Henoch-Schönlein Purpura Associated with Pulmonary *Mycobacterium avium-intracellulare* Complex

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Abstract

A 57-year-old woman presented with bloody sputum and high grade fever. She had been treated for *Mycobacterium avium-intracellulare* complex (MAC). High grade fever slightly decreased and bloody sputum disappeared after two weeks, but low grade fever persisted. After 3 days of recurrence of bloody sputum, she suddenly complained of palpable pururitic lesions on the bilateral lower extremities with bilateral gonalgia. Although there are some reports of direct skin lesions due to MAC, there are no reports of hypersensitivity vasculitis, Henoch-Schönlein purpura, in MAC. It is necessary to consider MAC infection as a potential cause of Henoch-Schönlein purpura. (Internal Medicine 43: 843-845, 2004)

Key words: Skin lesion, Nontuberculous mycobacterium

Introduction

Although Henoch-Schönlein purpura due to *Mycobacterium tuberculosis* has been reported previously, it is uncommon. And there were some reports of direct skin lesions due to *Mycobacterium avium-intracellulare* complex (MAC). However, to date there are no reports of Henoch-Schönlein purpura in MAC. This is the first report of Henoch-Schönlein purpura associated with MAC infection. We should consider MAC infection as a potential cause of Henoch-Schönlein purpura.

Case Report

A 57-year-old woman, a housekeeper, had been treated for MAC with various antituberculous drugs for 11 years. Oxygen therapy was initiated in December 1998 and

clarithromycin was added in November 2001. Chest radiograph showed bilateral destroyed lung with multiple cystic lesions (Fig. 1). The patient demonstrated right pneumothorax and received bullectomy in 1998.

She presented with bloody sputum and high grade fever on 11 March 2002. The temperature was 38.1°C. Analysis of arterial blood gases with nasal prongs at 3l/min showed that the partial pressure oxygen was 89.9 mmHg, the partial pressure of carbon dioxide was 49.6 mmHg, and the pH was 7.39. The white blood cell count was 11,400/mm³, 80% neutrophils, 13% lymphocytes, 7% monocytes. The serum albumin level was 4.0 g/dl and the CRP level was 5.0 mg/dl. Platelets were 357,000/mm³. Sputum culture yielded *Mycobacterium (M.) avium* and *M. intracellulare*. Since high grade fever continued, panipenem and fosfomycin were used for two weeks. The high grade fever was slightly lowered and bloody sputum disappeared, but a low grade fever persisted. After 3 days of recurrence of bloody sputum, the patient suddenly complained of palpable pururitic lesions on the bilateral lower extremities with bilateral gonalgia on 16 April (Fig. 2). Mainly dot hemorrhage with erythema spread to the bilateral dorsum pedis, lower leg and thigh, and the erythema did not fade by pressing with glass. It was partially accompanied by pigmentation. Platelet count was 329,000/mm³. Prothrombin time and partial thromboplastin time were normal. Serum antistreptolysin-O (ASO) was normal. Urine showed microhematuria. Styptic drugs and vitamin C were administered and the skin lesions were slightly improved. However, purpura recurred and worsened with microhematuria after 9 days. Therefore, 10 mg prednisolone was added. The purpura improved and prednisolone was decreased to 5 mg after 5 days. Prednisolone persisted, and there was no recurrence of purpura or bloody sputum.

Discussion

Henoch-Schönlein purpura is a leukocytoclastic vasculitis that usually affects children. Palpable pururitic lesions, ab-

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Figure 1. Chest radiograph on admission showing diffuse multiple cystic lesions.

dominal pain, and arthritis of the knees and ankles are common findings, but other organs may be involved as well. Several precipitating factors have been implicated, including infections, environmental chemicals, toxins, insect bites, physical trauma, complement C₂ deficiency, and malignancies (1).

Infections are proposed to be a causative factor and leukocytoclastic vasculitis due to *M. tuberculosis* has been reported previously (2–5), but is uncommon (6). There are two types of skin lesions associated with tuberculosis (7):

Direct lesions where the bacillus is present, produced by three different mechanisms (inoculation from an exogenous source; cutaneous mycobacteriosis from an endogenous source, either by contiguous spread or by auto-inoculation and third, those arising from hematogenous spread, such as lupus vulgaris, acute hematogenous dissemination and nodules or abscess.

