Case Report

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Cervicofacial Actinomycosis: A Lump that Might Kill

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Abstract

Actinomycosis (AM) is a rare, slowly progressive, chronic granulomatous inflammatory disease that can result in multiple abscesses, sinus tracts, tissue fibrosis, and fistula formation.[1,2] It is caused by a group of Gram-positive, filamentous, anaerobic bacilli of the genus Actinomyces that are the endogenous microbiota of the mouth, gastrointestinal and genitourinary tracts.[2] These microorganisms are usually commensal; Invasion of the subcutaneous plane therefore requires disruption of mucosal integrity and devitalized tissue. It usually spreads continuously to the adjacent soft tissues, bypassing the tissue plane and lymphatic drainage.[3, 4] Cervicofacial AM is the most common presentation of the disease and dental infection or extraction and maxillofacial trauma are predisposing factors. It often develops as subacute or chronic soft tissue inflammation of the submandibular or paramandibular regions.[3–6]

The diagnosis of AM can easily be missed because it has a tendency to mimic a number of other conditions, including malignant and granulomatous diseases.[4,7–9] Moreover, Actinomyces spp. are very sensitive to a variety of antimicrobials, thus relatively low doses can render cultures negative.6 However, due to the fact that AM can be disfiguring or even fatal if vital structures including the airways and major vessels are involved, its correct diagnosis is of prime importance. In addition, it requires significantly longer treatment for its complete eradication.[3,6,10]

Keywords: Cervicofacial Actinomycosis.

INTRODUCTION

Cervicofacial actinomycosis is a rare chronic invasive destructive infectious syndrome caused by Gram – positive, branching filamentous bacteria, Actinomycesisraelii. It causes a chronic, granulomatous suppurative infection of the soft tissues in and around the mandible. Although lymph nodes usually are not involved, chronic tissue induration can mimic chronic lymphadenopathy. Diagnosis is often delayed because of nonspecific and prolonged symptoms usually mimicking a malignant or a granulomatouslesion. Tissue destruction can be considerable without proper therapy.

Here I present a case of Cervicofacial Actinomycosiswhich presented to ER with a submandicular abscess which was treated surgically followed by aggressive antibiotic therapy.

CASE REPORT

Here we discuss the case of a 49-year-old hypertensive man who presented to the ER with a complaint of a chronic submandibular mass for

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the past 4 months, which had started to suppurate for the past 1 month and had started bleeding from the mass since then. He was complaining of mild shortness of breath for 2 days. He was treated externally with oral antibiotics, dressings and pressure bandages.

On Examination

On Primary survey

- Airway - patent
- Breathing - RR: 20/min, SpO2 - 95% at 6L O2
- Circulation - HR: 75/min, BP - 110/70 mmHg, Temperature: 98F
- Disability - GCS: E4V5M6, Pupils - B/L reacts to light normally; GRBS: 138 mg/dL,
- Exposure: An infected lump appears in the right upper part of the neck with discharge.
- ECG: shows normal sinus rhythm

Secondary Survey

HEENT-pallor present, no icterus, cyanosis, lymphadenopathy, JVP - not increased

Local examination revealed a right sided neck mass 10 x 10 cm noted with pus and bleeding.

On palpation: local increase in current temperature. Purulent drainage noted. Light bleeding +. Tenderness over the mass noted.

Chest

- On inspection – No deformity or scar mark observed.
- Bilateral equal chest enlargement was observed
- On auscultation - bilateral equal vesicular breath sounds.
- No added sounds are heard.

