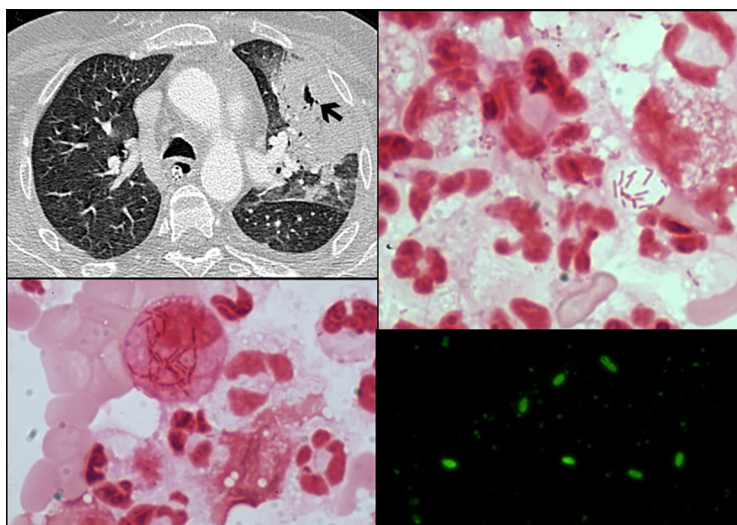




## Photo Quiz: A 44-Year-Old Kidney Transplant Patient with Pneumonia

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**FIG 1** (Upper left) Section of the chest CT scan, revealing left upper lobe consolidation and cavitation (arrow). (Lower left and upper right) Gram stain of the bronchoalveolar lavage fluid smear. Coloration was performed using a crystal violet-iodine complex and a basic fuchsin counterstain. Magnification,  $\times 1,000$ . (Lower right) Direct fluorescent antibody stain of the bronchoalveolar lavage fluid using monoclonal antibodies specific for the causative pathogen.

**A** 44-year-old woman was referred to our emergency ward for acute renal failure complicating an end-stage chronic renal insufficiency. The patient history was notable for type 1 diabetes starting at the age of 7, high blood pressure, and a kidney transplantation 18 years prior due to microvascular complications. The immunosuppressive treatment included prednisone, mycophenolate mofetil, and tacrolimus. Fifteen days prior to admission, she took cloxacillin for cellulitis of the left leg.

On admission, the patient reported vomiting, diarrhea, and headaches persisting for 3 days. The examination revealed a pulse of 106 beats/min, a blood pressure of 136/52 mm Hg, a respiratory rate of 22 cycles/min, and a body temperature of 37.7°C. The results of the physical examination were normal; particularly, no rales or abnormal sounds were heard on auscultation of the lungs. The patient had no chills, and no skin discoloration was noticed. The serum creatinine level was 1,080  $\mu\text{mol/liter}$ , and the leukocyte count was 29,000/ $\text{mm}^3$ . The arterial blood gas levels observed while the patient was breathing room air were partial pressure of  $\text{O}_2$  ( $\text{PaO}_2$ ) at 106 mm Hg, partial pressure of  $\text{CO}_2$  ( $\text{PaCO}_2$ ) at 11 mm Hg, and bicarbonates at 5 mmol/liter, and the pH was 6.95. The patient was transferred to the intensive care unit (ICU) for hemodialysis.

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For answer and discussion, see page 349 in this issue (<https://doi.org/10.1128/JCM.03512-14>).

Shortly after admission to the ICU, she became unconscious, with signs of acute respiratory failure, and required mechanical ventilation. The chest X-ray film revealed pneumonia involving the left upper lobe. The results of BinaxNOW urinary antigen tests (Alere) for *Streptococcus pneumoniae* and *Legionella pneumophila* were negative. Blood, stool, and urine samples and a bronchial aspirate were collected before piperacillin-tazobactam and vancomycin treatment was started. On the following day, urine and blood cultures were positive for extended-spectrum-beta-lactamase-producing *Enterobacter cloacae*. The bronchial aspirate showed normal oral flora, and the diarrheal stool was positive for the *Clostridium difficile* toxin B gene (GeneXpert, Cepheid). The antibiotic treatment was changed to metronidazole and imipenem. There was no clinical or radiological improvement, and the computed tomography (CT) scan revealed left upper lobe consolidation and cavitation (Fig. 1, upper left). Bronchoalveolar lavage fluid was collected; a Gram stain of the smear and a direct fluorescent antibody stain are shown in Fig. 1 (lower left, upper right, and lower right). Four days later, the causative pathogen was definitively identified on culture plates.