Journal of Cardiology Cases 13 (2016) 189–192

Contents lists available at ScienceDirect

Journal of Cardiology Cases

journal homepage: www.elsevier.com/locate/jccase

Case Report

Multidisciplinary approach for primary cardiac lymphoma associated with hemodynamic failure caused by tricuspid valve obstruction

Masaki Yamamoto (MD, PhD)[a,*], Hideaki Nishimori (MD, PhD)[a], Nobuo Kondo (MD)[a], Yasunobu Terauchi (MD, PhD)[b], Miwa Tashiro (MD)[a], Takashi Fukutomi (MD)[a], Toshikazu Yabe (MD, PhD)[b], Kazumasa Orihashi (MD, PhD)[a]

[a] Kochi Medical School, Department of Surgery 2, Cardiovascular Surgery, Kochi, Japan
[b] Kochi Prefectural Hata Kenmin Hospital, Department of Cardiology, Kochi, Japan

ARTICLE INFO

Article history:
Received 14 December 2015
Received in revised form 3 February 2016
Accepted 11 February 2016

Keywords:
Cardiac tumors
Malignant lymphoma
Primary cardiac lymphoma
Tricuspid valve
Chemotherapy

ABSTRACT

Primary cardiac lymphoma (PCL) comprises rare cardiac tumors and exhibits rapid growth and poor prognosis. We report the case of a 65-year-old man with PCL associated with unstable hemodynamics caused by tricuspid valve obstruction. Generally, chemotherapy is the first choice of treatment for patients with PCL. This patient required emergency tumor reduction as he was at risk of having acute hemodynamic failure caused by tricuspid valve obstruction. Therefore, he underwent a 2-staged treatment: urgent surgery to avoid sudden death by tricuspid valve obstruction as well as pulmonary embolism during chemotherapy, followed by early chemotherapy. Pathological findings showed diffuse large B-cell lymphoma, and rituximab, cyclophosphamide, doxorubicin hydrochloride, vincristine, prednisolone (R-CHOP) therapy was initiated to treat any residual tumor infiltrating the myocardial wall. The patient showed a marked clinical improvement. We conclude that surgical tumor reduction and early chemotherapy might be an effective treatment for PCL patients with hemodynamic compromise. <**Learning objective:** We experienced a case of cardiac lymphoma associated with acute hemodynamic failure caused by tricuspid valve obstruction. The impacted tumor was urgently resected to avoid cardiogenic shock and sudden death, although chemotherapy, not surgery, is generally the first choice of treatment for cardiac lymphoma. The residual tumor showed a good response to the early postoperative chemotherapy. This case report suggests the utility of 2-stage treatment for cardiac lymphoma with hemodynamic failure.>

Introduction

Primary cardiac lymphoma (PCL) comprises only 1.0–1.6% of primary cardiac tumors but it presents with rapid growth and poor prognosis [1,2]. Here, we report a case of PCL that necessitated surgical intervention when it resulted in a mechanical obstruction of the tricuspid valve causing progressive acute right-sided heart failure. The patient underwent a 2-stage treatment: tumor resection to improve hemodynamics and early chemotherapy. The treatment strategy is discussed herein.

Case report

A 65-year-old male patient was referred to our hospital because of rapidly progressive dyspnea. He was hypotensive (76/58 mmHg) and tachycardic (107 beats/min). Although the heart sound was normal, a dilated jugular vein and hepatomegaly were noted. Transthoracic echocardiography revealed pericardial effusion and collapsed right ventricle (Fig. 1A). Computed tomography revealed a large mass in the right atrium (RA) and right ventricle (RV) (Fig. 1B). The patient was at risk of experiencing severe hemodynamic failure due to tricuspid valve obstruction although his hemodynamics improved slightly after emergency pericardiocentesis. Although the right coronary artery was involved, coronary angiography showed that it was patent without significant stenosis. Fluorodeoxyglucose-position emission tomography showed marked uptake with a maximum standardized uptake value of 19.3 in the RA, RV, and lymph node (Fig. 1C). Cytological examination of the pericardial effusion showed small cells with a high nuclear-to-cytoplasmic ratio, indicating the

* Corresponding author at: Kochi Medical School, Department of Surgery 2, Cardiovascular Surgery, Kohasu, Oko-cho, Nankoku-shi, Kochi 783-8505, Japan. Tel.: +81 88 880 2375; fax: +81 88 880 2376.
E-mail address: y-masaki@kochi-u.ac.jp (M. Yamamoto).