Hypersensitivity vasculitis, where the microorganism has never been found and the proposed pathogenic mechanism is the deposit (in the walls of small vessels) of immune complexes formed by antibodies to *M. tuberculosis* proteins (8). Henoch-Schönlein purpura is thought to be an immune complex disease, with 50% of patients producing IgA rheumatoid factor (9).

There have been some reports of direct skin lesions due to MAC (10–12). However, there are no reports of hypersensitivity vasculitis, Henoch-Schönlein purpura, in MAC. In the

Figure 2. Macroscopic view of the cutaneous vasculitis lesions on the legs.

present case, the involvement of drugs was thought to be negative as a cause of the skin lesions, because there has not been any change in the drugs over 1 year. Since her condition has been continuously poor due to MAC infection, some immune response to the MAC infection might have contributed to the skin lesions. The fact that the steroid was effective also proves this possibility. As there were some reports of pulmonary hemorrhage in Henoch-Schönlein purpura, there might be some relation to the bloody sputum in this case. Henoch-Schönlein purpura may promote serious renal disturbance, and it is important to have an early diagnosis and treatment. It is also necessary to consider MAC infection as a potential cause of Henoch-Schönlein purpura.

References

- 1) Hoffman R, Benz EJ, Shattil SJ, Furie B, Cohen HJ, Shiberstein LE (eds). Hematology, 2nd ed. New York, Churchill Livingstone, 1995: 1619.
- 2) Pacheco A, Mateos P, Medina J, Guisasola L, Carrillo F, Perez-Oteiza J. Pulmonary tuberculosis de Schönlein-Henoch purpura. Rev Clin Esp **180**: 515, 1987 (in Spanish).
- 3) Visser AJ, Heyl T. Skin tuberculosis as seen at Ga-Rankuwa Hospital. Clin Exp Dermatol **18**: 507–515, 1993.
- 4) Sais G, Vidaller A, Jucgla A, Peyri J. Tuberculous lymphadenitis presenting with cutaneous leukocytoclastic vasculitis. Clin Exp Dermatol **21**: 65–66, 1996.
- 5) Chan CHS, Chong YW, Sun AJ, Hoheisel GB. Cutaneous vasculitis associated with tuberculosis and its treatment. Tubercle **71**: 297–300, 1990.
- 6) Lee A, Jang J, Lee K. Two cases of leukocytoclastic vasculitis with tuberculosis. Clin Exp Dermatol **23**: 225–226, 1998.

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- 7) Byet BE Jr, Orbals DW, Santa Cruz DJ, Kobayashi GS, Eisen AZ, Medoff G. Cutaneous mycobacteriosis: analysis of 34 cases with a new classification of the disease. *Medicine (Baltimore)* **60**: 95–109, 1980.
 - 8) Minguez P, Pintor P, Buron R, Diaz-Pollan B, Puche JJ, Pontes JC. Pulmonary tuberculosis presenting with cutaneous leukocytoclastic vasculitis. *Infection* **28**: 55–57, 2000.
 - 9) Mackel SE, Jordon RE. Leukocytoclastic vasculitis. A cutaneous expression of immune complex disease. *Arch Dermatol* **118**: 296–301, 1982.
 - 10) Kullavanijaya P, Sirimachan S, Surarak S. Primary cutaneous infection with *Mycobacterium avium intracellulare* complex resembling lupus vulgaris. *Br J Dermatol* **136**: 264–266, 1997.
 - 11) Clark JA, Margolis DM. A cutaneous lesion in a patient with AIDS: an unusual presentation of infection due to *Mycobacterium avium* complex. *Clin Inf Dis* **16**: 555–557, 1993.
 - 12) Sagerman PM, Relman DA, Niroomand F, Niedt GW. Localization of *Mycobacterium avium-intracellulare* within a skin lesion bacillary angiomatosis in a patient with AIDS. *Diagn Mol Pathol* **1**: 212–216, 1992.
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