Case Report

Primary actinomycosis of hand

Sanghamitra Padhi, Muktikesh Dash, Jyotirmayee Turuk, Rani Sahu, Pritilata Panda

Department of Microbiology, M.K.C.G Medical College and Hospital, Berhampur, Odisha, India

Abstract

Actinomycosis is a chronic granulomatous suppurative disease having the propensity for extension to the contagious tissue with the formation of multiple discharging sinus tracts. Primary actinomycosis of extremity is a very uncommon clinical entity and is commonly considered as a soft-tissue infection. We report here, a case of primary actinomycosis of the upper extremity in a 24-year-old male who was treated successfully with surgical excision and extended period of antimicrobial treatment.

Key words: Actinomycosis, anaerobicbacteria, hand

Address for correspondence:
Dr. Sanghamitra Padhi, Department of Microbiology, M.K.C.G Medical College and Hospital, Berhampur - 760 004, Odisha, India.
E-mail: padhisanghamitra@yahoo.in
Received: 30.03.2013, **Accepted:** 12.05.2013

INTRODUCTION

Actinomycosis is a chronic indolent infection caused by anaerobic or microaerophilic bacteria, primarily of the genus *Actinomyces* that colonize the mouth, colon and vagina.[1] The three major forms of actinomycosis encountered are cervicofacial (65%), abdominal/pelvic (20%) and thoracic (15%).[2] Because of the exclusively endogenous habitat of the bacteria, primary actinomycosis of extremity is very rare with less than 50 case reports in the literature.[3]

We report a case of primary actinomycosis of the upper extremity that involved the skin and the underlying subcutaneous tissues and muscles.

Access this article online	
Quick Response Code:	Website: www.advbiores.net
	DOI: 10.4103/2277-9175.145700

CASE REPORT

A 27-year-old male patient presented as multiple fistulas along with pain and swelling of the left hand since 2 years. He was a daily laborer and remembered a history of trauma to his hand around 2 years ago. He received different antibiotics but was left without cure. There was no history of any immunodeficiency or underlying disease. Physical examination was normal except a swelling in the left hand that extended from wrist to metacarpophalangeal joint of all the fingers, along with multiple discharging sinuses at the dorsal and palmar aspects of the hand [Figures 1 and 2]. The discharge was scanty and purulent with an offensive odor. The swelling was immobile in all directions and was fixed to the underlying structures. The movement at the metacarpophalangeal joint was restricted.

An initial clinical diagnosis of tuberculosis was made due to endemicity of the disease in Odisha, India. The routine biochemical and hematological tests including erythrocyte sedimentation rate were within the normal range. The X-ray of the upper extremity revealed no significant abnormalities. Swabs collected

How to cite this article: Padhi S, Dash M, Turuk J, Sahu R, Panda P. Primary actinomycosis of hand. Adv Biomed Res 2014;3:225.

from the discharging sinuses were subjected to microbiological studies. Few pus cells and no bacteria were detected in the microscopy. Microbiological cultures for aerobic and anaerobic organisms showed growth of only *Staphylococcus aureus* which was sensitive to linezolid. Based on acid fast staining and culture, tuberculosis was ruled out. Hence, patient was advised with oral 600 mg of linezolid twice daily for 10 days, which yielded only a partial, but not complete relief. Finally, curettage and biopsy of the draining sinuses was made, which revealed many neutrophils with some colonies consisting of radiating filaments, surrounded by eosinophilic hyaline material creating a sun-ray pattern, similar to that of actinomycosis [Figure 3]. There was no evidence of lung disease, tooth problems or gingivitis in patient. Hence, a diagnosis of primary actinomycosis of hand was made for which he was treated with surgical debridement [Figure 4] and intravenous and oral penicillin therapy for 6 months to which patient showed excellent response.

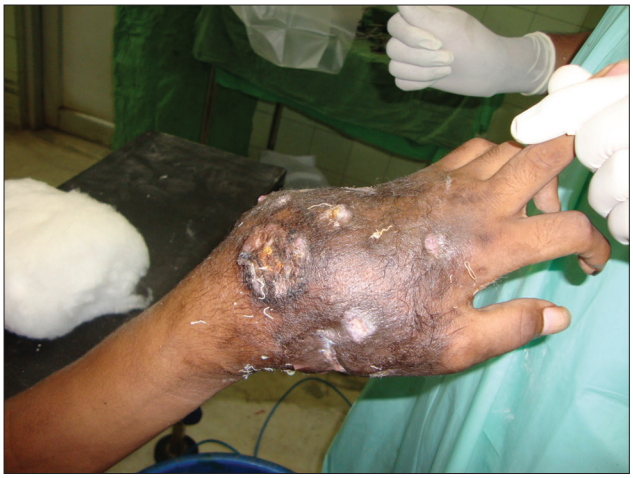

Figure 1: Dorsal aspect of hand showing swelling and multiple sinuses

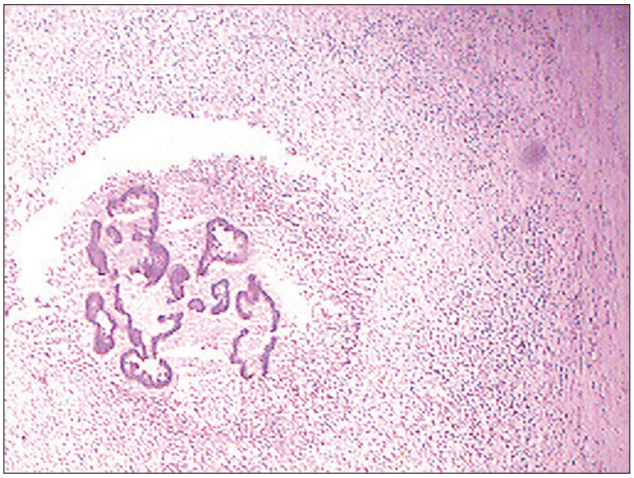

Figure 3: Histopathological study showing radiating filaments, surrounded by eosinophilic hyaline material

