Isolation of *Salmonella enterica* serotype Worthington from empyema fluid

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Salmonellae are uncommon causes of respiratory tract infection. We report a case where *Salmonella enterica* serotype Worthington was isolated from empyema fluid.

A 40-year-old male was admitted with complaints of fever and cough with expectoration for 8 days. The patient had experienced diarrhea 2 weeks earlier. He had been a chronic alcoholic for 12 years. On examination, he was febrile (38.3°C). Chest auscultation revealed crepitations on the right side. A chest radiograph showed an air-fluid level in the right upper zone with hydro pneumothorax. A provisional diagnosis of necrotizing pneumonitis with empyema was made. The empyema was drained, and the fluid processed for bacterial culture. Serial blood cultures and stool cultures were also undertaken. Empirical therapy was started with parenteral ampicillin and gentamicin.

Aerobic and anaerobic culture of the empyema fluid and blood samples, culture of stool samples, antibiotic sensitivity and identification of the isolate were done using the standard microbiological methods.

No organisms could be isolated from blood. Culture of empyema fluid yielded organisms that were identified as *Salmonella enterica* serotype Worthington. The organism was sensitive to ampicillin, cefotaxime, gentamicin, chloramphenicol, and ciprofloxacin. Based on the sensitivity report, therapy with ampicillin and gentamicin was continued. Serial stool cultures did not yield *Salmonella*. The patient's condition improved, and he was discharged on day 17.

Salmonellae have been rarely isolated from cases of necrotizing pneumonitis. Some of the serotypes that have been implicated in pleuropulmonary infections include Typhimurium, Derby, Virchow, Rstock, and Enteritidis.1

Serotype Worthington is an emerging pathogen, and has caused outbreaks of meningitis in neonates.2 In adults, this serotype has been implicated in a case of infective endocarditis.3 However, to our knowledge, this is the first report of isolation of serotype Worthington from empyema fluid. Multiresistant isolates of this serotype have been reported in nursery outbreaks in India.4 Fortunately, the isolate that we recovered was found to be sensitive to commonly used antibiotics.

In most cases of necrotizing pneumonitis, the organism gains entry into the respiratory tract due to aspiration. In this case, *Salmonella* was isolated from the empyema fluid, but not from blood or stool. The lung parenchymal involvement in this patient was probably a primary infection due to aspiration, possibly during the episode of gastroenteritis 2 weeks before admission. Aspiration could be attributed to his frequent inebriated condition. The current literature did not provide information regarding gastroenteritis due to serotype Worthington.

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