidazole), inj rantac 50mg(ranitidine), over drip by drip by slow infusion rate under guidance of physician (Author 2). Patient draping and cleaning (both intraorally and extraorally) done by 5% povidine Iodine solution following strict aseptic measures.

2% Lignox ADR (lignocaine hydrochloride with adrenaline) given intraorally by proper nerve blocks, and infiltration done extraorally around the surgical area. Prior endodontic treatment completion was done i.r.t 41,31.32 dentition by a general dentist (Fig 4), because proper pulp tissue needed to be extirpritate totally, to eliminate the etiology of the disease. Using No.15 BP blade an elliptical incision was placed around the skin tissue (Fig 5) and intraorally vestibular incision placed from 43 to 33 dentition region. Blunt dissection performed layer wise layer all around the muscle layer and tract (Fig 6),and slowly curetted out with whole sinus/fistula tract with the skin tissue in toto (Fig 7).Patency checked for total clearance (Fig 8).Surgical area irrigated properly with NS solution (0.9% normal saline sodium chloride) followed by betadine irrigation (5% Povidine Iodine solution) around 50 to 60 ml (fig 9) .Layer wise closure done facially using 3-0 vicryl absorbable suture (ethicon 3-0) and skin surface with 3-0 silk suture non absorbable (3-0 mersilk) and using 3-0 sterile silk suture non absorbable(3-0 mersilk) intraoral closure done (Fig 10 & 11).Irrigation of surgical sites done properly using antimicrobial solution. 2% T bact ointment (Mupirocin 2%) was applied over the surgical site facially and dressing placed with surgical gauze roll and surgical tape. Introrally pressure pack placed. Patient was instructed to keep on closed dressing for 3 days, followed by daily open dressing at home using antimicrobial solution and ointment over the operated area and post-operative instructions given thoroughly. Non absorbable suture removal done on 10th day. Post operatively patient was kept on IV antiobiotic regimen for 5 days followed by oral antibiotics for 3 days. The specimen was sent for H/P examination.

The patient was released on the same day after keeping her in recovery room for 2 hours under observations with

monitoring all the vitals status and Rx inj voveran (diclofenac 75 mg) IM, inj tetanus (tetanus vaccine absorbed) IM, Inj dexona (dexamethasone 4mg) IV, Inj paracetamol (paracetamol 1gm) IV given post ot.

The medications Instructed as-

Rx Inj piptaz 4.5 gm (piperacillin + tazobactam) bd IV, inj metrogyl 1 gm(metronidazole) tds IV, inj rantac 50mg (ranitidine) od IV, inj voveran 75 mg (diclofenac) bd IM, inj emeset 4mg (ondensetron) od IV,for 5 days (under guidance of physician).

Oral antibiotics (for 3 days)

Rx tab ceftum axetil 500mg bd(cefuroxime), tab metrogyl 400mg tds (metronidazole), tab chymoral ap tds (trypsin chymotrypsin + pracetamol+aceclofenac), cap rabemac dsr bd(rabeprazole + domperidone).

Post 10 days, silk non absorbable suture was removed both externally and intraorally. Healing was satisfactory, no signs of any inflammation, redness, pain or pus discharge noted (Fig 12 & 13). Patient kept on follow up after 7 days, 1 month and 6 months follow up (Fig 14) upto 1 year. Patient was advised to apply anti-scar ointment over the surgical skin area regularly and oral multivitamins was placed for 1 month.

Patient 1 month and 6 months follow up was excellent, with very good healing. No recurrence of any infection or fistula noted thereafter (Fig 15 & 16). The patient was satisfied and happy for her successful treatment after 3 years. Follow up done upto 1 year with radiography (Fig 17) and clinical checkups.

Discussion

An extraoral opening, sinus, or fistula in the facial region is a relatively common clinical presentation. Patients affected by such lesions frequently seek consultation from dermatologists or general physicians rather than oral and maxillofacial (OMF) surgeons. However, findings from various case reports have demonstrated that improper or delayed treatment often leads to incomplete healing and chronicity of the lesion. Therefore, any lesion in the cervicofacial region must consider odontogenic infection as a potential etiology and should be thoroughly evaluated and ruled out accordingly[1].

The diagnosis of an orocutaneous lesion can be established through a combination of clinical and radiological assessments. Clinically, the diagnostic process involves taking a detailed patient history, which typically reveals a prior episode of odontic pain or swelling—occurring weeks or even months before the lesion became apparent. A history of multiple unsuccessful treatments is often reported. Radiological investigations play a vital role in confirming the diagnosis of orocutaneous fistula (OCF) [1].

Facial space infections commonly begin as cellulitis and may progress to form a fluctuant abscess, which can subsequently result in orofacial fistulas. Thus, the presence of a cutaneous sinus tract on the face should prompt physicians, ENT specialists, and dermatologists to consider odontogenic causes through comprehensive odontological evaluations. A clinician's high index of suspicion is critical for establishing an early and accurate diagnosis. Prompt recognition and timely intervention minimize patient discomfort and aesthetic concerns, while also reducing the risk of complications such as sepsis or osteomyelitis [3].

