Primary Cardiac Chondrosarcoma

— A Case Report —

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We report a case of chondrosarcoma of the heart that was managed surgically. As chondrosarcoma of cardiac origin is extremely rare, this case is described with a brief comment.

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A 49-year-old woman was admitted to our hospital with a 2-year history of night sweats and a 2-month history of exertional dyspnea. She also had a history of hypertension and untreated hystereomyoma.

Examination of the heart revealed a regular rhythm, cardiomegaly, and a loud first and a normal second heart sound. A low-pitched, blowing mid-systolic murmur was audible in the apical region. Other physical examination findings were normal. An echocardiogram revealed a poorly demarcated mass in the left atrium, incarcerating the mitral valve (Fig 1), and angiograms demonstrated a movement of the mass with the mitral valve during each cardiac cycle (Fig 2). Magnetic resonance imaging (MRI) revealed that the mass was attached to the posterior leaflet of the mitral valve (Fig 3). Pulmonary systolic pressure and pulmonary capillary wedge pressure were high at 91 mmHg and 28 mmHg, respectively. At operation, the left atrium was opened, and the tumor was found to extend from the left atrium to the left ventricle, involving the mitral valve (Fig 4). In fact, the posterior leaflet of the mitral valve was almost replaced by the tumor (Fig 5). We extracted the tumor and the mitral valve, and removed the endocardium of the left ventricle around the mitral valve as far as possible. The mitral valve was replaced with a St Jude medical (SJM) 25-mm prosthesis. The total cardiopulmonary bypass (CPB) time was 134 min, and the aortic clamp time was 82 min. The postoperative course was uneventful.

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Fig 2. Angiograms before operation. The mass moved with the mitral valve during each cardiac cycle.

Fig 3. MRI before operation. The mass is attached to the posterior leaflet of the mitral valve.

On the 10th postoperative day, the patient developed gastrointestinal (GI) bleeding, and this persisted intermittently. We did not find the origin of the bleeding by gastric and colon fiberoscopy, and medication was not effective. Therefore, surgical exploration was performed on the 50th postoperative day, and this revealed tandem metastatic tumors in the small intestine. Two tumors were resected. It seems that the GI bleeding was due to the metastatic tumor. The patient was discharged after 2 weeks, but 80 days after the first operation she suffered from cerebral hemorrhage and died 4 days later. Autopsy demonstrated that the tumor had recurred and filled the left ventricle (Fig 6). Metastases were present in the liver and kidney, but not in the brain. The cerebral bleeding appeared to have been secondary, due to the hemorrhagic tendency produced by acute liver dysfunction or anticoagulation with warfarin. Upon pathologic examination, the tumor resected from the heart was shown to be a spindle cell sarcoma mixed with chondrified cells and undifferentiated tumor cells (Fig 7). The specimen from the small intestine contained undifferentiated tumor cells.

Discussion

Primary cardiac malignant tumors are rare. In 1992, the Mayo Clinic reported that 106 patients with 110 neoplasms originating in the heart were treated surgically and that 8 of the neoplasms were malignant! Nine malignant neoplasms with chondrified cells have been reported previously. Leung et al\(^2\) stated that chondrosarcoma in the right heart or lung was usually metastatic from another site. In our case, there was no tumor in the right heart and lung, and MRI and CT revealed no focus elsewhere. Thus, the sarcoma appeared to have originated in the heart. Murakami et al\(^3\) reported a case of primary cardiac tumor containing a chondrosarcomatous component. Their patient was successfully managed with mitral valve replacement and postoperative radiation therapy. Although our patient died of tumor recurrence, the clinical features were similar to their case. There is no effective treatment for chondrosarcoma. The tumor is generally resistant to radiation therapy and, therefore, complete excision is the preferred treatment. In most cases, however, the tumor is diffusely spread in the heart, so that complete excision cannot be performed. Early diagnosis by MRI and other imaging modalities,
Fig 4. The mitral valve and the left atrium. The tumor extends from the left atrium to the left ventricle, involving the mitral valve.

Fig 5. The extirpated mitral valve.

Fig 6. Recurrence of the tumor.

Fig 7. The tumor at first operation.

followed by surgery is necessary.

References


