A Surgically-treated Case of Left Atrial Myxoma Complicating Coronary Artery Fistula

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SUMMARY

A surgically-treated case of left atrial myxoma complicating congenital coronary artery fistula is reported. A review of the literature indicates that this complication has not been reported previously. (Jpn Heart J 36: 825–828, 1995)

Key words: Cardiac myxoma, Congenital coronary artery fistula, Angiographically visible neovascularity, Lake-like pooling

CORONARY artery fistula (CAF) has been considered to be a rare anomaly; its incidence was 0.17% in 126,595 patients undergoing coronary arteriography (CAG) during the period of 1960 to 1988.1) Recent advances in CAG and the more widespread adoption of this technique are reportedly related to the increased frequency of detection of CAF. The incidence of primary tumors of the heart in autopsy cases ranges from 0.0017 to 0.28%, and myxomas are the most common type of primary cardiac tumor, comprising 30 to 50% of the total in most studies.2) Recent progress in echocardiography is also linked to the easier diagnosis of myxoma. The prevalence of angiographically visible neovascularity in patients with myxoma is reported to be 40%.3) Our review of the literature, however, failed to uncover a single case of CAF complicated by cardiac myxoma.

CASE REPORT

A 51 year-old female was admitted to our hospital for the further evaluation of palpitations, dyspnea, and chest discomfort. She had noted these symptoms for the previous 6 years, but she had not received any medication. Because both the duration and frequency of the episodes had increased, she consulted our hospital in May 1988.
On physical examination, she was 160 centimeters in height and 50 kilograms in weight. The apex beat was visible 2 finger-breadths lateral to the left mid-sternal line in the 5th intercostal space. A systolic ejection murmur was maximally audible at Erb’s area, and a diastolic rumbling murmur was audible at the apex. However, no evident tumor “plop” sound was audible. The erythrocyte sedimentation rate was 25 mm/hr and 45 mm/2 hrs. Fibrinogen was 334 mg/dl. The values of these two parameters were slightly elevated. Chest roentgenogram disclosed a double contour of the right cardiac silhouette and an enlarged left cardiac silhouette. Electrocardiogram disclosed normal sinus rhythm and normal PQ interval. Echocardiogram disclosed a cardiac tumor measuring 57 × 40 mm in the left atrium which originated from the interatrial septum. The internal echo of the tumor was not homogeneous (Figure 1). Doppler examination revealed shunt flow from the left ventricle to the left atrium.

Cardiac catheterization did not disclose abnormal oxygen saturation or pressure data. CAG revealed tumor neovascularity and clusters of new vessels which originated from both the left atrial branch of the left circumflex artery and the atrial branch of the right coronary artery. Fistulous vessels originating from both the left diagonal artery and the right descending coronary artery, and draining into the left ventricle were incidentally detected (Figure 2).

Surgical treatment was performed only for the cardiac myxoma because it was difficult to ligate the diagonal coronary artery and the shunt flow was estimated to be small based on the CAG findings.
Figure 2. Coronary arteriogram (CAG). Left coronary arteriogram in right anterior oblique view (A) demonstrates the feeding artery of the myxoma which originates from the atrial branch of the circumflex artery. Both the tortuous neovascularity (small arrow) and lake-like pooling of contrast material (large arrow) show draining into the left atrium. Left coronary arteriogram in the lateral view (B) demonstrates a fistulous communication between the diagonal branch and the left ventricle, which is shown as the staining of the left ventricle (small arrows). The right coronary arteriogram (C, D) also demonstrates the neovascularity of the myxoma (small arrow) and left ventricular staining (large arrow head), although the degree of vascularity and staining are milder compared with those of the left coronary artery. Pulmonary arteriography (E, F) demonstrates the gross appearance of myxoma which is mobile and nearly herniates into the mitral valve.
CAF has been considered to be an uncommon coronary anomaly. In our preliminary data, its incidence was 0.66% (38 patients) in 5,791 patients who underwent CAG. The underlying or complicating cardiac disease in those patients with CAF was aortic dissection in 2 patients, hypertrophic cardiomyopathy in 4, atrial septal defect in 2, patent ductus arteriosus in 1, ischemic heart disease in 4, and myxoma in one case, the present patient. This is the first case report, to our knowledge, of CAF complicated by myxoma.

Cardiac myxoma is a rare primary heart tumor. According to the data published by Van Cleemput\(^3\) and Chow et al,\(^4\) the prevalence of angiographically visible neovascularity in symptomatic cardiac myxoma is about 40%. The feeding arteries of the myxoma are the right and circumflex coronary arteries, each occurring in half the patients. In our patient, the myxoma was fed by both the left and right coronary arteries and clusters of tortuous neovascularities, and the contrast material showed lake-like pooling preceding leakage into the left atrium. Such neovascularities and lake-like pooling of contrast material are also described in our previous report,\(^5\) but are reported to be uncommon.

REFERENCES