From a pathological perspective, periapical lesions often originate from deep dental caries, gross decay, or trauma-induced pulp necrosis, which subsequently leads to bacterial infection extending to the root apex and periapical tissues. This process causes periapical bone destruction [2]. Continued tissue destruction promotes abscess formation, which typically follows the path of least resistance, determined by anatomical patterns

corresponding to apical root locations. This results in sinus tract formation, which may provide symptomatic relief by releasing periapical pressure [2].

Since the oral and facial musculature functions as natural anatomical barriers, they influence and limit the direction of infection spread, the anatomical location of the infection source determines the trajectory of the resulting sinus tract. When an infected root is located above the buccinator muscle insertion in the maxilla or below the mentalis, mylohyoid, or buccinator muscles in the mandible, an extraoral sinus tract may form [4].

Microbiological evaluations of bacterial flora from extraoral sinus tracts often reveal polymicrobial colonization, including strict anaerobes such as anaerobic cocci, *Prevotella* and *Fusobacterium* species, as well as facultative anaerobes like the viridans group streptococci and Streptococcus anginosus. A compromised immune system may exacerbate disease virulence [2].

In the clinical case presented, microbiological culture of the exudate ruled out *Mycobacterium tuberculosis* infection, and no specific aerobic or anaerobic pathogens were identified. Definitive treatment involved surgical debridement of the chronic granulomatous lesion along with complete excision of the sinus tract (fistulectomy), effectively eradicating the infection. The patient experienced complete resolution of the facial lesion, with only a minor residual scar. Follow-up radiological assessments over the course of one year revealed disappearance of the periapical lesion with satisfactory bone regeneration.

This case underscores how a lack of interdisciplinary communication and inadequate awareness of odontogenic cutaneous fistulas among general medical practitioners can result in diagnostic and therapeutic delays. A high index of clinical suspicion, combined with appropriate diagnostic and therapeutic protocols, is essential for ensuring complete patient recovery, symptom resolution, and satisfactory aesthetic outcomes.

Conclusion

Orocutaneous fistulas (OCFs) of odontogenic origin are frequently misdiagnosed, particularly by physicians unfamiliar with their presentation. A successful treatment approach requires a thorough patient history, detailed clinical examination, and appropriate radiographic evaluation. Management should focus on eliminating the underlying cause and ensuring proper healing of both the facial skin and the oral cavity to restore anatomical, functional and aesthetic integrity.

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Legend Figures

Case Photographs

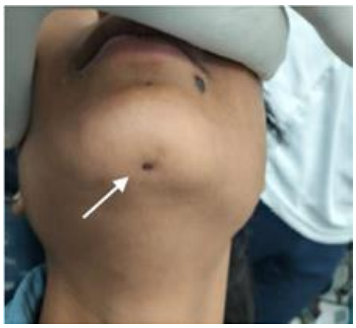

Fig 1: Cutaneous Fistula opening

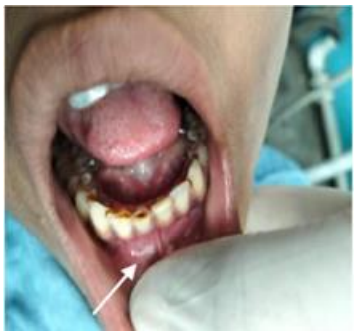

Fig 2: Intraoral Vestibular Swelling

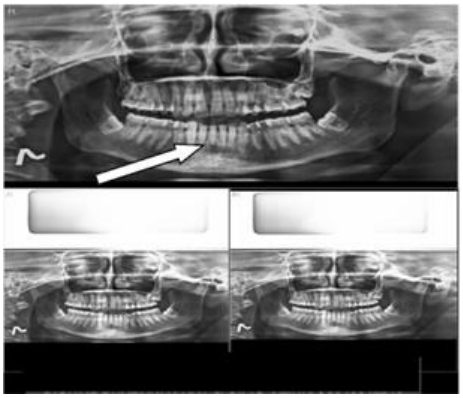

Fig 3: Opg reveals radiolucency with ill-defined borders following through & through communication to the lower border of mandible

