Purulent Pericarditis Due to Neisseria mucosa*

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A 51-year-old man with chronic renal failure developed purulent pericarditis. Cultures of pericardial fluid and tissue grew Neisseria mucosa.

Neisseria mucosa, a normal inhabitant of the human nasopharynx, once regarded as nonpathogenic, is now known to cause serious infections including meningitis,1-3 endocarditis2-4 and empyema.5 We describe the first documented case of purulent pericarditis due to N mucosa.

CASE REPORT

A 51-year-old man with a five-year history of chronic renal failure secondary to hypertension, was hemodialyzed three times weekly. Ten hours before admission he developed substernal pleuritic chest pain which radiated to both shoulders, and was associated with dyspnea. Two weeks previously, symptoms of an upper respiratory infection had cleared spontaneously.

He appeared chronically ill with severe chest pain. Temperature was 99.5°F (37.5°C); pulse rate 100/min; blood pressure 140/98 mm Hg (paradox of 17 mm Hg) and respiratory rate 20/min. He had hypertensive retinopathy, distended neck veins and rales at both lung bases. A three-component pericardial friction rub was heard over the precordium. Chest x-ray films showed pulmonary congestion and massive cardiac enlargement. ECG revealed first degree A-V block. These radiographic abnormalities were not present one month previously. His hematocrit level was 35 percent; leukocyte count 27,000/cu mm with a left shift. Blood urea nitrogen (BUN) 70 mg%, creatinine 15 mg%, sodium (Na) 131; (K) 5.7; potassium chloride (Cl) 93; HCO	extsubscript{3} 17 mEq/liter; arterial pH 7.35; PO	extsubscript{2} 57 mm Hg; PCO	extsubscript{2} 33 mm Hg. Pericardial effusion was confirmed by echocardiogram.

He was treated with indomethacin and daily hemodialysis for presumed uremic pericarditis. His chest pain decreased and the leukocyte count fell to 10,000/mm	extsuperscript{3}. On the fourth hospital day atrial fibrillation was noted and his heart size increased (Fig 1). A Swann-Ganz catheter revealed the following pressures (mm Hg): right ventricle 50/20; pulmonary artery 40/20, pulmonary capillary wedge 26; right atrium 22. Pericardiocentesis yielded 240 ml of fluid: protein 7.2 gm percent, lactic dehydrogenase (LDH) 3,500, glucose 24 gm/100 ml and leukocytes 13,875/mm	extsuperscript{3} (90 percent polymorphonuclear [PMN]); gram-negative diplococci were seen microscopically. Blood cultures were negative. The next day a pericardiotomy was performed. Pericardial fluid and tissue grew Neisseria mucosa,6 resistant to penicillin but sensitive to cephalosporins. He was treated with cephalothin 6 gm/day intravenously for three weeks, with complete resolution of the infection.

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FIGURE 1. Chest x-ray film on fourth hospital day showing massive cardiac enlargement consistent with pericardial effusion.

DISCUSSION

With the exception of N gonorrhoeae and N meningitidis, members of the genus Neisseria are frequently considered as nonpathogens. However, immune-compromised patients are susceptible to serious infections due to commensal organisms, and well documented cases of N mucosa meningitis,1-3 endocarditis2-4 empyema,5 tonsillitis, pneumonia and bronchitis7 have been reported. One case of endocarditis due to N mucosa in an otherwise normal host has also been described.8

Aseptic pericarditis due to uremia appears to predispose to purulent pericarditis.9 We may presume that our patient had uremic pericarditis, although specific evidence had not been found. Asymptomatic bacteremia from colonization of the mucous membranes may have been responsible for seeding the previously inflamed pericardial sac.

Although uremic pericarditis without infection causes fever,10 the development of a high leukocyte count suggests bacterial infection; in this situation it is essential to perform pericardial aspiration for bacteriologic evaluation. This case further demonstrates that the return of the leukocyte count toward normal while the patient is on indomethacin therapy does not exclude the diagnosis of bacterial infection. Documentation of purulent pericarditis by Gram stain and culture led to prompt surgical removal of the pericardial fluid and antibiotic therapy was begun, according to the recommendations for combined medical and surgical treatment.11

Previously reported cases show that N mucosa does not always share the same antibiotic susceptibility pattern with other Neisseriae. N mucosa may be resistant either to penicillin or cephalosporin, although no clinically significant isolate has been resistant to both. The mechanism of antibiotic resistance has not been investigated and it is not known whether it is due to intrinsic resistance or, as in most isolates of N gonorrhoeae, β-lactamase production is responsible.

REFERENCES

1 Berger V, Aboulkhair I, Rottman W: Septicaemia and
5 Thorsteinsson SB, Minuth JN, Musher DM: Postpneumonecomy empyema due to *Neisseria mucosa*. Am J Clin Pathol 64:534-536, 1975

ANNOUNCEMENTS

A MULTIDISCIPLINARY APPROACH TO THE MANAGEMENT OF POSTOPERATIVE PULMONARY COMPLICATIONS

Beth Israel Medical Center, New York City, will present the course on December 1 at the Medical Center. Co-directors are Drs. Stuart Alexander, James T. Demopoulos and Marius Focseneau. For information, contact the Postgraduate Education Office, Beth Israel Medical Center, Ten Nathan D. Perlman Place, New York City 10003.

RESPIRATORY CARE UPDATED

On December 1 and 2, The Cleveland Clinical Educational Foundation will sponsor the course, "Respiratory Care Updated," under the direction of Dr. Edward M. Cordasco. Inquiries to: Director of Continuing Medical Education, The Cleveland Clinic Educational Foundation, 9500 Euclid Avenue, Cleveland 44106.

CONTEMPORARY CLINICAL CARDIOLOGY

Presbyterian Medical Center and the Council on Clinical Cardiology of the American Heart Association, and the Division of Continuing Education, University of Texas Health Science Center, Dallas will present the course, "Contemporary Clinical Cardiology" at the American Heart Association National Center in Dallas, November 17-18. Inquiries: University of Texas Health Science Center, Division of Continuing Education, 5323 Harry Hines Boulevard, Dallas, 75225.

BEDSIDE APPROACH TO CARDIAC DIAGNOSIS

The course, "Bedside Approach to Cardiac Diagnosis" will be held December 7-8 at the Rose Medical Center, Denver. Sponsors are the Rose Medical Center and Council on Clinical Cardiology, American Heart Association, Colorado Heart Association, and University of Colorado Medical Center. Inquiries: Administrator, Postgraduate Programs, American Heart Association, 7320 Greenville Avenue, Dallas 75229.