

Primary Actinomycosis of the Breast: Case Report

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Actinomycosis of the breast is very rare, and difficult to diagnose because of its close resemblance to neoplastic conditions. We encountered a case of actinomycosis of the breast, and report the mammographic and sonographic findings and review the literature.

Index words: Breast; Actinomycosis; Breast, Infection; Mammography; Ultrasound

Introduction

Actinomycosis is an uncommon disease which generally appears in the cervicofacial, thoracic and abdominal regions. Actinomycosis of the breast is very rare. There have been fewer than 20 reports since its first description by Ammentorp in 1893 (1-3). This rare disease is difficult to diagnose because of its close resemblance to neoplastic conditions.

Case Report

The patient was a 43-year-old woman presented with painful mass in the left breast for 10 days. On physical examination, a hard mass was palpated at the subareolar 9 o'clock direction of the left breast. There was no fever, nipple discharge, tenderness, or palpable axillary lymphadenopathy. Laboratory findings were normal.

Mammography demonstrated an ill-defined high den-

sity lesion in palpable portion of the subareolar 9 o'clock direction of the left breast. Ultrasound examination showed an ill-defined lobulated, 1.4 × 1.3 cm sized heterogeneously hypoechoic mass with thick hyperechoic boundaries at the subareolar 9 o'clock direction of the left breast. The radiologic findings suggested the possibility of malignancy. Excisional biopsy was done. Histologic examination revealed sulfur granules with microabscesses, consisted with actinomycosis (Fig. 1).

Discussion

Actinomycosis is a rare granulomatous suppurative infection caused by anaerobic, filamentous, gram-positive non-acid-fast bacteria, primarily of the genus *Actinomyces* that are part of the normal oral flora. *Actinomyces israelii* is the most common pathogenic agent.

The main clinical manifestation occurs in cervicofacial, thoracic, abdominal, and pelvic regions. Predisposing factors include diabetes mellitus, longterm use of contraceptive intrauterine devices (pelvic involvement), previous surgery (post-appendectomy abdominal actinomycosis) and dental extraction, trauma

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and poor dental hygiene (cervico-facial involvement) (4). The route of infection is controversial. In addition to direct spread and aspiration of infected material, hematogeneous dissemination also occurs (5).

Rarely, breast involvement of actinomycosis has been reported. The nipple is considered as the site of entry of primary actinomycosis of the breast. In support of this probability is the fact that, in the majority of cases, the lesions are located in the periareolar region of the breast as in our case. Possible causes of this condition include lactation, kissing, and trauma (3). Secondary actinomycosis is caused by extension of the infection from the lung through the thoracic cage.

Primary actinomycosis of the breast has extremely

variable clinical presentations. It may present as a recurrent mammary abscess, often periareolar or subareolar. Purulent or bloody discharge from sinus tract may occur. In advanced cases, breast distortion by sinus formation and scarring may be present. Another clinical presentation of actinomycosis is chronic abscess. A hard mass is formed within the gland and differentiation from malignancy may be impossible (3). When sinus formation is present, it should be differentiated from chronic suppurative mastitis, tuberculosis, syphilis, and chronic osteomyelitis of the ribs (3).

The correct diagnosis is often determined only after mastectomy or open biopsy. It is possible to confirm the diagnosis of actinomycosis by culture in less than 50%

