A Case of Myocarditis Associated with Legionnaires' Disease

Sir—We report a case of myocarditis associated with Legionnaires' disease. A 56-year-old woman was admitted to the intensive care unit with acute respiratory distress that occurred 2 days after she underwent gastrectomy for stomach cancer with peritoneal metastases. She was a smoker and chronic alcohol abuser. Her medical history included chronic bronchitis and asymptomatic arteritis of the lower limbs, which was revealed by Doppler examination. A few days before surgery, findings on physical examination of her heart as well as on an electrocardiogram and a chest roentgenogram had not revealed any abnormalities.

On admission to the hospital she was dyspneic and cyanotic. Her blood pressure was 108/71 mm Hg, and her pulse was 135/min. Her rectal temperature was 35.5°C. Her heart tones were slightly muffled, and chest examination revealed bronchospasm and widespread rales. There were no focal neurological abnormalities, and she was not confused. She complained of abdominal pain, and examination revealed enlargement of the liver. An arterial blood sample showed a PO₂ of 40 mm Hg (SaO₂, 66%), a PaCO₂ of 40 mm Hg, a pH of 7.25, and a total CO₂ content of 18 mmol/L. The creatine kinase level in blood was 93 U/L; the aspartate aminotransferase level, 36 U/L; the alanine aminotransferase level, 18 U/L; the alkaline phosphatase level, 82 U/L; the γ-glutamyl transferase level, 145 U/L; and the total bilirubin level, 38 µmol/L. The white blood cell count was 20,450/mm³, with 87% neutrophils and 13% lymphocytes.

Findings on a chest roentgenogram showed a bilateral infiltrate and pulmonary edema but no cardiac enlargement. Findings on an electrocardiogram revealed sinus tachycardia.

References

but were otherwise normal. Echocardiographic examination was performed on admission. The left ventricular (LV) chamber was not dilated (57 cm³/m²). The LV ejection fraction was low (46%), but no regional abnormal wall motion or wall thickening was noted. The wall thickness of the left ventricle was normal, and the myocardial mass (calculated by M-mode echocardiography) was normal.

Therapy with furosemide and dobutamine was initiated, and improvement in the patient's arterial gas exchange was noted on day 2 after admission. A dense alveolar infiltrate in the left upper lobe was noted on the chest roentgenogram on day 2, and a second alveolar infiltrate in the right middle lobe was noted on day 4. At the same time, the patient became feverish and tachypneic. Fiberoptic bronchoscopy on days 5 and 6 showed mild bronchitis. Cultures of blood and specimens from the respiratory tract did not yield bacteria. The patient needed mechanical ventilation on day 6 despite afterload reduction and inotropic treatment. Echocardiograms were performed daily and showed an increase in LV ejection fraction (62% on day 6) and a reduction in LV volume (35 cm³/m²). Antibiotic therapy (4 g/d of amoxicillin, 800 g/d of pefloxacin, and 3 g/d of erythromycin) was started on day 5, but she died of multiple organ failure on day 7.

Legionella pneumophila serogroup 1 was detected in bronchoalveolar lavage fluid on day 5 by direct fluorescent antibody staining (Diagnostics Pasteur, Marnes-la-Coquette, France) and culture on buffered charcoal yeast extract agar. Legionella antigen and nucleic acid were detected in tissues (heart, liver, and lung) obtained post-mortem by direct fluorescent antibody staining and amplification of a chromosomal DNA sequence from L. pneumophila, respectively. Tissue specimens were homogenized and, after extensive washing by centrifugation, DNA extraction and amplification were performed with use of the method and specific primers described by Starnbach et al. [1]. Since Legionella nucleic acid was detected in the blood after separation of leukocytes by the Ficol-Hyphaque method, PCR may have detected contaminating blood containing Legionella DNA (i.e., blood that contained Legionella DNA could have been detected in any other organ that contained residual blood). A serological test for L. pneumophila (by indirect fluorescent antibody staining) was negative on day 5.

Histologic examination of heart tissue showed an intense interstitial inflammatory reaction mainly involving mononuclear cells, but examination of myocardial fibers did not reveal any abnormalities.

Legionella infection can be associated with many clinical manifestations, including pericarditis, myocarditis, or endocarditis. Three cases of myocarditis previously have been reported in adult patients with legionella pneumonia. In the first case, the patient developed congestive heart failure associated with elevated levels of cardiac enzymes, transient changes on an electrocardiogram, and abnormalities detected on a thallium scan [2]. In the second case, evidence of focal nonspecific myocarditis without atherosclerosis was detected post-mortem [3]. In the third case, the patient had electrocardiographic evidence of myocarditis complicated by potentially fatal torsades de pointes [4]. In children, L. pneumophila infection with or without pneumonia can induce arrhythmia or myocarditis [5, 6].

In conclusion, myocarditis is a rare complication of legionellosis, and, in the few cases described in adults, it has been associated with pneumonia. In contrast, cardiac disorders have been described in association with legionella infection in children in the absence of respiratory or pulmonary symptoms. Legionella infection associated with myocardial involvement occurs too rarely to identify risk factors.

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References


Taxonomy of Rapidly Growing Mycobacteria

Sir—We disagree with several current names for rapidly growing mycobacteria listed in the recent article by Bruckner and Colonna [1] entitled “Nomenclature for Aerobic and Facultative Bacteria.”

The first of these designations is Mycobacterium chelonae, which is listed under the current name of M. chelonae subspecies chelonae. Until recently, M. chelonae consisted of two subspecies (M. chelonae subspecies abscessus and M. chelonae subspecies chelonae). Two recent studies of DNA relatedness showed that the type strains of the two subspecies had <70% homology and hence should be listed as separate species [2, 3]. The authors of the most recent of these studies, which was published in the International Journal of Systematic Bacteriology [3], recom-