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Right pulmonary arterial graft revascularization for chronic obstructive disease.

Russell Salamo

Department of Vascular and Interventional Radiology, Saint Louis University School of Medicine, 1402 S Grand Blvd, Saint Louis, MO, 63104, United States

Author name :
Russell Salamo
Department of Vascular and Interventional Radiology, Saint Louis University School of Medicine, 1402 S Grand Blvd, Saint Louis, MO, 63104, United States,

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Abstract

Rarely can a condition known as abnormal aortic origin of the left coronary artery (AAOLCA) occur. Surgery is advised to correct this defect in order to increase the patients' long-term survival since it may cause cardiac ischemia. We describe a case of successfully mobilising an abnormal left main coronary artery, translocating a pulmonary artery, and inserting a graft into the right pulmonary artery with a late complication of graft blockage. This case underscores the value of phased treatment and demonstrates the difficulty in recanalizing pulmonary artery graft occlusion and stenosis.

Keywords:
Graft, Pulmonary artery, Revascularization, Thoracic, Thrombosis

INTRODUCTION

When the left coronary artery (AAOLCA) emerges from the wrong coronary sinus, it has an abnormal aortic origin. AAOLCA is an uncommon condition that can result in myocardial ischemia, angina, dyspnea, and a reduced ability to tolerate exercise. [1,2] Surgery to mobilise an anomalous left main coronary artery and a pulmonary artery is used to treat AAOLCA.graft interposition and transfer to the right pulmonary artery. With the implantation of stents, there is an increased danger and complexity for additional surgery as well as a risk of fracture, embolization, stenosis with intra-stent neo proliferation, and risk of stenosis. There is still a dearth of information on the prevalence and treatment of stenosis and occlusion of pulmonary artery grafts.

CASE REPORT

A female patient, age 41, complained of shortness of breath and chest pain. Her prior medical history was important for her pulmonary artery translocation, placement of a 16 mm Dacron graft in the right pulmonary artery, and anomalous aortic origin of the left coronary artery (AAOLCA) status following mobilisation of the anomalous left main coronary artery Computed.The chest's CT angiography revealed that the right pulmonary artery was blocked.Aspirin and heparin were used to prevent clotting in the patient, and interventional radiology was called in order to perform thrombolysis and recanalize the graft.

The right pulmonary artery was completely blocked, according to pulmonary angiography performed by femoral access. Multiple catheters and wires were used to try to get access to the occluded right pulmonary artery graft for recanalization, but they were unsuccessful. Tissue plasminogen activator (tPA) was given at a rate of 2 mg/h through the major pulmonary artery using an ultrasound-assisted 6 French infusion catheter from EKOS, South Bothell, Washington.A second pulmonary artery angiography taken using the same infusion catheter 24 hours later revealed no substantial change and continued blockage of the right pulmonary artery graft.

Despite the use of numerous catheter and wire combinations, the blocked right pulmonary artery graft could not be bridged. tPA was infused at a rate of 1 mg/h using a 5 French Mikaelsson infusion catheter from Angiodynamics in Latham, New York (Genentech, San Francisco, CA). Through both sheaths, heparin infusion was given at a rate of 100 units/h.The 5 French Mikaelsson infusion catheter was replaced to a 5 French pigtail catheter the next day, and an further pulmonary angiography revealed no blood flow into the primary right pulmonary artery. A 6 French AR1 and guide catheter (Medtronic, Minneapolis, Minnesota) were used to engage a tiny gap produced after the tPA chipped away at the occlusive thrombus in the right pulmonary artery via a 0.035 guidewire (Cook Medical Inc., Bloomington, IN).

The occluded right pulmonary artery graft was then crossed using a 0.014 Confianza wire (Abbott, Abbott Park, Illinois) and 1.7 French microcatheter combination (Terumo, Somerset, New Jersey). The right pulmonary artery and its branches were seen during an angiography. many tries to crossUsing both a 6 French EKOS infusion catheter and a 4 French Fountain infusion catheter, with a bigger catheter were produced.

After larger catheters failed to cross, balloon angioplasty employing a 2 mm 2 cm diameter balloon (Powercross-eV3/Medtronics, Minneapolis, MN) and a 4 mm 4 cm angioplasty balloon were carried out. Following balloon dilation, a follow-up angiography revealed a large amount of recoil. We modified a 4 French glide catheter by drilling holes in the proximal 3 cm. The modified 4 French glide catheter was buried at the anastomosis of the occluded right pulmonary artery graft over a 0.035-

inch extending glide wire, and tPA was administered at a rate of 1 mg/h.

CONCLUSION

Revascularization of pulmonary artery endografts is not thoroughly described in the literature, although the method for recanalizing peripheral arterial grafts is. In this instance, a stepwise strategy was used to execute the crossing as it would be for any other CTO, such as one involving peripheral arteries. Our case serves as an example of how balloon angioplasty and CDT can be used to successfully revascularize a graft from an obstructed pulmonary artery. Our example offers instructions on how to bridge an obstructed pulmonary artery graft and restore blood flow to the pulmonary vasculature.

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