

Disecting coronary artery after CAG in single right coronary artery

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A 9-year-old girl with pulmonary atresia with ventricular septal defect with patent ductus arteriosus presented with progressive dyspnea after undergoing the Rastelli Operation. At the age of 7, she had a pulmonary artery anatomy evaluation prior to the Rastelli's Operation due to progressive cyanosis. Pre-operative echocardiogram and cardiac catheterization revealed good size pulmonary artery branches, suspected pulmonary artery bifurcation stenosis, and severe constriction of PDA. A single right coronary artery arising from right coronary cusp was detected. The Rastelli Operation with PDA division with RPA pericardial enlargement were performed without immediate complication. She was functional class I.

Four months after surgery, she complained about dyspnea on exertion and was diagnosed with congestive heart failure. Echocardiogram and cardiac catheterization revealed poor left ventricular function without coronary obstruction. Congestive heart failure improved after medical treatment.

Three months post discharge, she had an episode of right hemiparalysis due to an embolic stroke and was diagnosed with protein C deficiency. Echocardiogram revealed a clot in left atrium appendage. (Figure 1) She improved after low molecular weight but still experienced decreased functional class.



เสนอโดยนางสาวพิมพ์ภัค ประชาศิลป์ชัย ตำแหน่ง นายแพทย์ สถาบันสุขภาพเด็กแห่งชาติมหาราชินี

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Figure 1: Clot in left atrium appendage.

MRI revealed abnormal enhancement at septal and anterior wall of the LV apex and at the anteroseptal wall of mid LV. Myocardial perfusion scan showed area of ischemia at anterior, inferior, lateral wall, and apex. Coronary artery stenosis should be ruled out.

We decided to do the selective coronary angiogram again by hand injection but at the same time, patient was moving and contrast images still showed staining in the coronary artery. (Figure 2, 3) Another projection revealed a flap dissecting right coronary artery below the bifurcation. (Figure 4) Emergency coronary stenting was perform. (Figure6-9)

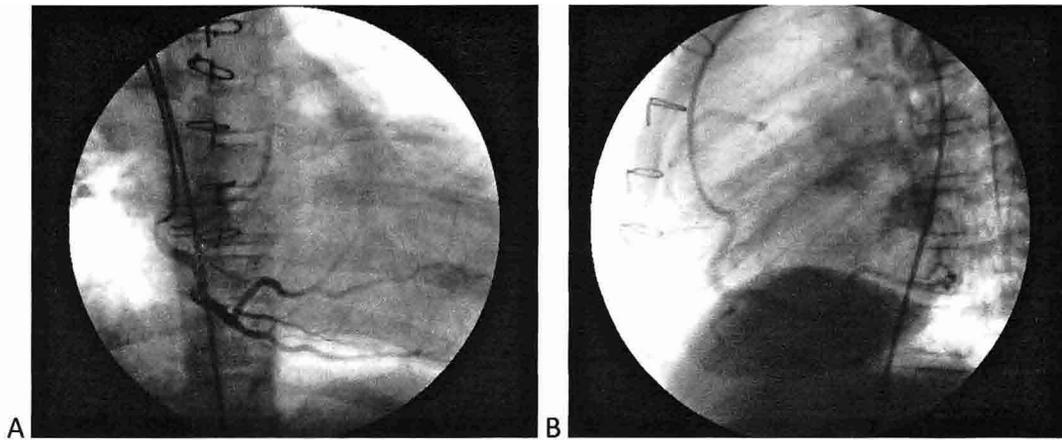


Figure 2: The selective coronary angiogram (A,B).

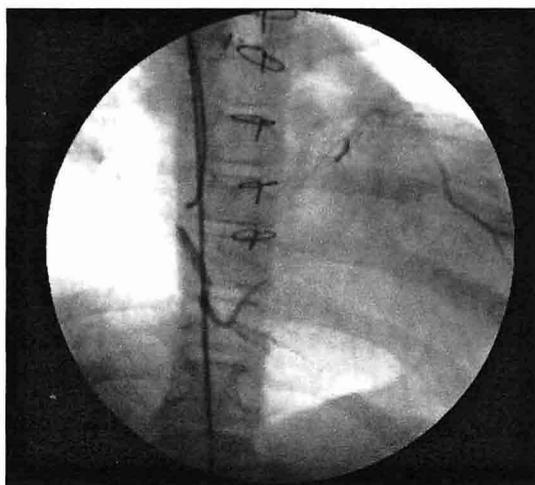


Figure 3: Contrast still showed staining in the coronary artery.

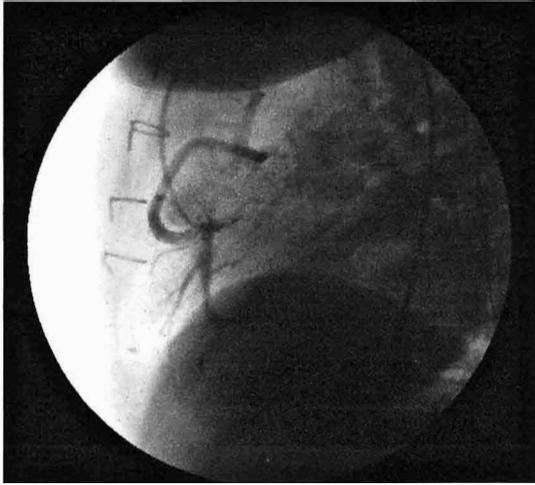


Figure 4: The angiogram revealed a flap dissecting right coronary artery below the bifurcation.