DISCUSSION

Actinomycosis is a rare infection caused by the gram-positive, non-spore forming and anaerobic bacilli *Actinomyces* spp. It is primarily a commensal bacteria found in normal oral cavities, including tonsillar crypts, dental plaques, caries teeth and female genital tract. In addition, some animals may also carry this organism, but cause similar disease. It has been never found in soil, in plants, or in any other object outside the body.[4] Most of the infections occurred after traumatic injury that created an anaerobic condition predisposing to this bacterial growth and actinomycosis usually, if not always, is polymicrobial in nature. The cultures are positive in only 24% of cases and diagnosis is often based on histopathological findings.[5]

Actinomycosis has been called "the most misdiagnosed disease" and its entity remained a diagnostic challenge

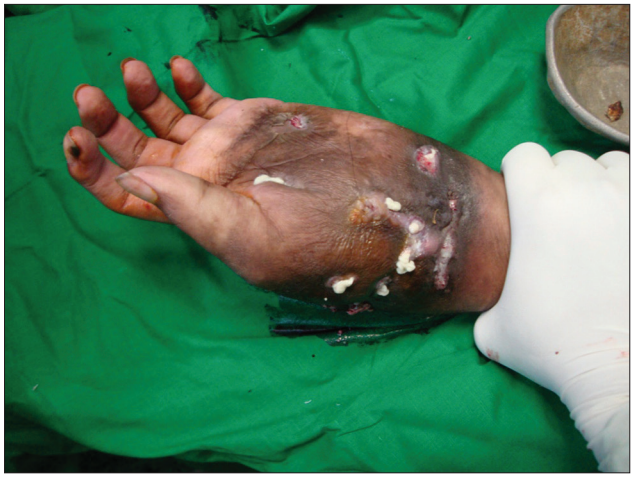

Figure 2: Palmar aspect of showing swelling and discharging multiple sinuses

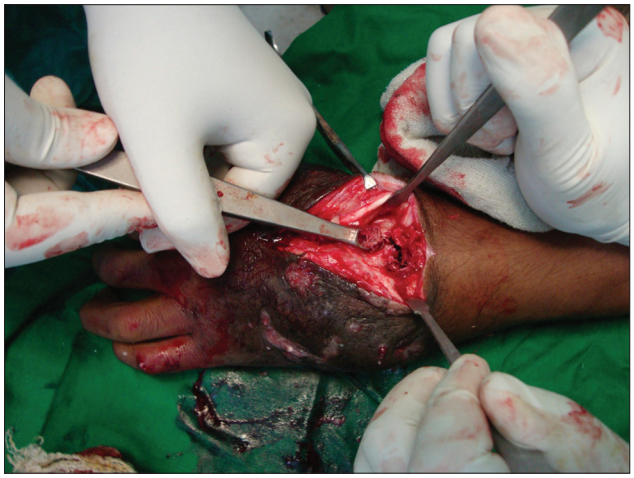

Figure 4: Photograph showing surgical debridement of the lesion

even to most experienced clinicians. Its chronic and indolent course resembles that of fungal infection, tuberculosis and malignancy, for which there is delay in early diagnosis.[6]

In the present discussed case, patient was a daily laborer and had a history of injury to the left hand. After few weeks he developed a swelling in the wrist which gradually extended toward metacarpo-phalangeal joints. He was treated with different kinds of antimicrobial agents which had little beneficiary effect. Although an initial suspicion was made for tuberculosis, it was ruled out by smear and culture examination. Based on history of trauma, clinical presentation and histopathological findings, patient was diagnosed as a case of primary actinomycosis, who showed an excellent response following surgical debridement and long-term penicillin therapy.

The clinicians should be aware of the full spectrum of the disease whose presentation is usually indolent and has various manifestations, including nodular lesions, subcutaneous abscess, or even mass lesion mimicking tumor. A high degree of suspicion and vigilance will expedite its early diagnosis and treatment which will minimize unnecessary surgical interventions, morbidity and mortality.

REFERENCES

1. Russo TA. In: Kasper DL, Fauci AS, Braunwald E, Houser SL, Longo DL, Janeson JL, editors. Harrison's Principles of Internal Medicine. 16th ed. New York: McGraw-Hill; 2005. p. 937-9.
2. Wilson DC, Redmond AO. An unusual cause of thoracic mass. Arch Dis Child 1990;65:991-2.
3. Fazeli MS, Bateni H. Actinomycosis: A rare soft tissue infection. Dermatol Online J 2005;11:18.
4. Russo TA. Agents of actinomycosis. In: Mandell GL, Bennett JE, Dolin R, editors. Principles and Practice of Infectious Diseases. 6th ed. Philadelphia: Churchill Livingstone; 2005. p. 2924.
5. Golden N, Cohen H, Weissbrot J, Silverman S. Thoracic actinomycosis in childhood. Clin Pediatr (Phila) 1985;24:646-50.
6. Kundu ZS, Singh R, Rana P, Bala R, Sangwan SS, Walecha P. Actinomycosis of hand and wrist: A case report. Internet J Orthop Surg 2007;5.

Source of Support: Nil, **Conflict of Interest:** None declared.