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Giant Coronary Artery Aneurysm with a Fistula into the Left Ventricle —A Case Report—

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= Abstract = Giant aneurysm of the coronary arteries is a very rare condition. In a patient with such an aneurysm of the right coronary arteries and a fistula into the left ventricle, surgical treatment with aneurysmectomy and obliteration of the fistula was successful.

Key Words: ***Coronary artery, Aneurysm, Fistula***

INTRODUCTION

Though aneurysmal dilatation of a coronary artery associated with a fistula within the intracardiac chamber is not uncommon, giant aneurysm formation is very rare; only a few cases have been report (Scott, 1948; Valdivia, 1987: Lim, 1977). Here, we experienced a unique case of a giant coronary artery aneurysm. Treatment with aneurysmectomy and obliteration of the fistula was successful.

CASE REPORT

A 41-year-old Korean male was first seen in 1983, at the age of 35, because of palpitation and dyspnea on exertion for 10 years. A right heart catherization and angiography were performed, and a huge aneurysmal dilatation of the right coronary artery with fistulous communication into the left ventricle revealed. An operation was suggested, but the patient refused medical advice.

In December 1989, the patient was readmitted to seoul National University Hospital because of aggravation of dyspnea.

On examination, the blood presure was 130/90mmHg and rate 110/min.

The heartbeat was irregular, and a Gr III/IV pansystolic murmur was heard along the left sternal border.

The liver was two finger breadths palpable. Laboratory findings revealed a normal blood count, urinalysis, blood chemistry, and a negative serology.

The chest roentgenogram showed a marked cardiac enlargement with a bulging of the right cardiac border (Fig. 1).

Atrial fibrillation and left ventricular enlargement was noted on EKG.

Follow-up cardiac catheterization and angiography revealed a huge chamber, larger than the left ventricle, at the right coronary side. Left coronary angiography was normal. Right coronary angiography was not performed for fear of rupture. Oxygen saturation and pressure profile were unremarkable.

An MRI scan also revealed a huge chamber compressing both RA and RV (Fig. 2).

An operation was done via sternotomy and under the usual cardiopulmonary bypass and cold cardioplegia.

On opening the pericardium, a giant aneurysm was seen along the entire course of the right coronary artery.

It measured about ca 20 × 15 × 15 cm and extended into the right side of the chest, completely compresing the right atrium and superior vena cave far below (Fig. 3).

After a cross-clamping of the aorta the aneurysm was incised wide open.

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The prognosis appears to be poor, and death can occur suddenly from rupture, peripheral coronary embolism, or bacterial endocarditis (Seabra-Gomes *et al.*, 1974). Aneurysmal dilatation of the coronary artery associated with a fistula between an intracardiac chamber is not uncommon and, in these instances, the aneurysm is thought to be related to the high flow through the fistula (Ebert *et al.*, 1971). While most of the reported aneurysms were small and diagnosed at autospy, giant aneurysms rarely occur, and as in our case, these are particularly prone to occur in the fistulae from the right coronary artery entering either the posterior wall of the left ventricle or right ventricle (Lim *et al.*, 1977; Meyer *et al.*, 1967).

In our case, the aneurysm was thought to be congenital because there was no evidence implicating other possible causes.

Surgical treatment of giant coronary artery aneurysm has not been discussed well. Surgical treatment of a small aneurysm, however, with excision of the aneurysm and use of an saphenous vein graft to reestablish continuity of the artery, has been described (Ebert *et al.*, 1971; Dawson *et al.*, 1972).

Aneurysmorrhappy combined with thrombectomy and endarterectomy, along with bypass of the aneurysm with a vein graft without excising the aneurysm, have also been described (Anabtawi *et al.*, 1974; Gharamani *et al.*, 1972).

As in Lim's case in 1977, we performed the operation with aneurysmectomy and closure of both proximal and distal ends of the aneurysm successfully without a bypass procedure, probably because of a large collaterial blood suppy from the left coronary artery.

REFERENCES

Anabtawi IN, de Leon Ja. Atherosclerotic aneurysm of the coronary arteries. J. Thorac and Cardiovasc. Surg. 1974, 68: 226-228

Bougon M. Quoted by Jarcho, S. Bougon on Coronary Aneurysm (1812). Am. J. Cardiol. 1969, 24: 551-551

Daud As, Pankin D, Tulgan H, Florentin RA. Aneurysm of coronary artery. Am. J. Cardiol. 1963, 11: 228-237

Dawson JE, Ellison RG. Isolated aneurysm of the anterior descending coronary artery. Am. J. Cardiol. 1972, 29: 868-871

Ebert PA, Peter RH, Gunnels JC, Sabiston DC. Jr. Resecting and grafting of coronary artery aneurysm. Circulation 1971, 43: 593-598

Gharamani A, Leyenger R, Cunha D, Jude J, Sommer L. Myocardial infarction due to coronary arterial aneurysm (with success saphenons vein graft). Am. J. Cardiol. 1972, 29: 863-867

Lim CH, Tan NC, Tan L, Seah CS, Tan D. Giant congenital aneurysm of the right coronary artery. Am. J. Cardiol. 1977, 39: 751-753

Meyer MH, Stephenson HE, Keats TE, Martt JM. Coronary artery resection for giant aneurysmal enlargement and arteriovenous fistula. Am. Heart J. 1967, 74: 603-613

Scott DH. Aneurysms of the coronary arteries. Am. Heart J. 1948, 36: 403-421

Seabra-Gomes R, Sommerville J, Ross DN, Emanuel R, Paiker DJ, Wong M. Congenital coronary antery aneurysms. Br. Heart J. 1974, 36: 329-335

Valdivia E. Large aneurysms of the right coronary artery. Arch. Pathol. 1957, 63: 168-171

= 국문초록 =

좌심실로 통하는 관상동맥루를 동반한 거대 관상동맥류

—1례 보고—

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거대 관상동맥류는 매우 드문 질환이다. 저자들은 좌심실로 통하는 관상동맥루와 우측 관상동맥의 거대 관상동맥류를 가진 환자 1례에서 동맥루의 폐쇄술 및 관상 동맥류제거술을 시행하여 좋은 결과를 얻었기에 보고하는 바이다.