Complication of Nitroprusside Therapy

To the Editor:

Nitroprusside has become a widely used agent in the treatment of various cardiovascular conditions. It has become the drug of choice for most hypertensive emergencies, as well as the primary parenteral agent for pre-load and after-load reduction therapy of the failing ventricle. There are several well documented complications of nitroprusside therapy. Miller et al. have previously reported an unusual complication related to a nitroprusside infusion which they termed acute phlebitis. The case that follows demonstrated similar physical findings and raises several questions as to the etiology and consequences of this phenomenon.

CASE REPORT

A 65-year-old woman was admitted to Greenwich Hospital with a history of idiopathic congestive cardiomyopathy. Despite diuretic and diuretic therapy, the patient continued to manifest signs and symptoms of progressive left ventricular dysfunction. A bedside right catheterization revealed a pulmonary capillary wedge pressure of 34 mm Hg. An infusion of nitroprusside, (50 mg in 250 ml of dextrose in water) through a newly inserted peripheral venous Teflon catheter was begun at a rate of 35 μg/min. Within 30 minutes of institution of the infusion, the skin along the tract of the vein became raised and erythematous (Fig 1). The patient denied any symptoms associated with this reaction and no other clinical or hemodynamic alterations were noted. The nitroprusside was promptly discontinued (without removing the catheter) and the erythema and swelling entirely disappeared within one-half hour. Reinstitution of the nitroprusside reproduced the same phenomenon.

DISCUSSION

This case demonstrates an apparently unusual phenomenon related to nitroprusside infusion. It had been previously described as acute phlebitis. Although the findings do follow the course of the vein, they appear to be more superficial and not inflammatory. In addition, the rapidity with which the condition reverses itself argues against

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392 COMMUNICATIONS TO THE EDITOR

CHEST, 81: 3, MARCH, 1982
phlebitis and more for a local vasodilatory phenomenon or allergy. The latter also seems unlikely in view of its rapid reversal and the lack of associated manifestations of allergy. Others have reported (personal communication, Dr. John Pepper, Roche Laboratories, Nutley, New Jersey) continuing a nitroprusside infusion despite the appearance of the phenomenon without deleterious effect. The explanation we favor is a local vasodilatory reaction due to the passage of nitroprusside through the veins into the subcutaneous arterioles. In support of this theory, Hunter\(^4\) reports a similar skin eruption appearing along the course of a vein in which trimethaphan was infused.

We feel that the phenomenon described warrants further investigation with specific attention to its incidence, pathophysiology and risks, if any, to continued infusion. Nitroprusside is often administered through a central venous catheter, and therefore, additional questions need to be answered. Does the central infusion eliminate the need for concern about the reaction, or does it merely mask one of the signs of a more complex systemic reaction?

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REFERENCES
3 Hunter AR. Phlebitis vs cutaneous vasodilation. Anesthesiology 1980; 52:198

Concurrent Antibody Rises to \(C\) psittaci and \(L\) pneumophila in a Patient with Psittacosis

To the Editor:

The manifestations of Legionnaires' disease and psittacosis are often very similar.\(^1\)\(^2\) Both infections are commonly included in the differential diagnosis of atypical pneumonia. Since most cases of these infections are diagnosed serologically, laboratory confirmation requires methods that give specific results. Differentiation is important because of the choice in antimicrobial therapy. A recent study has shown concurrent rises in IgG antibodies against \(Legionella pneumophila\) and \(Chlamydia psittaci\) in sera from patients with Legionnaires' disease.\(^3\) These cross reactions occurred in 33 percent of sera and only against the 6BC strain of \(C\) psittaci. In addition, four-fold rises in antibody titer against \(L\) pneumophila have been found in cases of plague, tularemia, and leptospirosis.\(^4\) We report a patient with presumed psittacosis who showed four-fold antibody responses to both \(C\) psittaci and \(L\) pneumophila.

CASE REPORT

A 58-year-old man was admitted on April 4, 1980, with nonproductive cough, severe dyspnea, confusion, and fever of 40\(^\circ\)C. The chest x-ray film showed bilateral infiltrates. The leukocyte count was 8500 cu mm. Blood cultures and a transtracheal aspirate were obtained (subsequently aerobic and anaerobic cultures were negative and a direct fluorescent antibody stain of the aspirate was negative for \(L\) pneumophila) and the patient was treated with ampicillin, gentamicin, and erythromycin. On April 6, 1980, the patient's wife developed fever and nonproductive cough and related that the family had purchased three finches and a cockatiel within the previous two weeks. The patient and his wife were subsequently treated with tetracycline, and their illnesses resolved. A Chlamydia culture of the patient's oropharyngeal secretions obtained on the second day of tetracycline therapy was negative. Subsequently, the blood of the pet birds was evaluated for presence of antibody to \(C\) psittaci; the cockatiel was found positive. Acute and convalescent antibody titers of the patient and his wife to \(L\) pneumophila (serotype 1, indirect fluorescent antibody using both heat and formalin-killed antigen) and \(C\) psittaci (both complement-fixing antibody to a Chlamydia group antigen and indirect fluorescent antibody to Strain 6BC) are shown in Table 1.

Although \(C\) psittaci was not isolated from either patient, the clinical features of the illness and history of recent exposure to a serologic positive cockatiel, as well as a four-fold rise in complement-fixing antibody titer suggested psittacosis as the illness. The lack of detection of IgM indirect fluorescent antibody responses to \(C\) psittaci may reflect infection with a strain other than the 6BC strain that was used as the antigen. Of interest, the serologic rise to \(L\) pneumophila was evident using the heat-killed antigen (the standard antigen used by the Center for Disease Control, Atlanta, Georgia) but was not evident using the formalin-killed antigen which suggests a need for further evaluation of the "standard antigen" for \(L\) pneumophila antibody testing as has been previously recommended.\(^5\)

The antibody response to \(L\) pneumophila is of particular interest in our patient's case since Legionnaires' disease was highly considered as the diagnosis before the history of exposure to pet birds was available. This case illustrates that presently utilized serologic methods for diagnosing Legionnaires' disease are not absolutely specific and that we may not be able to unequivoca-

| Table 1—Antibody Titers to \(L\) pneumophila and \(C\) psittaci |
|------------------|------------------|------------------|
|                  | Heat-killed     | Formalin-killed  | IFA* |
|                  |                  |                  |      |
|                  | \(L\) pneumophila (serotype 1) |                  |      |
| Patient          |                  |                  | CF†  |
| Acute            | 1/32             | 1/8              | 1/8  |
| Convalescent     | 1/256            | 1/8              | 1/128/32 |
| Wife             |                  |                  |      |
| Acute            | 1/32             | <1/8             | 1/8  |
| Convalescent     | 1/64             | <1/8             | 1/64/32 |

*Indirect fluorescent antibody titers performed in the laboratory of G.L. Lattimer, M.D., Fargo, North Dakota. All IFA response was of IgG class. No rises of IgM to any of the antigens was detected.
†Complement-fixing antibody titers (chlamydia group antigen) determined by the Ohio State Department of Health.

COMMUNICATIONS TO THE EDITOR 393

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