

# An uncommon congenital anomaly of coronary arteries misdiagnosed as intracoronary thrombus: woven coronary artery disease

*İntrakoroner trombus olarak yanlış tanı alan nadir bir konjenital koroner arterler anomalisi: "Woven" koroner arter hastalığı*

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## Introduction

Woven coronary artery disease is a rare congenital malformation characterized by dividing coronary arteries into thin channels, which then join distally (1). This morphology has been previously described in both right and left coronary arteries and may be associated with acute coronary syndromes. Probably most of these anomalies are misdiagnosed by many clinicians. We report a case of right woven coronary artery disease, causing a misdiagnosis as intracoronary thrombus formation.

## Case Report

A 56-year-old patient had coronary angiography in 1993 for stable angina pectoris and exercise dyspnea post acute inferior myocardial infarction. The coronary angiograms showed a 30% stenosis of left main coronary artery (LMCA), total occlusion of the first obtuse marginal branch of left circumflex artery (OM1) and 99% stenosis of right coronary artery (RCA) with large intracoronary thrombus formation. At that time, the lesion of the RCA was not identified as woven coronary anomaly. Left ventriculography showed akinetic posterobasal, apical and posterolateral segments. There was a retrograde flow from left anterior descending artery (LAD) to OM1. No interventional therapy was performed and medical therapy was planned for the patient. However, eight years later, the patient applied to another hospital with effort angina. A coronary angiogram showed 50% stenosis in LMCA, 30% stenosis in LAD after the first diagonal branch and at this time the lesion in the right coronary artery was thought to be a dissected plaque with large thrombus and the clinicians decided to make revascularization with bypass surgery. Patient underwent myocardial revascularization using the left internal mammarian artery (LIMA) to LAD and saphenous vein graft between aorta and OM1 coronary artery, and no graft to RCA beca-

use of the large thrombus from proximal RCA to crux. After the coronary artery bypass surgery the patient improved clinically. Three years after the bypass surgery he was referred for coronary angiography because of atypical chest pain. Coronary angiography showed that the right coronary artery was subdivided into thin channels with a normal flow rate, which fused again (Figure 1-2). The LIMA and saphenous graft were clear and perfusions of distal LAD and OM1 were well preserved. On left ventriculography posterobasal, apical, apical septum and posterolateral segments were akinetic. Although we could not compare the angiographic findings of RCA with prior angiograms, they were similar with descriptions in reports. We described this coronary malformation as woven coronary artery. In detailed examination of patient with echocardiography there was no additional congenital cardiac anomaly. Therefore, medical treatment was suggested to the patient.

## Discussion

Congenital anomalies of the coronary arteries are reported to occur in 0.6% - 1.3% of the general population (2-3). They may occur in conjunction with complex congenital heart disease or as isolated abnormalities, and their clinical manifestations and importance vary widely. Most of coronary artery anomalies include abnormal origin and distribution of the coronary arteries and intracoronary communications and fistulae (4). In some patients, very rare coronary artery anomalies can be seen such as woven coronary artery disease. On coronary angiography, the division of the coronary artery can be misleading suggesting a complicated plaque with thrombus formation instead of a coronary malformation. But, on the other hand in the woven coronary artery the distance of the thin channels and the twisting of the channels can trigger the presence of a thrombus (4). In the catheterization laboratory, the risk of an undue coronary angiop-

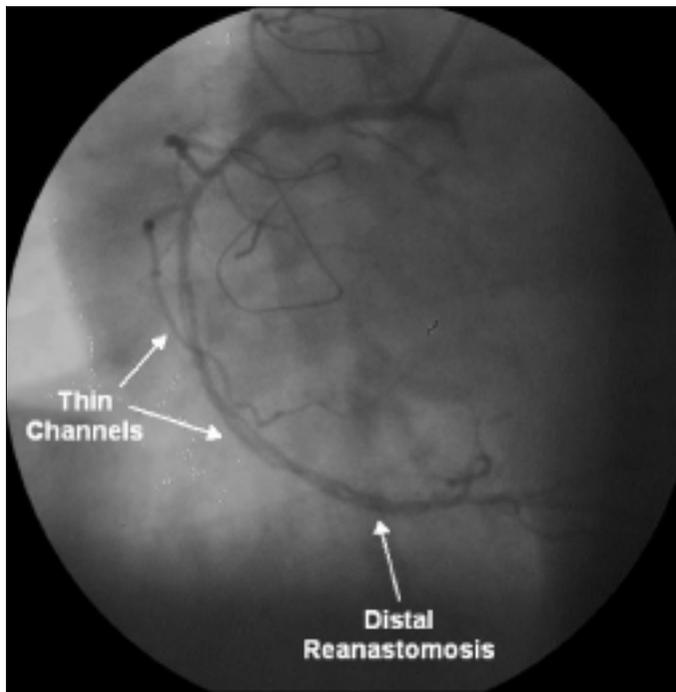


Figure 1. Left anterior oblique projection of right coronary artery showing thin channels and distal reanastomosis

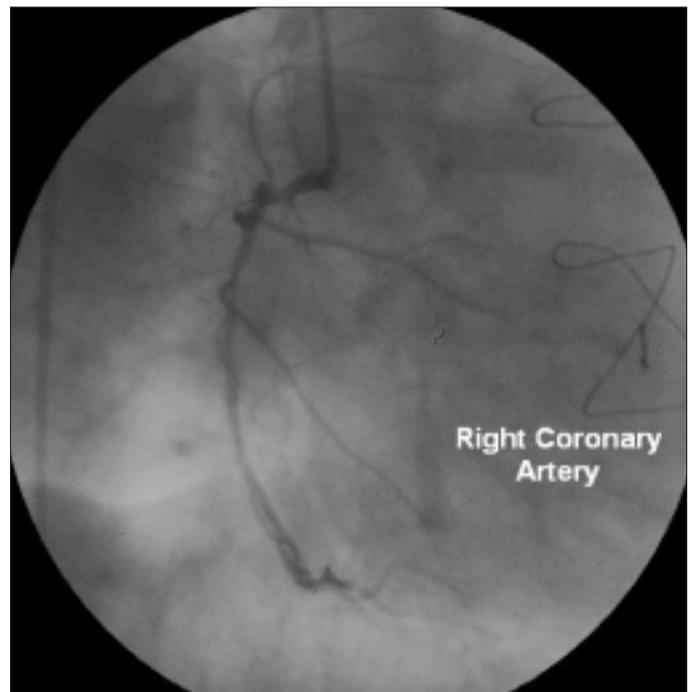


Figure 2. Right anterior oblique projection of woven right coronary artery

lastly to the malformed artery with sub ensuing damage is real. So, clinicians must fastidiously examine angiograms to avoid malpractices. In patients with woven coronary malformation the differential diagnosis could be based on: 1) no history of an acute coronary event related to the examined coronary artery and presence of a normal coronary reserve at stress scintigraphy; 2) the flow which is surprisingly normal considering the extension of the apparent filling defects; 3) a careful radiological examination (digital zooming) can help for a correct interpretation of the angiographic image (5).

This case shows that woven coronary artery anomaly can be misdiagnosed by various clinicians so all clinicians performing angiography have to be very regardful in interpreting angiograms especially for malformation and anomalies.

## References

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