Sir,

Enterococci are facultative anaerobic Gram-positive cocci that very rarely cause lung infections.\(^1\) Even rarer, enterococcal infection can cause empyema.\(^2\) In patients with systemic lupus erythematosus (SLE), empyema due to *Salmonella enteritidis*, *Mycobacterium tuberculosis*, and *Nocardia asteroides* has been reported,\(^3\) but *Enterococcus* has never been implicated.

A 23-year-old female with SLE presented with dyspnea, chest pain, and 2 weeks of fever and productive cough. There were absent breath sounds and dullness to percussion on the right hemithorax; investigations showed anemia, neutrophilia, and thrombocytopenia. Chest radiography confirmed a moderate pleural effusion and a concomitant right-sided pneumothorax. Tube thoracostomy resulted in purulent, malodorous drainage and fluid analysis confirmed empyema. On culture, there was heavy monomicrobial growth of *Enterococcus*. Despite drainage, the pneumothorax persisted over the next week [Figure 1a]. Computed tomography scanning confirmed persistent collapsed right lung and thickened visceral pleura [Figure 1b], leading to the diagnosis of trapped lung. The patient was treated with antibiotics and pulmonary decortication, with improved symptoms.

*Enterococcus* does not commonly cause pulmonary infection. However, when infection due to *Enterococcus* does occur, it tends to be complicated.\(^4\) Recently, a case of culture-negative empyema in SLE was described,\(^5\) the first in the literature. However, it was noted that the patient received a dose of levofloxacin before thoracentesis. The second case with a similar diagnosis of sterile empyema in SLE has since been reported, but this patient also received levofloxacin before culture.\(^5\) Grupper *et al.* have questioned whether enterococcal-associated respiratory infections are underdiagnosed due to the increased use of amoxicillin or fluoroquinolones.

Pneumothorax ex-vacuo or trapped lung has been described with complicated parapneumonic effusion. It is thought that chronic inflammation leads to the formation of a fibrous layer on the visceral pleura that prevents re-expansion. Although rare, empyema due to *Enterococcus* is a potentially life-threatening event in patients with SLE. Physicians must keep in mind this differential, and early thoracentesis with culture before antibiotic therapy is important. Finally, persistent pneumothorax after drainage in these patients must prompt the evaluation for visceral pleural thickening and pneumothorax ex-vacuo.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest
There are no conflicts of interest.

**References**

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**Figure 1:** (a) Chest radiograph and (b) computed tomography scan revealing persistent right-sided pneumothorax with visceral pleural thickening.
Empyema Necessitans: An Unexpected Infectious Presentation of Multiple Myeloma

Sir,

Empyema necessitans (EN) is a rare clinical entity in which a suppurative infection in the soft tissue forms due to a sinus tract between an empyema and the thoracic wall, usually in the setting of smoldering pneumonia or osteomyelitis. [1] With the advent of antibiotics, Streptococcus pneumoniae is uncommon unless there is underlying immunosuppression. [2] Multiple myeloma, a neoplastic proliferation of plasma cells, causes immunosuppression and can present with atypical infections due to encapsulated bacteria such as S. pneumoniae. [3] However, EN has never been reported in the setting of multiple myeloma. We describe the first case of S. pneumoniae EN in multiple myeloma.

A 41-year-old male with no significant medical history came to the emergency department with worsening right-sided chest swelling associated with fever, chills, night sweats, and weight loss, following sudden-onset rib pain 7–8 months prior. He denied recent travel, trauma, or infections. On presentation, he was febrile with erythema, tenderness, and induration over the right lateral chest and decreased air entry in the right lung base. Laboratories are notable for leukocytosis with normocytic anemia and thrombocytosis. Computed tomography chest demonstrated destructive changes involving the right ribcage associated with a soft tissue mass extending to the right costophrenic angle and the right lower lobe pleuroparenchymal tissue consistent with empyema [Figure 1]. Aspiration of the soft tissue mass revealed S. pneumoniae. The bone survey demonstrated multiple lytic lesions. Biopsy of the seventh right rib revealed sheets of small-to-intermediate bi- and multi-nucleated plasma cells staining positive for CD 138, with lambda light chain monotypia. Immunoglobulin G (IgG) level was elevated; IgA and IgE levels were decreased. Bone marrow biopsy confirmed the diagnosis of multiple myeloma.

The abscess resolved following 4 weeks of outpatient intravenous antibiotics through the peripherally inserted vascular catheter. The patient underwent induction therapy with bortezomib, thalidomide, and dexamethasone for multiple myeloma and was lost to subsequent follow-up.

S. pneumoniae is the most common organism associated with multiple myeloma, a neoplastic proliferation of plasma cells producing a monoclonal gammopathy with related organ or tissue impairment (lytic bone lesions, hypercalcemia, normocytic anemia, or renal failure). [3,4] Paraproteinemia may cause suppression of other IgG isotypes (such as IgA and IgM in our patient), decreased granulocyte adhesion, impaired leukocyte migration, and complement defect, all of which contribute to fulminant infections from encapsulated bacteria. [5] This patient developed S. pneumoniae EN from immunosuppression due to underlying multiple myeloma. Physicians should consider multiple myeloma in the differential for older patients with rare encapsulated bacterial infections, who also have symptoms of anemia, renal failure, and normocytic anemia.

Figure 1: Computed tomography chest, without contrast. Extensive soft tissue thickening, inflammation, and gas within the right lateral chest wall extending from the ribcage into the right lower lobe pleuroparenchyma indicating empyema necessitans.