http://dx.doi.org/10.1016/j.jccase.2016.02.005
1878-5409/

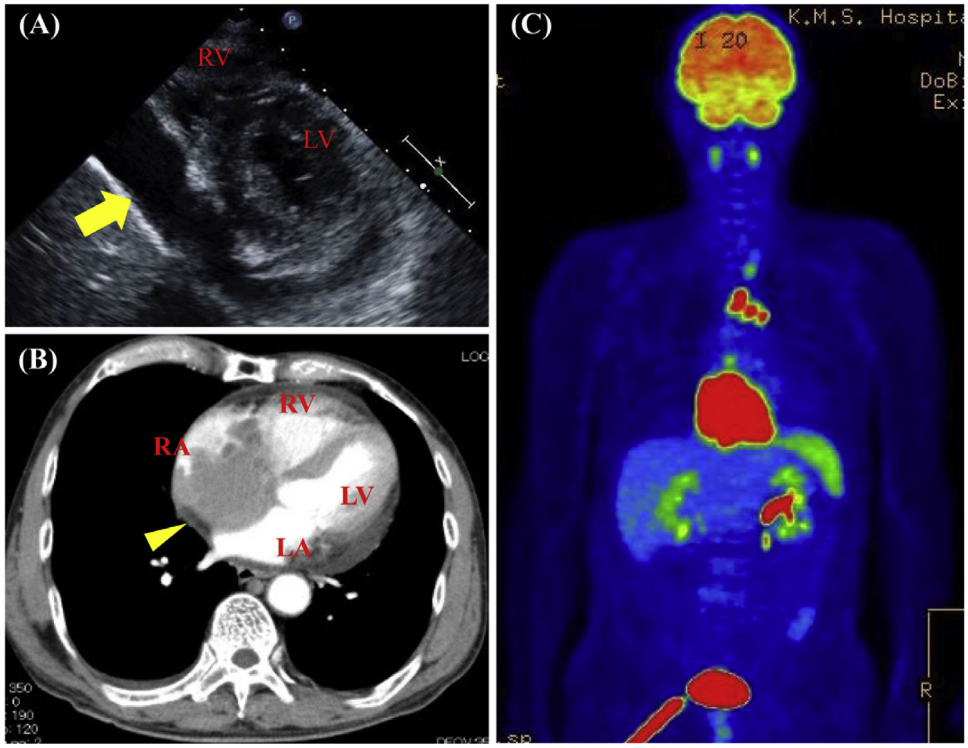

Fig. 1. Preoperative images. (A) Preoperative transthoracic echocardiogram, pericardial effusion (arrow) and collapsed right ventricle are shown. (B) Preoperative computed tomograms showing a large heterogeneous mass (arrow head) involving the right atrium (RA). (C) High uptake of fluorodeoxyglucose (FDG) in the RA, RV, and mediastinal lymph node on FDG-position emission tomography. LA, left atrium; LV, left ventricle; RV, right ventricle.

presence of atypical lymphoid cells, suggesting PCL, although other cardiac tumors such as sarcoma could not be excluded.

Thus, an urgent surgery was planned: (1) to prevent right-sided heart failure induced by the tumor that occupied the RA and tricuspid valve, and (2) to prevent tricuspid valve obstruction or pulmonary embolism during chemotherapy.

He underwent the surgery on 5 days after admission. Intraoperative transesophageal echocardiography showed that

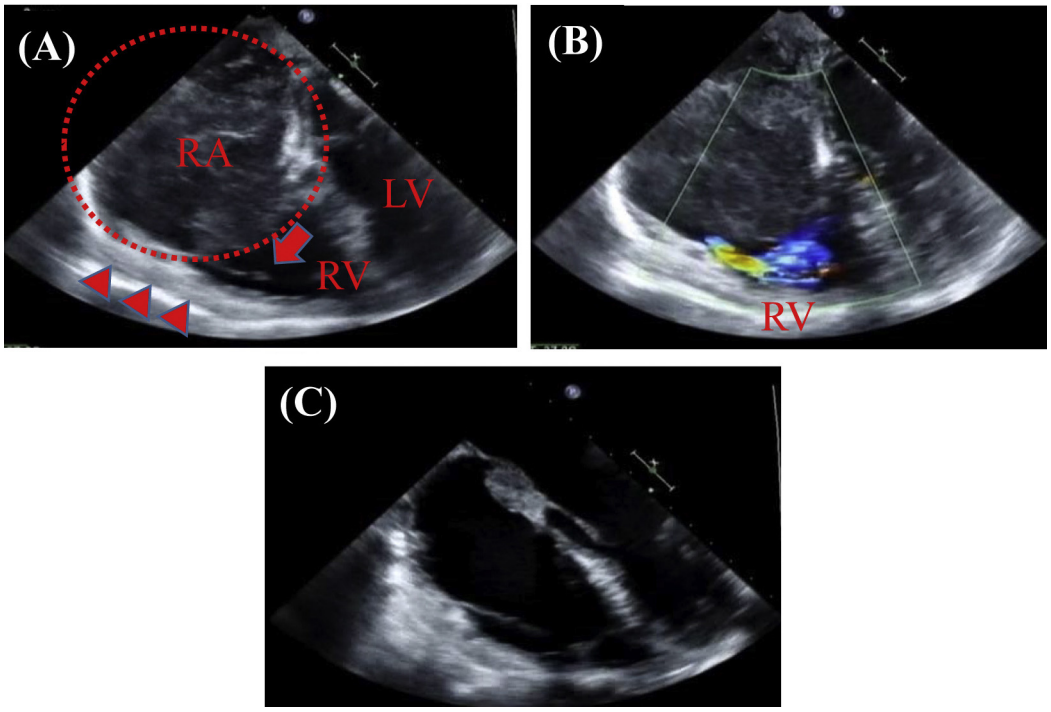

Fig. 2. Intraoperative transesophageal echocardiograms. (A) Preoperatively, the tumor occupied the right atrium (RA: circle) and the displaced tricuspid valve (arrow). The right ventricle (RV) wall was thick (arrow head). (B) Marked tricuspid stenosis was noted. (C) Postoperatively, tricuspid valve function was restored but with thickened RV wall. LV, left ventricle.