

## PRESENTACIÓN DE UN CASO

INSTITUTO DE MEDICINA TROPICAL "PEDRO KOURÍ"

### ***Aeromonas*: an emerging pathogen associated with extraintestinal infection in Cuba**

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#### SUMMARY

An 87 years-old female with a history of heart disease who has been presenting dysnea and fever for 2 months was evaluated. A sputum bacteriological study proved positive for *Aeromonas hydrophila* in the context of an existing lung cancer. The study was negative for acid fast bacilli.

**Subject headings:** AEROMONAS HYDROPHILA; RESPIRATORY TRACT INFECTIONS/ complications; LUNG NEOPLASIA/ complications.

The genus *Aeromonas* has been associated with a wide variety of human infective syndromes both as a primary pathogen, and as an opportunistic agent. Its appearance outside the intestine is less frequent and occurs mainly in adults, producing infection in skin lesions following exposure to polluted water, bacteremia meningitis (usually in patients with hematological neoplasia, solid tumors and hepatic cirrhosis), osteomyelitis and conjunctivitis among others.<sup>1</sup>

#### CASE REPORT

An 87 years-old female patient was admitted to Las Tunas General Hospital in Cuba with a recent history of natural dysnea and fever for 2 months and a history of heart disease.

On admission, the patient was suffering from fever, cough, anorexia, vomiting, stomachache and blood purulent sputum. Physical examination revealed crepitate raler. Significant laboratory findings included WBC count of 10 300/mm<sup>3</sup> with 79 % neutrophils, erythro sedimentation at 46 mm/L, GTP 8.2, GTO 6.5 and a negative acid-fast sputum stain.

The patient began treatment with penicillin but this proved ineffective. The antibiotic was discontinued for several days and changed to gentamicin; after its administration the patient improved, the fever disappeared and the patient was discharged.

The sputum cultures carried out shortly after admission were negative for *Mycobacterium* as well as for all common bacterial pathogens for

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respiratory tract infection. However, after 24 hours of incubation pure growth of facultatively anaerobic gram-negative rods occurred. A presumptive identification was made for oxidase, catalase and ferment-D-glucose essentially. After testing for resistance to vibriostatic compound O/129 (150 mg) and observing growth in 6 % NaCl, the microorganism was identified as *Aeromonas* ssp. Biochemical testing was performed using the API 20E system (Bio Mérieux, France), resulting in a positive reaction for catalase, oxidase, L-lysine and L-ornithine decarboxylase. Acid was produced from glucose, manitol, arabinose and sucrose in oxidation fermentation medium. Negative reactions were noted for arginine dihydrolase, citrate, urease, tryptophan deaminase and thiosulfate reductase, as well as resistance to O/129 vibriostatic agent (150 mg). The strain was identified as *Aeromonas hydrophila*.

Susceptibility test results of this strain isolated by disk-diffusion indicated that the strain was susceptible to tetracycline, trimethoprim-sulfamethoxazole, kanamycin, cefuroxime, cefotaxime, chloramphenicol and gentamicin but resistant to ampicillin, penicillin, carbenicillin and colistin. The resistance to  $\beta$ -lactam antibiotic by the genus *Aeromonas* has been considered to be dependent on chromosome-mediated  $\beta$ -lactamases. Second (cefuroxime) and third (cefotaxime) generation cephalosporins were seen to be the most active against *Aeromonas hydrophila*. These results match findings by other authors.<sup>2-4</sup>

Over the past ten years, reports have documented *Aeromonas hydrophila* as respiratory pathogens. The clinical features have ranged from pneumonia, empyema and the formation of fatal lung abscesses. Evidence supporting *Aeromonas* as respiratory pathogen includes results from chest radiography, sputum analysis, CT scan, etc. There are two types of patients with respiratory symptoms: those having contact with an aquatic environment and those with underlying disease whose infections often appear to arise from the haematogenous spread of *Aeromonas hydrophila* from the gastrointestinal tract to the respiratory tract.<sup>5-7</sup>

The patient presented in this case study shows the potential of local invasive *Aeromonas* infection

in the context of malignant disease, since *Aeromonas hydrophila* was grown from sputum. The conclusion was that the patient had an overwhelming *Aeromonas hydrophila* infection at a time of on-going cellular damage due to lung neoplasm. Considering its importance as an emerging pathogen, this case once more shows the pathogenic role of *Aeromonas hydrophila* when isolated in pure culture from sputum of immunocompromised patients. This case of a patient suffering from lung cancer and *Aeromonas hydrophila* infection is the first described in Cuba.

#### ACKNOWLEDGMENTS

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#### RESUMEN

Se evaluó una paciente de 87 años con antecedentes de cardiopatía que había estado presentando disnea y fiebre durante 2 meses. Un estudio bacteriológico resultó ser positivo ante la *Aeromonas hydrophila* en el contexto de un cáncer de pulmón existente. El estudio fue negativo para los bacilos ácidos rápidos.

**DeCS:** AEROMONAS HYDROPHILA; INFECCIONES DEL TRACTO RESPIRATORIO/ complicaciones; NEOPLASIA DEL PULMÓN/ complicaciones.

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