Acute allograft rejection is a major cause of early mortality after heart transplantation. Cellular rejection, mediated by a T-lymphocyte response to the allograft tissue, is the most common form of rejection in heart transplant recipients.1 Antibody-mediated (humoral) rejection occurs because of antibody fixation and activation of the complement cascade resulting in tissue injury.2 Mixed cellular and humoral rejection is uncommon and has been associated more often with International Society for Heart and Lung Transplantation grade 3R rejection. Although acute rejection is a common complication post heart transplantation, ST-segment elevation has not been associated with rejection. Review of the literature reveals only 1 case report of a patient 2 weeks post heart transplantation that developed ST-segment elevation on the ECG.3 Autopsy revealed acute cellular rejection.

ECG findings commonly seen with rejection are low QRS voltage and atrial flutter or atrial fibrillation.4 Although low
QRS voltage during severe rejection has been explained by edema between the myocytes, the mechanism of ST-segment elevation has not been elucidated. We surmise that intense inflammation caused by the combined cellular and antibody-mediated rejection led to an injury current and ST-segment elevation manifest on the ECG. Heart transplant patients can develop ST-segment elevation; however, this often occurs in the setting of a myocardial infarction because of coronary allograft vasculopathy, also called transplant coronary artery disease. Coronary allograft vasculopathy is an immune-mediated process involving smooth muscle hyperplasia characterized by diffuse, concentric proliferation rather than the focal, eccentric lesions of coronary atherosclerosis.

Conclusions

In conclusion, this is the first case to our knowledge of mixed cellular and antibody-mediated rejection presenting with ST-segment elevation. It exemplifies the difficulty of rapid and accurate diagnosis of the cause of acute ST-segment elevation. Our case highlights the need for awareness of this rare ECG manifestation in transplant recipients and the importance of recognizing imitators of acute myocardial infarction presenting with ST-segment elevation.

Disclosures

None.

References


Key Words: allograft ■ antibodies ■ cardiac catheterization ■ electrocardiography ■ heart transplantation
Figure 4. Same endomyocardial biopsy with C4d staining, showing capillary deposition of complement degradation product C4d, an immune-pathological finding in antibody-mediated rejection.

Figure 5. Repeat endomyocardial biopsy on hospital day 12 showing minimal inflammation.
Acute Orthotopic Heart Transplantation Rejection With ST-Segment Elevation in Leads I and aVL

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