

SURGICAL MANAGEMENT OF GIANT CORONARY ARTERY ANEURYSMS WITH ASSOCIATED FISTULA

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INTRODUCTION

Giant coronary artery aneurysms with fistulas are rare and associated with risk of rupture.¹ Fistulas with large left-to-right shunting can be complicated by congestive heart failure, aneurysms, endocarditis, or embolization with myocardial infarction. Because of these significant complications, surgery or intervention with transcatheter closure is recommended in symptomatic patients.

From July 1963 to 2007, Dr. Howell performed 30,000 cardiac or vascular operations at The Methodist Hospital. Among these, three patients who had giant coronary artery aneurysms with fistulas underwent surgical correction. Surgical strategies for correction included aneurysm resection and fistula closure, coronary reconstruction, coronary artery bypass, primary ligation, and hybrid therapy involving aneurysm ligation and transcatheter embolization.

CASE #1

The first patient in this series was a 44-year-old male with a three-month history of progressive fatigue and weakness. On physical examination, we found an enlarged heart with a continuous grade III/VI murmur over the mid sternum, and chest X-ray showed cardiac enlargement with prominent pulmonary vascular markings. Subsequent coronary angiography showed a large aneurysm arising from the proximal right coronary artery (RCA) with a fistulous communication to the right atrium. The RCA itself had a high origin from the aorta (Figure 1). A 2.5:1

left-to-right shunt at the arial level was calculated by oximetry.

The fistulous connection from the aneurysm was seen to enter the junction of the superior vena cava and right atrium on the atrium's posterior wall (Figure 2).

Operative management with cardiopulmonary bypass ensued. The fistula connecting the aneurysm of the right coronary artery and the right atrium was dissected from the surface of the right ventricle. The aneurysm was then opened, displaying the orifice of the fistula and the orifice of the proximal and distal segments of the RCA (Figure

3A). The fistula orifice was obliterated with a continuous suture (Figure 3B), and the normal coronary artery was mobilized and then anastomosed to the orifice of the proximal RCA at its origin from the root of the ascending aorta (Figure 3C). Postoperative angiograms demonstrated obliteration of the fistula with a normal looking right coronary artery (Figure 4).

CASE #2

The second patient was a 72-year-old female presenting with a cough and symptoms suggestive of bronchitis. On physical examination, a

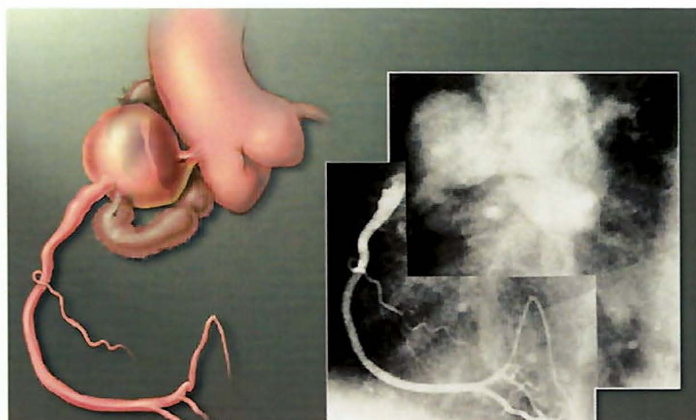


Figure 1. A large aneurysm arises from the proximal right coronary artery (RCA) with a fistulous communication to the right atrium.

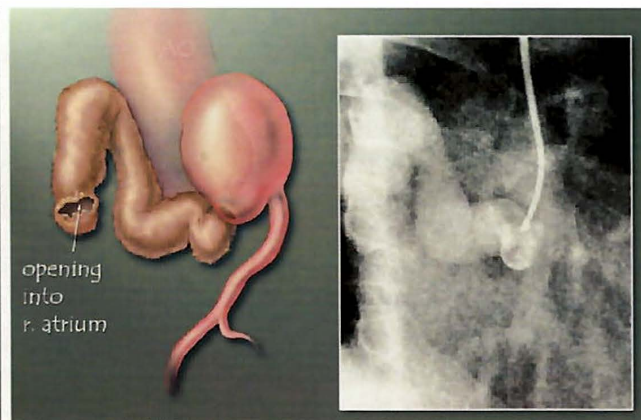


Figure 2. The fistulous connection enters the junction of the superior vena cava and right atrium on the atrium's posterior wall.