A 67-year-old woman was admitted to a hospital because of the recent onset of general malaise. She had a classic lilac-colored rash over her eyelids, the bridge of her nose, her cheeks, elbows, and knees and weakness in the proximal limb muscles. A diagnosis of dermatomyositis was confirmed by skeletal muscle biopsy. She was started on a course of oral glucocorticoids. Three months later, she complained of dyspnea. An echocardiogram revealed a massive pericardial effusion with evidence of both right atrial and ventricular collapse consistent with cardiac tamponade. Pericardiocentesis yielded 1000 mL of exudative bloody fluid with a lactate dehydrogenase value of 23 950 IU/L. Cytology revealed cells believed to represent lymphoma.

The patient was referred to Fukui Medical School for further investigation in August 1995. Transesophageal echocardiography showed a dense thick mass in the right atrioventricular groove extending into the right ventricular free wall (Fig 1A). The right ventricular wall and the left ventricular inferior wall were thickened and exhibited high echogenicities (Fig 1B). A small pericardial effusion was also noted. MRI demonstrated a thick mass in the right atrioventricular groove and the thickened right ventricular and left ventricular inferior walls, suggesting significant massive cardiac involvement (Fig 2A through 2C). The brightness of these lesions and pericardium was increased in T2-weighted images, and Gd-DTPA enhanced the lesions heterogeneously (Fig 2D). Contrast right atrial angiography demonstrated a zonal filling defect at the right atrioventricular groove, indicating cardiac involvement in that region (Fig 3). Full-body CT and MRI showed no abnormal lymph node swelling. $^{67}$Ga scintigraphy revealed significant abnormal uptake in the heart (Fig 4A). Pericardiocentesis was performed a second time to establish a definite diagnosis. Cytological study showed cells consistent with large-cell lymphoma (Fig 4B). Surface markers were positive for cluster of differentiation (CD) 19, CD22, CD45, and HLA-DR (human leukocyte antigen-D–related) sIgM and s$\lambda$, indicating that the cells were of B-cell origin. Thus, the patient was diagnosed with primary cardiac B-cell lymphoma with massive cardiac involvement. She is currently undergoing medical treatment with chemotherapeutic agents.

Figure 1. Transesophageal echocardiographic images. A, Dense, thick mass is visible in right atrioventricular groove with extension into right ventricular free wall. B, Right ventricular wall is thickened and exhibits high echogenicity. A small pericardial effusion is present. RA indicates right atrium; RV, right ventricle; LA, left atrium; LV, left ventricle; and Ao, ascending aorta.
Figure 2. ECG-gated, T1-weighted MRIs. A, Transverse image through middle of right atrium showing thick mass in right atrioventricular groove. B, Sagittal image showing thickened right ventricular wall. C and D, Sagittal images differing from B. Brightness of these lesions and pericardium are increased on T2-weighted images, and Gd-DTPA enhances them heterogeneously (D). PA indicates pulmonary artery. Other abbreviations as in Fig 1.

Figure 3. Right atrial angiogram in right anterior oblique projection. Massive involvement in right atrioventricular groove appears as zonal filling defect. Abbreviations as in previous Figures.

Figure 4. A, 67Ga scintigraphic image. Intense 67Ga uptake is visible in heart. B, Pericardial fluid obtained from patient’s second pericardiocentesis, showing malignant cells with features of large-cell type of malignant lymphoma (magnification ×1000).
Primary Cardiac B-Cell Lymphoma
Hiroshi Tada, Ken-ya Asazuma, Eichi Ohya, Takio Hayashi, Tsuguhiko Nakai, Takashi Nakayama and Takanori Ueda

Circulation. 1998;97:220-221
doi: 10.1161/01.CIR.97.2.220

Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 1998 American Heart Association, Inc. All rights reserved.
Print ISSN: 0009-7322. Online ISSN: 1524-4539

The online version of this article, along with updated information and services, is located on the
World Wide Web at:
http://circ.ahajournals.org/content/97/2/220

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Circulation can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to Circulation is online at:
http://circ.ahajournals.org/subscriptions/