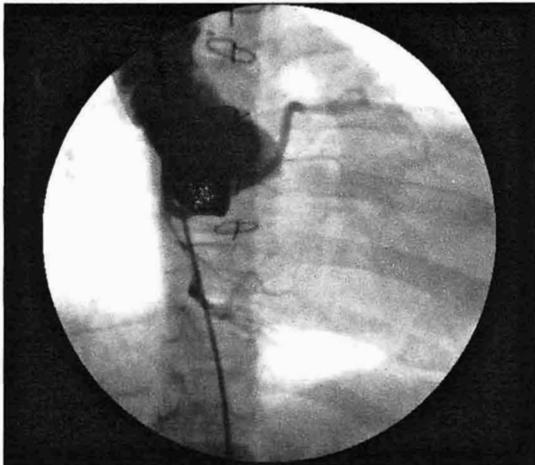


Figure 5: The aortogram confirmed the dissecting coronary artery.

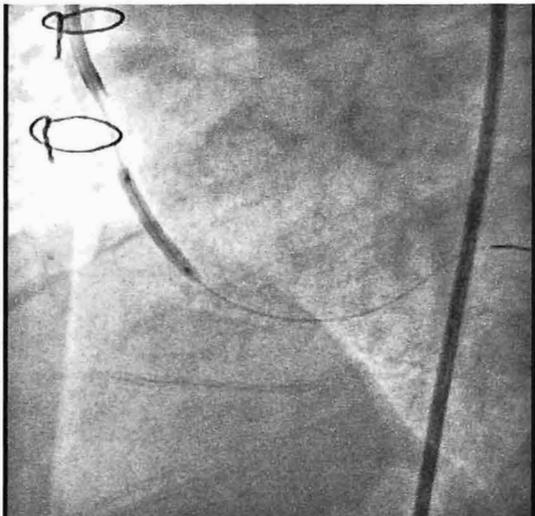


Figure 6: The Ryuji balloon 2.5 mm x 20 mm was used to inflate the area of dissecting flap.

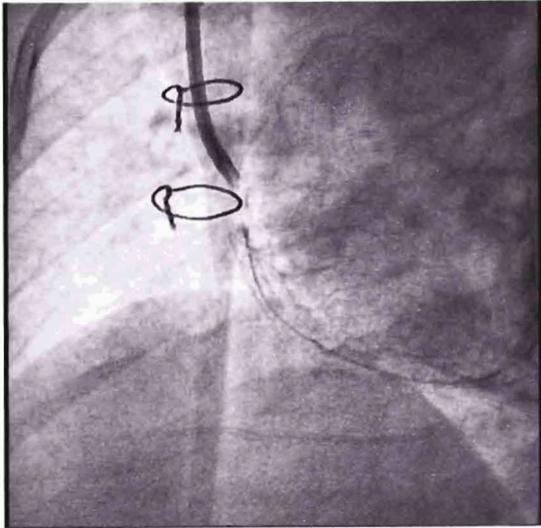


Figure 7: A 3.0 mm x 18 mm. Gazelle stent was used to stent at the lesion.

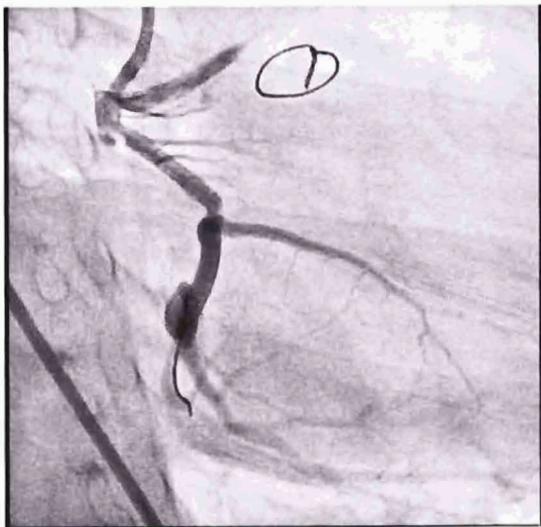


Figure 8: The angiogram revealed residual dissecting at the proximal part above the stent.

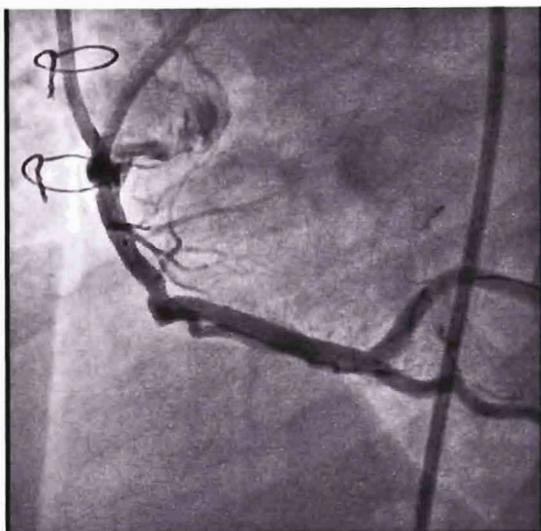


Figure 9: A 3.5 mm x 8 mm stent was used to stent at the residual part.

The last angiogram revealed good coronary artery flow. Patient was on double antiplatelet therapy with warfarin. Patient is functional class II and still being followed up at the clinic.

Catheter-induced coronary dissection (CICD) is rare but potentially life threatening complication. Some risk factors have been described including increased catheter size to coronary diameter ratio, catheter to coronary wall contact and acute catheter to coronary angle.

The outcome of CICD is incompletely described. In order to avoid and prevent this life threatening complication, interventional cardiologists should always keep this problem in mind while engaging coronary ostium. Proper position of the catheter tip prior to contrast injection is crucial. In addition, gently pull back of the catheter is also mandatory.