CVS - First and second heart sounds are audible, no murmurs or friction rubs

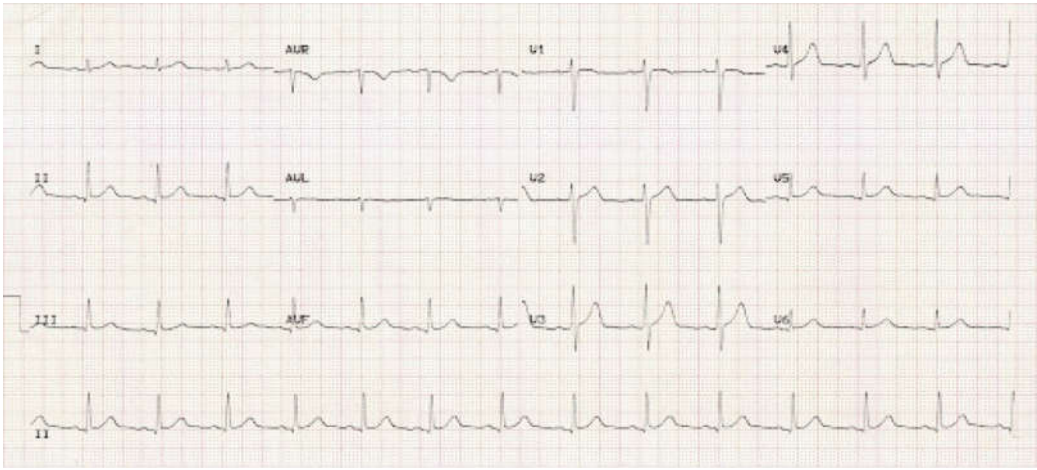

Fig. 1: ECG: shows normal sinus rhythm

CNS - Conscious and oriented, no focal neurological deficit.

Abdomen

Inspection - no scar, no swelling, Umbilicus-normal in condition,

No engorged vein. Hernial Orifice - Common

Palpation - soft, no tenderness no palpable mass is felt and normal bowel sounds.

Percussion - No dullness, fluid thrill or shifting dullness

Auscultation - Bowel sounds heard. No tenderness, no bruit.

External genitalia - normal

Extremities - within normal limits

Investigations

Complete Blood Count

Hemoglobin- 9.1 g/dl,

Total Leucocyte Count-7.40 10^3/ul, Neutrophil - 80%, Lymphocytes - 15%

Na+/K+ = 132/3.4

LFT : Total Bilirubin - 0.47 mg/dl, SGOT - 19.2 U/L, SGPT - 25 U/L, ALP - 94.5 U/L, GGT - 29.3 U/L, Total Protein - 7.2 g/Dl, Albumin - 4.4 g /Dl, globulin – 2.8 g/Dl, A:G – 1.57

INR: 1.07

RFT: Urea/creatinine = 35/0.81

CXR - Both lungs are clear and enlarged with no infiltrates. There are no focal areas

of consolidation. No suspected pulmonary embolism. No pleural effusion.

