Ventilation-Perfusion Inequalities in a Patient With Obliterative Bronchiolitis After Single-Lung Transplantation for Primary Pulmonary Hypertension

To the Editor:

The assessment of graft rejection after single-lung transplantation (SLT) is often difficult. Therefore, it was with great interest that we read the article by Levine et al., which appeared in the February 1992 issue of Chest. The authors described their experience with ventilation-perfusion (V/Q) inequalities during graft rejection after SLT for primary pulmonary hypertension (PPH). We recently had a similar experience.

A 49-year-old white woman with a history of PPH underwent right SLT in June 1991. Immunosuppression therapy consisted of cyclosporine, azathioprine, and corticosteroids. During the first 2 months after transplantation she was given four courses of methylprednisolone for rejection suspected on clinical grounds. Patient and donor were both seropositive for cytomegalovirus (CMV). Four weeks after transplantation, CMV reactivation was observed; the virus was isolated from bronchoalveolar lavage fluid and pleural fluid. Transbronchial biopsies showed some infiltration of plasma cells in the submucosa of the walls of the bronchioles, but there were no signs of acute vascular rejection, bacterial infection, or CMV infection. The patient was treated by lowering the dosage of azathioprine, and subsequently anti-CMV immunoglobulin G was seen to be increased. She made a full clinical recovery from this episode.

Approximately 5 months after SLT, the patient began complaining of slowly progressive dyspnea on exertion and a low-grade fever. Spirometric values were unchanged, and the cardiologic status was normal. Although there was no clear diagnosis, the patient was treated with pulse corticosteroids for suspected rejection, but without effect. There was progression of her dyspnea, and the spirometric values deteriorated, suggesting increasing airflow limitation (Fig 1). A histologic diagnosis could not be established. Again she was treated with pulse corticosteroids, together with anti-CMV hyperimmune globulin, but without improvement. Nine months after SLT, a V/Q scan showed a decline in ventilation of the transplanted lung, while the perfusion did not change as a percentage of total (Fig 1). Open-lung biopsy revealed obliterative bronchiolitis without evidence of acute rejection. Treatment with rabbit antithymocyte globulin had no clinical effect. Repeat V/Q scans showed a further decline in ventilation of the transplanted lung leading to further V/Q mismatch.

As in the patients presented by Levine et al, this case of small airway disease due to obliterative bronchiolitis after SLT for PPH showed progressive V/Q mismatching on repeated V/Q scans. However, concurrent spirometry showed a progressive decline in vital capacity with concomitant progressive bronchoconstriction. Although experience with obliterative bronchiolitis in this setting is still limited, we feel that repeated spirometry is a good method for routinely following the function of the transplanted lung in these patients and that repeated V/Q scanning does not provide extra information in such situations.

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REFERENCE


Elevation of Cardiac Output and Oxygen Delivery Improves Outcome In Septic Shock

To the Editor:

It was with great interest that I read the article by Tuchschmidt et al., which appeared in the July 1992 issue of Chest. There were however, a couple of errors in the abstract that confuse their message. In both cases, a careful reading of the text reveals what I hope is the truth. In lines 21 and 22, it should read that 72 percent of the normal treatment (NT) patients died versus 50 percent of the optimal treatment (OT) patients. These numbers were switched, which makes their optimal treatment sound like a killer. In line 29, the oxygen delivery (Do2) of the NT <4.5 group is shown as 10.9 ml/min/kg, which is even higher than the original group's Do2. The authors' point was that they were excluding some spontaneously hyperdynamic patients; the correct Do2 should be 7.2 ± 0.7 ml/min/kg. Since abstracts are so widely read, I thought this clarification important.

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REFERENCE


To the Editor:

We would like to comment on the use of the statistical information in the article by Tuchschmidt et al., which appeared in the July 1992 issue of Chest.

Under "Methods," the authors state that "statistical significance is reported at a p<0.05," the usual level for statistical significance. Under "Results," they state that "in the NT patients, mortality rate was 72 percent and 50 percent in the OT patients (p=0.14)"—that