Actinomycosis of the breast and lungs

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ABSTRACT

Actinomycosis is a chronic, progressive, and often relapsing granulomatous infection that characteristically crosses tissue planes and forms abscesses and sinus tracts. We report a unique case of a woman with actinomycosis presenting with a breast abscess, a sinus tract spontaneously exiting the sternum, and miliary lung lesions.

KEYWORDS Actinomycosis; breast abscess; miliary lung lesion; sinus tract; sulfur granules

CLINICAL HIGHLIGHTS

A 50-year-old woman presented with a 1-year history of dyspnea on exertion; a 2-week history of a painful, swollen right breast; and a 10-day history of constant pressure and aching discomfort in the lower part of her sternum. On examination, she had a tender, warm right breast and several draining 6sinuses in and near the sternum (*Figure 1a*). A chest radiograph showed diffuse miliary lesions bilaterally with increased markings in the right lower lung field (*Figure 1b*). Contrast material injected into a sinus opening in the lower sternum demonstrated irregular tracts and cavities up to 5 cm in diameter in the soft tissues of the right breast and chest wall (*Figure 1c*). There was no connection between these abnormalities and the pleural space or lung.

The clinical findings suggested three diagnostic possibilities: tuberculosis, actinomycosis, and inflammatory carcinoma of the breast. Incision of the right breast uncovered pockets of pus, but stains and cultures of the pus for acid-fast, fungal, and bacterial organisms were negative. Open lung biopsy, however, showed microabscesses containing sulfur granules. Cultures of this material again were sterile, and stains showed no pathogens. Nevertheless, the combination of draining sinuses with sulfur granules pointed strongly to actinomycosis as the primary disease. Accordingly, the patient received high doses of penicillin intravenously for 6 weeks. By the end of that therapy, the breast abscess had

healed, the sinus openings had closed, and the lung lesions had all but disappeared.

DISCUSSION

Actinomycosis is a chronic, progressive, and often relapsing granulomatous infection that characteristically crosses tissue planes and forms abscesses and sinus tracts.^{1–3} It frequently simulates other infections and malignancy, clinically and radiologically.^{1,4} Various organisms from the genus *Actinomyces* cause the disease; they are Gram-positive, rod-shaped, anaerobic or microaerophilic bacilli that are difficult to grow and are recovered in less than half of the cases.^{5,6} In the appropriate clinical setting, however, the finding of sulfur granules virtually guarantees the diagnosis of actinomycosis.^{3,4,7} Long-term antibiotic therapy—especially with penicillin, coupled at times with surgical intervention—is generally recommended and can be curative.^{1–3,5}

Actinomycosis causing breast abscess is rare in men^{8–12} as well as in women.^{4,12–23} As a cause of miliary lung lesions^{24–28} or of spontaneous sinus tracts exiting the sternum,^{29,30} it is even rarer. Yet, all three of these manifestations were evident simultaneously in our patient. From a literature search, this case appears to be unique.

BOTTOM LINE

If the patient has a breast abscess, a sinus tract spontaneously exiting the sternum, miliary lung lesions, or

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Figure 1. (a) Clinical photograph showing the right breast and several sinus openings in and near the lower sternum. (b) Chest radiograph depicting miliary densities throughout both lungs and increased markings in the right lower lung field. (c) Sinogram demonstrating contrast material in a sinus tract (arrows) and multiple cavities in the soft tissues of the right breast and chest wall.

any combination thereof, actinomycosis—despite its relative rarity—could be the culprit.

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