A 62-year-old man with no significant medical history presented with 1-week history of right shoulder pain. There was no history of trauma. A shoulder radiograph series revealed a mass in the right lung apex. He denied any recent history of fevers, chills, weight loss, or hemoptysis. He had a temperature of 99.1°F, BP of 131/77 mm Hg, pulse of 88 beats/min, respiratory rate of 20 breaths/min, and pulse oximetric saturation of 98% on room air. The findings of a physical examination were unremarkable, except for slightly decreased air entry on the right upper lung fields anteriorly. He had slight pain on shoulder abduction, adduction, and internal rotation. There was no tenderness over the acromioclavicular joint.

Laboratory studies revealed a leukocyte count of 22 × 10^3 cells/μL, with 84% polymorphonuclear cells, 8% lymphocytes, 6% monocytes, and 1% eosinophils. A posteroanterior chest radiograph (Fig 1) showed a right upper lobe lesion that was not well seen on the lateral radiograph (Fig 2). The patient developed slight swelling in the anterior right chest wall just below the right clavicle within the next 24 h. There was no tenderness or erythema of the skin. A CT scan of the chest was performed (Fig 3).

**What is the diagnosis?**

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Figure 2. Lateral chest radiograph.

Figure 3. CT scan of the chest.
Diagnosis: Pectoralis pyomyositis due to Staphylococcus aureus

The CT scan showed 7.5 x 5 cm lesion in the anterolateral aspect of the right upper lobe containing several small air collections and involving the pectoralis muscle. The fluid density was 34 Hounsfield units. Fine-needle aspiration of the lesion was performed, and 10 mL yellowish, dense pus was aspirated. He was given treatment with IV ampicillin-sulbactam. Aerobic and anaerobic cultures revealed only S aureus. Incision and drainage of the lesion were performed under general anesthesia. The collection of pus involved the pectoralis muscles but did not invade the pleural space. The patient was discharged from the hospital to home and received oral antibiotics for 6 weeks, with complete resolution of symptoms and radiologic findings, and he had no recurrence after 18 months of follow-up.

The differential diagnosis of a lesion involving the lung and chest wall include actinomycosis, aspergillosis, blastomycosis, cryptococcosis, nocardiosis, tuberculosis, bacterial infections, lymphoma, bronchogenic carcinoma, malignant mesothelioma, and rare chest wall tumors invading the lung.1–4 Although initially suspected, neither the lung nor the pleural space was involved in this case.

Pyomyositis is a rare primary pyogenic infection of the skeletal muscles that is not secondary to a contiguous skin, bone, or soft tissue infection. It occurs predominantly in the tropics and has been called tropical pyomyositis, a condition mostly seen in children.5,6 Nontropical pyomyositis was first described in the United States in 1971.7 Two thirds of the reported cases are adults,5,6 and only 9% of patients reported recent travel or immigration from a tropical area.5

Risk factors include diabetes mellitus, HIV infection, and malignancy.6 However, in one third of the patients no risk factors can be found,6 the involvement of lower limb muscles is common, while chest wall muscle involvement is less frequent.5,6,8 S aureus is the most frequent pathogen.5,6

Pyomyositis has a subacute onset, and the clinical course has been described in three stages.5,6 In stage 1 (the invasive stage), the patient usually has a low-grade fever, muscle pain, and mild local tenderness. Stage 2 (the purulent stage) starts after 1 to 3 weeks, and the involved muscle shows signs of painful induration, which transforms rapidly into diffuse swelling. At this stage, pus can be drained from the involved muscle. Stage 3 (the late stage) shows extensive destruction of muscle, and the patient may develop sepsis and shock. Patients usually seek medical care in the second stage.

Laboratory evaluation may show leukocytosis and elevated sedimentation rate. Eosinophilia is seen frequently in tropical pyomyositis but is uncommon in nontropical pyomyositis.5,6 The serum levels of muscle enzymes are usually normal despite extensive myonecrosis, and blood culture results are rarely positive. Doppler study for deep venous thrombosis can be false-positive due to the compression of veins by edema and pus.5 MRI is the most sensitive test in stage 1, while CT scanning and ultrasound can aid in the diagnosis in later stages.6 The definitive diagnosis is made by the demonstration of the causative organism by needle aspiration or surgical drainage. It may be hard to distinguish it from necrotizing fasciitis in early stages when muscle destruction is not present. A frozen biopsy specimen may be useful to distinguish between the two conditions.6

Stage 1 can be treated with antibiotics alone, but incision and drainage along with appropriate antibiotic therapy are needed to treat advanced stages of the illness. Since this is a potentially curable illness, prompt recognition and treatment are important.

References
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