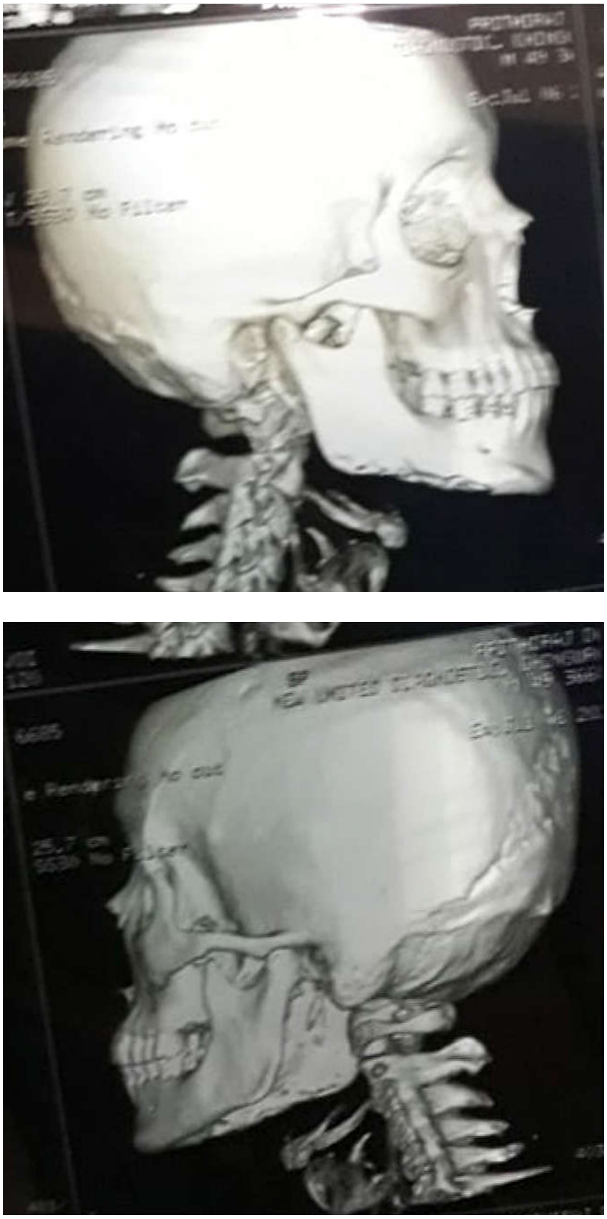

Fig.2: CT Face and Neck

Management

Day 1

Patient was already on Amoxicillin-Clavulanate 625 TDS and Metronidazole 400 mg TDS since 4 days. On arrival, he was evaluated and was put on Oxygen support. Wound was evaluated and Culture was obtained (Which revealed Klebsiella Pneumonia ++). Wound dressing was done.

Routine blood investigations – CBC, CRP, RFT, LFT

Antibiotic support was given:

Inj. Meropenem 1 gm IV TDS,

Inj. Doxycycline 100 mg IV BD

Inj. Teicoplanin 400 mg.

Day 2

In view of Anemia- 2 units of PRBS was infused.

Day 4

Patient was taken to OT for Exploration of Right neck + Biopsy of soft and hard tissue + Incision and drainage of Right Submandibular abscess under GA.

Patient was monitored and observed for any worsening of symptoms, repeating all the routine investigations.

Day 8

Patient was discharged with Oral antibiotics (Amoxicillin-Clavulanate, Levofloxacin) and wound dressing advice.

Day 20

Histopathology Exploration biopsy from right neck.

Specimen: Curetted bone specimen from mandible – multiple fragments, Two irregular greyish white tissue from neck.

Microscopy: Section show bony trabeculae. Inter-trabecular spaces show degenerated fibrocollagenous tissue infiltrated with moderate mixed inflammatory infiltrates comprising of Polymorphs, Lymphoplasmacytic cells and histiocytes, foreign body giant cells and regenerative muscle fibres seen along with **Actinomycosis colonization observed.** No granuloma or evidence of any malignancy seen.

DISCUSSION

Actinomyces are nonspore-forming, filamentous and facultative anaerobes. They are common components of the oral flora in gingival crevices and tonsillar crypts and are particularly prevalent on periodontal pockets, dental plaques and carious teeth.[12]

Actinomycotic infections of the cervicofacial region are uncommon. Presenting clinical manifestations are confusing because they often mimic malignant or granulomatous lesions. Diagnosis can be difficult due to a general lack of familiarity with the disease and the low success rate

in culturing the organism as a result of its virulent nature. Since the cervicofacial manifestations of actinomycosis are varied, a high index of suspicion is required to make an accurate and timely diagnosis.[11]

Lack of lymphadenopathy despite a large, aggressive-appearing mass with inflammatory changes may be a helpful clue in differentiating cervicofacial actinomycosis from malignancy.[13]

Diagnostic imaging technologies such as CT and magnetic resonance imaging generally yield nonspecific findings, contributing only to defining the radiological characteristics of the mass and its involvement in the adjacent soft tissues.[14]

Culture and isolation of bacteria makes a definitive diagnosis of the disease. However, Actinomyces growth is very difficult even on suitable anaerobic media, with recovery from culture being <50%. A possible suppressive effect of previous antibiotic therapy may also be attributed to negative bacterial cultures.[15]

Antibiotics, especially penicillin, form the mainstay of treatment for actinomycosis, long-term antibiotic therapy eliminates all signs of disease activity and prevents reactivation. In a recent series, 3–6 weeks of oral antibiotic therapy, combined with surgical drainage, is curative for cervicofacial actinomycosis.[16] Surgical therapy is often indicated for bony curettage, excision of necrotic tissue, transection of the sinus tract, and gentle drainage of tissue abscesses.

CONCLUSION

Cervicofacial actinomycosis is very uncommon during this age of antibiotic usage. It can be an airway – red alert for Emergency Physicians, as it can present them with an obstructed or a difficult airway. Proper identification; even though the culture might be negative in most of the cases, remains the cornerstone of treatment. Initiating the adequate antibiotic support, planning for surgery and Exploratory biopsy is the standard mode of treatment. Even though uncommon, Cervicofacial actinomycosis can still present and can be a potential threat if left undetected.

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