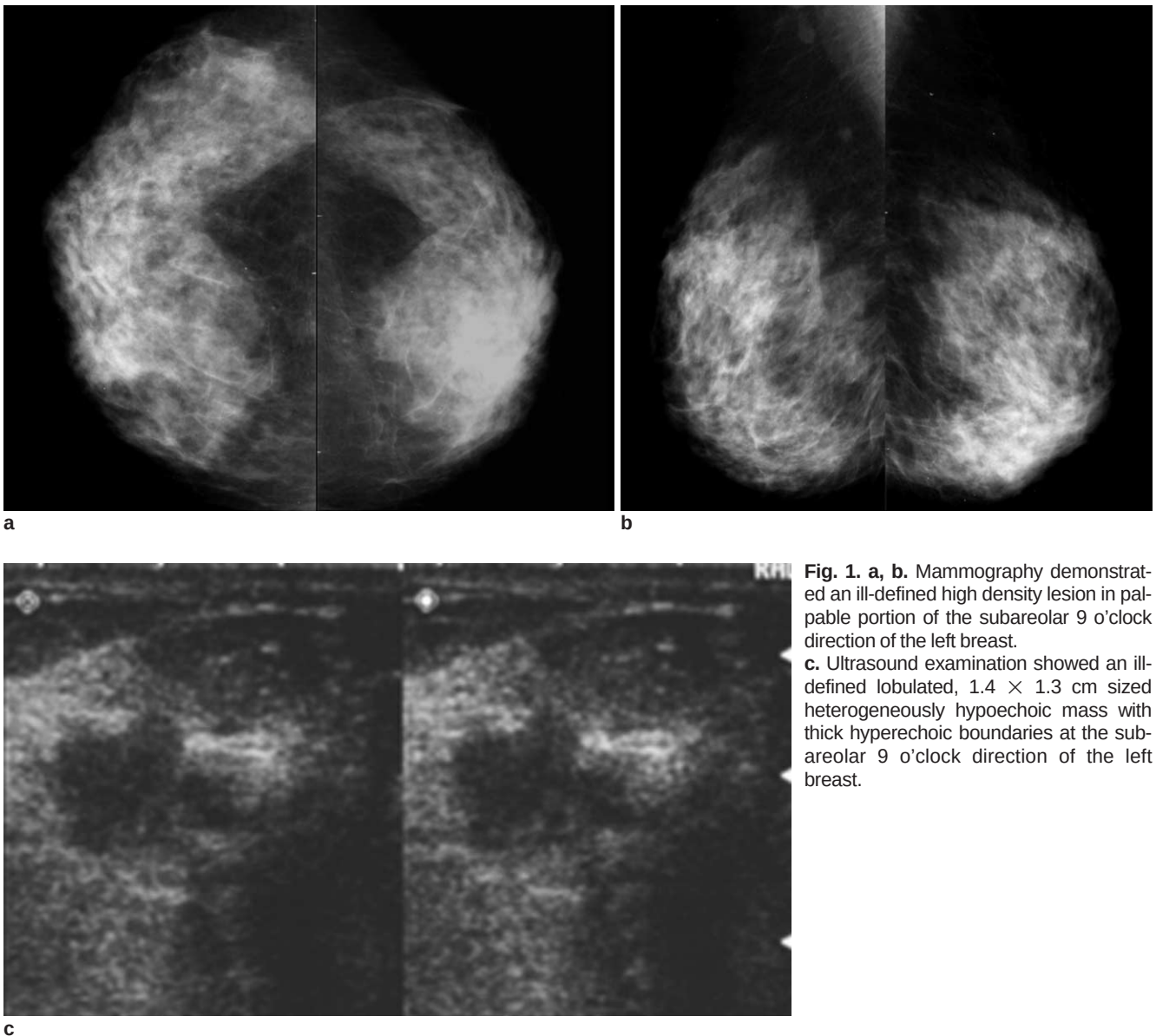


Fig. 1. a, b. Mammography demonstrated an ill-defined high density lesion in palpable portion of the subareolar 9 o'clock direction of the left breast.
c. Ultrasound examination showed an ill-defined lobulated, 1.4 × 1.3 cm sized heterogeneously hypoechoic mass with thick hyperechoic boundaries at the subareolar 9 o'clock direction of the left breast.

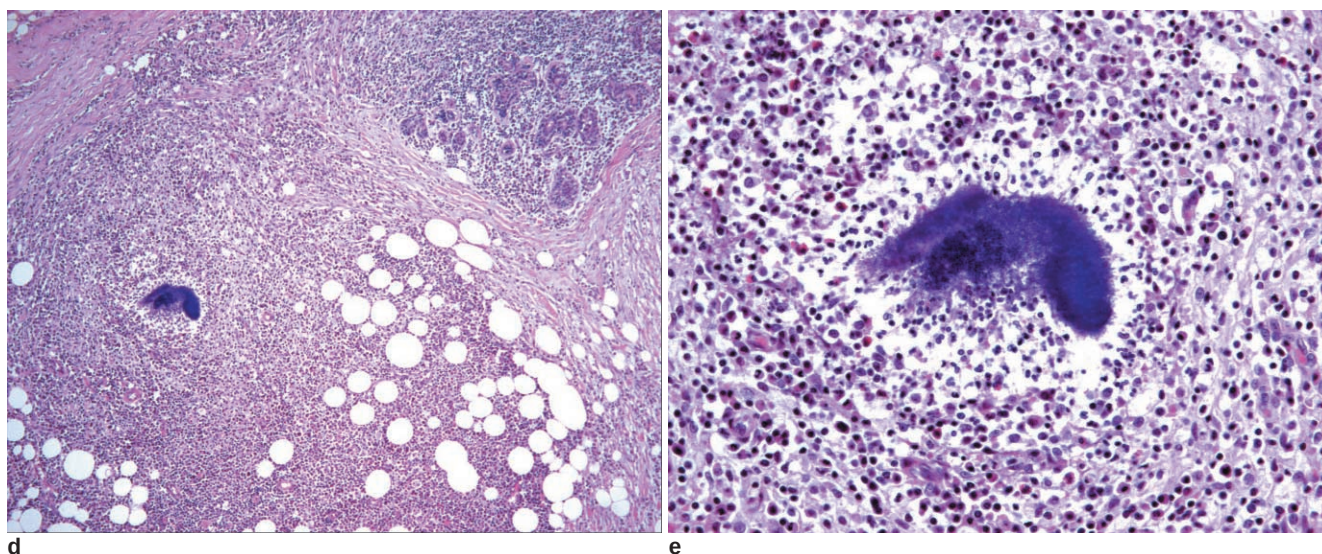


Fig. 1. d, e. The histopathological specimen showing the radiating filaments of actinomycetes surrounded by an infiltration of inflammatory cells and granulation tissue (arrows). (Hematoxylin and eosin stain, $\times 200$) Dense inflammatory infiltration with abscess formation and sulfur granules were demonstrated on microscopic examination. Microphotography of the mass (H-E, $\times 200$) illustrates sulfur granules surrounded by neutrophils.

of clinically suspected cases. The presence of sulfur granules composed of actinomycosis colonies in histological sections, allows the diagnosis to be made when culture is unsuccessful or suitable specimens for culture are not available (6).

Long term, high-dose penicillin has been reported as the treatment of choice, although controversy exists regarding parenteral vs. oral administration, and duration of therapy. Tetracycline, erythromycin and clindamycin are effective alternatives. Several reports have suggested a quite favourable prognosis in cases in whom limited surgical intervention plus antibiotic therapy is realizable (7).

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유방의 원발성 방선균증: 증례 보고

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