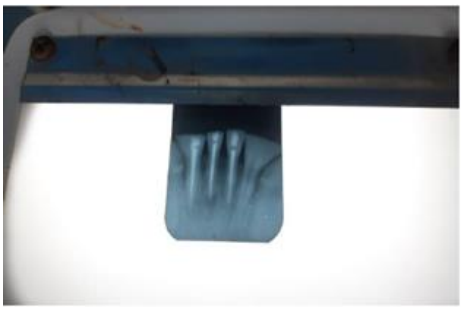

Fig 4: Endodontic Treatment done prior to surgery

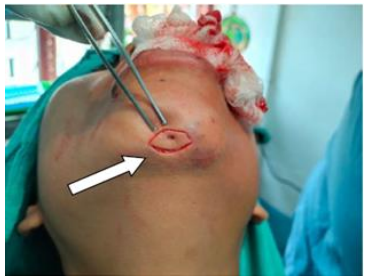

Fig 5: Elliptical Incision placed

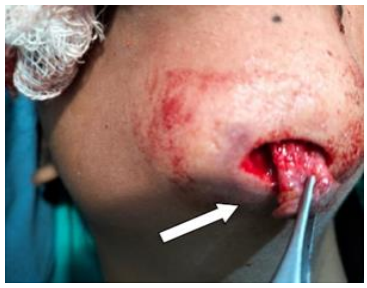

Fig 6: Blunt Scissor Dissection done & Fistula tract being curetted out

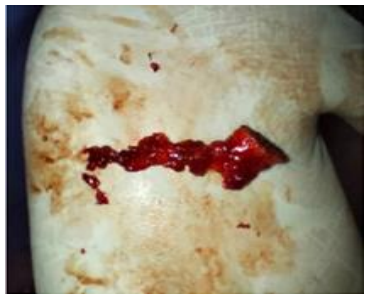

Fig 7: Excised Fistula with whole tract in toto

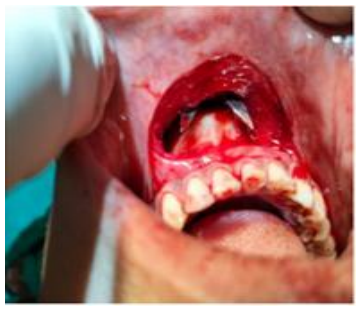

Fig 8: Patency being checked for total clearance

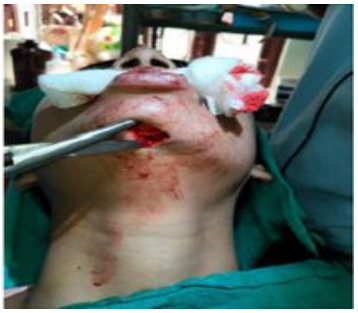

Fig 9: The Surgical area after Fistulectomy

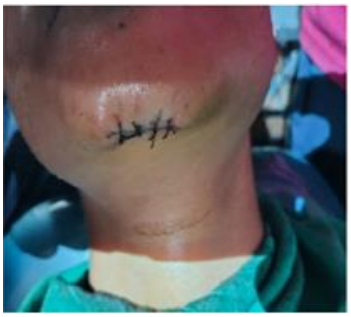

Fig 10: Suture Done Extraorally

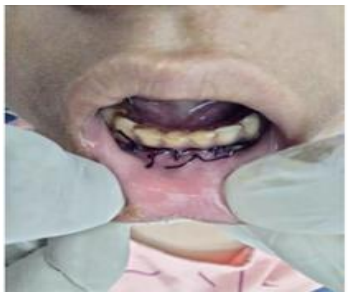

Fig 11: Suture done Intraorally

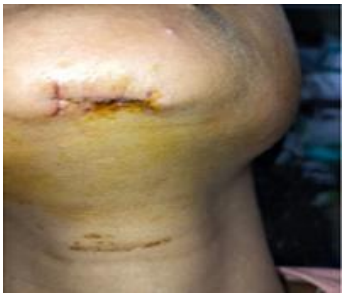

Fig 12: Suture removal on 10th day

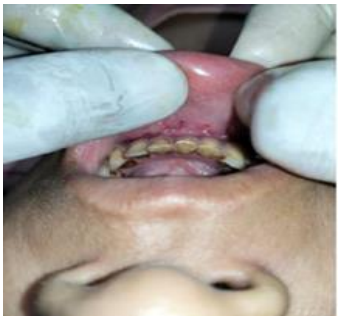

Fig 13: Intraoral Suture removal

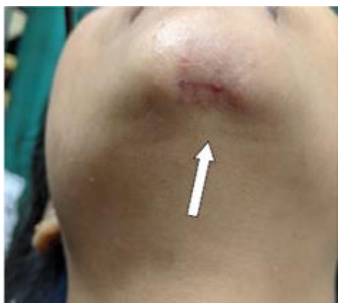

Fig 14: 1 month Follow-up

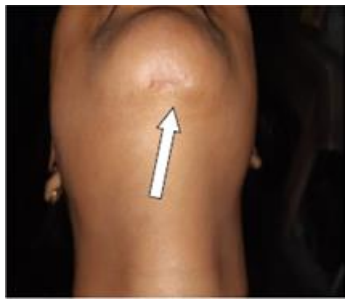

Fig 15: 6 months follow-up

Fig 16: 6 months Follow-up

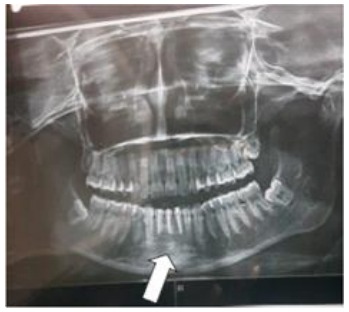

Fig 17: 1 Year Follow-up with Excellent Bone formation, with no recurrence of Pathology