

Surgical Treatment of a Giant Symptomatic Cardiac Lipoma

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CASE PRESENTATION

A 48-year-old woman who suffered from recurrent dyspnea with mild anemia for 2 years was admitted to our hospital, as she had presented with a huge mass in her mediastinum. An enhanced computed tomography (CT) with three-dimensional reconstruction revealed a giant tumor mass in the right ventricular wall (Figs. 1 and 2) and the heart was jostled to right. The diameter of the mass was about 15 cm and the CT value of the mass arranged from -85 to -114 , which was similar to that of fat. Right ventricular aneurysm and mild tricuspid valve regurgitation were found. Thus, an operation involving tumor resection and right ventricular outflow tract reconstruction was electively planned. The operation was performed on extracorporeal circulation by cannulation of the ascending aorta and both vena cava. After incision of the pericardium, the lobulated yellowish mass became apparent broadly attached on the anterior right ventricular wall and anterolateral left ventricular wall. The tumor stemmed from left auricle, anterior intraventricular groove, and heart apex, whereas the margin between ventricle and tumor on intraventricular groove was not clear. The tumor was integrated with right ventricular muscle. The right ventricular aneurysm which was 6-cm in full thickness was fat with no myocardium. Antegrade cardioplegia was used to arrest the heart. The body temperature was lowered to 30°C . Intraoperative histologic diagnosis showed no apparent sign of the malignancy. Most of the tumor was excised. It was impossible to remove the entire tumor because of its integration with and partly immersion in the left and right ventricular walls. After transverse opening of the pulmonary artery, a finger was inserted into right ventricle and the aneurysm was excised by finger guidance. The defect in the right ventricular outflow tract was reconstructed with a patch of autologous glutaraldehyde-fixed pericardium. Histology confirmed the diagnosis of a benign, cardiac lipoma (Fig. 3). The patient had an uneventful postoperative course and was discharged 12 days after the operation. She was asymptomatic at follow-up after 20 months. Echocardiography demonstrated no significant gradient across the right ventricular outflow tract, and no recurrence of the tumor.



FIGURE 1. A 16-slice computed tomographic angiography plain scan.

COMMENTS

Cardiac tumors have an incidence between 0.17% and 0.19%. The majority of tumors are benign¹ and only a few cause symptoms. Right ventricular aneurysm induced by true lipoma infiltrating right ventricle is extremely rare in heart diseases and only a few present with a wide spectrum of clinical signs, including life-threatening arrhythmias and sudden death. Cardiac lipoma is a well-encapsulated tumor typically composed of mature fat cells and can occur in almost any location of the heart. Enhanced CT and echocardiogram can highlight the disease, and cardiac magnetic resonance imaging approach is also excellent,² especially high-resolution CT has been widely applied and provided accurate clinical diagnosis.³⁻⁵ Although cardiac lipoma is histologically benign, clinical manifestations are sometimes malignant as a result of valvular obstruction, intracavitary obstruction, cardiac

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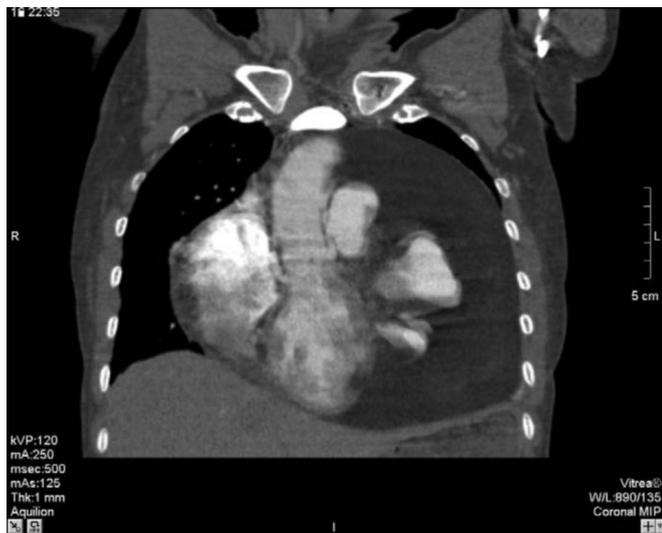


FIGURE 2. Frontal plane of 16-slice computed tomographic angiography scan.

oppression, peripheral embolization, and serious arrhythmia.⁶ In these cases, surgical resection should be performed for symptomatic lipomas. The present case of cardiac lipoma with right ventricular aneurysm represents an uncommon cardiac tumor. For right ventricular outflow tract closure, a patch of autologous pericardium should be used, and for large defects cardiomyoplasty can be performed.⁷ Partial tumor resection is successful in relief of symptoms caused by tumor compression. However, the risk for sudden death caused by ventricular arrhythmia probably remains. This case underlines the diversity of clinical features of cardiac tumors, which implies that this kind of disease should be considered early in the differential diagnosis. And long-term follow-up should be regarded.

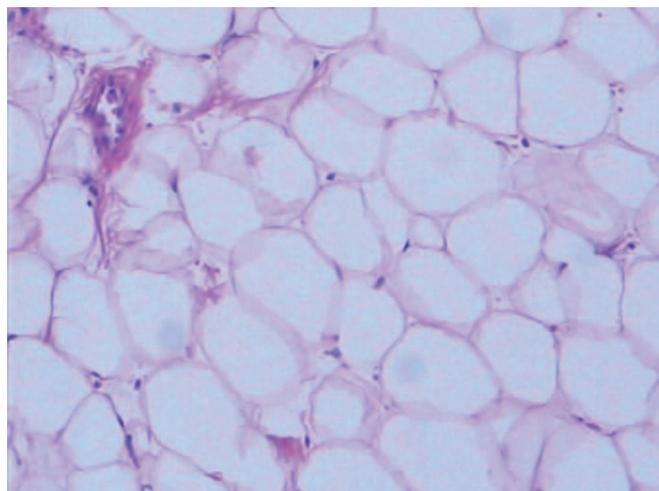


FIGURE 3. Image of histologic diagnosis using hematoxylin and eosin staining (original $\times 400$).

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