ISCHEMIC HEART DISEASE SHOWING UNUSUAL ANGIOGRAPHIC FINDINGS

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Atherosclerotic lesions usually occur in the proximal and middle portion of the coronary arteries. Multiple obstructive lesions appearing only in the peripheral branches without lesions in the proximal or distal portion have not been reported. We encountered a patient with ischemic heart disease showing multiple obstruction in the peripheral branches of the right and left coronary arteries without significant stenotic lesions in the proximal or middle portion. This 49-year-old male was admitted to Yamada Red Cross Hospital due to angina pectoris. Coronary risk factors for him included hypertension, abnormal glucose tolerance, smoking habit, and obesity. Laboratory studies showed a complete blood count and normal blood chemistries, as well as thromboplastin and prothrombin times. Coronary angiography showed multiple obstruction or marked stenosis in the distal portion and peripheral branches; there was no stenosis in the proximal and middle portions. Left ventriculography showed severe hypokinesis in the diaphragmatic segment. Biopsy of the left ventricular endocardium showed interstitial fibrosis but showed no abnormalities in the myocardial fibers or cell infiltration to perivascular areas and vascular walls. Coronary angiography after two months showed multiple lesions, as previously observed. Although ischemic heart disease is caused by various types of vasculitis, embolism, coronary spasm, and fibromuscular dysplasia, in this patient, there were no findings suggestive of causes other than atherosclerosis. This case is interesting in terms of rare angiographic findings and its cause.

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ISCHEMIC heart disease is generally caused by atherosclerosis. Atherosclerotic lesions usually occur in the proximal and middle portion of coronary arteries. Multiple obstructive lesions appearing only in the peripheral branches without lesions in the proximal or middle portion have not been reported. We encountered a patient with ischemic heart disease showing multiple obstruction in the peripheral branches of the right and left coronary arteries without significant stenotic lesions in the proximal or middle portion. Although ischemic heart disease is caused by various types of vasculitis, embolism, coronary spasm, and fibromuscular dysplasia in our patient, there were no clinical findings suggestive of causes other than atherosclerosis. This case is interesting in terms of rare angiographic find-

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ings and its cause.

A 49-year-old male was admitted to Yamada Red Cross Hospital due to shortness of breath and heaviness in the chest. He had a history of cerebral infarction (once 6 years and once 1 year ago). The patient noticed shortness of breath on exertion and heaviness of the chest 6 years ago and he developed chest pain at rest 2 years ago. Shortness of breath on exertion and heaviness of the chest persisted thereafter. On admission, physical examination showed a blood pressure of 134/70 mmHg and a pulse rate of 78/min, no abnormalities in the chest or abdomen were evident. The pulse in the periphery of the four limbs was palpable. Neurological examination revealed paresis in the right upper and lower limbs, as well as dysarthria. Laboratory studies showed a complete blood count and normal blood chemistries as well as thromboplastin and prothrombin times. Chest x-ray findings were normal. Electrocardiography showed normal sinus rhythm and the ST segment depression in leads 2, 3, aVF, V5 and V6. Antinuclear antibody and rheumatoid factor

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were negative, and the r-globulin level was normal. A computed tomographic scan of the head demonstrated infarction in the left cerebral hemisphere. Coronary risk factors for the patient included hypertension, abnormal glucose tolerance, smoking habit, and obesity.

Cardiac catheterization was performed, hemodynamic findings were normal. Left ventriculography showed severe hypokinesis in the diaphragmatic segment. Left coronary arteriography showed multiple obstruction or marked stenosis in the distal portion and peripheral branches. Multiple stenosis was present in the right coronary artery, and most of the peripheral branches were obstructed. There was no stenosis in the proximal and middle portions of the left or right coronary artery (Fig. 1).

Biopsy of the left ventricular endocardium showed interstitial fibrosis but showed no abnormalities in the myocardial fibers or cell infiltration to perivascular areas and vascular walls.

Aspirin, isosorbide dinitrate, diltiazem, and metoprolol was prescribed, and the patient was subsequently discharged. However, angina frequently occurred after discharge and two months after discharge, cardiac catheterization was performed again. Left ventriculography showed no changes in the previously demonstrated abnormal wall motion. Coronary angiography also showed multiple obstruction in peripheral branches, as previously observed.

Our patient showed multiple obstruction of the peripheral branches of the right and left coronary arteries without significant stenotic lesions in the proximal or middle portion, which are unusual angiographic findings. The following disease may be considered, in addition to atherosclerosis as possible causes of the coronary lesions in this patient.

Some collagen diseases cause vasculitis in the coronary artery? However, there was no clinical evidence of collagen disease in this patient and biopsy of the endocardium showed no vasculitis.

Coronary embolism, which sometimes causes multiple obstruction in the coronary periphery, has been reported to cause coronary obstruction. An underlying disease for coronary embolism or the source of thrombi is often present. Left ventricular thrombi forming after myocardial infarction are sometimes freed, causing embolism in the coronary arteries or cerebral vessels. In this patient, there is a possibility that thrombi formed in the diaphragmatic segment were freed, resulting in multiple obstruction in the periphery of the coronary arteries. This mechanism may also explain his history of brain infarctions. However, coronary emboli are often lysed with time. Persistent multiple obstructions observed on coronary angiography after 2 months may exclude the possibility of multiple embolism in this patient.

Fibromuscular dysplasia is a non-atherosclerotic coronary disease. Coronary lesions involved with this disease were considered to occur in the proximal portion of the major coronary arteries, including the main trunk of the left coronary artery. However, recent reports have suggested that small coronary arteries are also affected. The diameter of affected vessels is usually 0.1-1.0 mm, and lesions are observed only in the sinus node artery, atrioventricular node artery, and arteries in the interventricular or interatrial septum. These findings are inconsistent with the coronary lesions in our patient; the diameter of damaged blood vessels in our patient was larger, and lesions were observed in vessels other than those described above.

In this patient, a definite diagnosis could not be made. To our knowledge, there are no reports of atherosclerosis producing such angiographic findings. However, the patient did have some coronary risk factors, and it is widely accepted that atherosclerosis is a common cause of ischemic heart disease. Atherosclerosis cannot be excluded as a cause of coronary lesions in this patient. Some patients with coronary atherosclerosis may show multiple peripheral obstructions without significant stenotic lesions in the proximal or middle portion.

REFERENCE

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