

# Left Main Stenting Basics: *Best Projection, Guiding Catheter, Angiography Interpretation*

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# Cardiovascular Complications of Radiotherapy

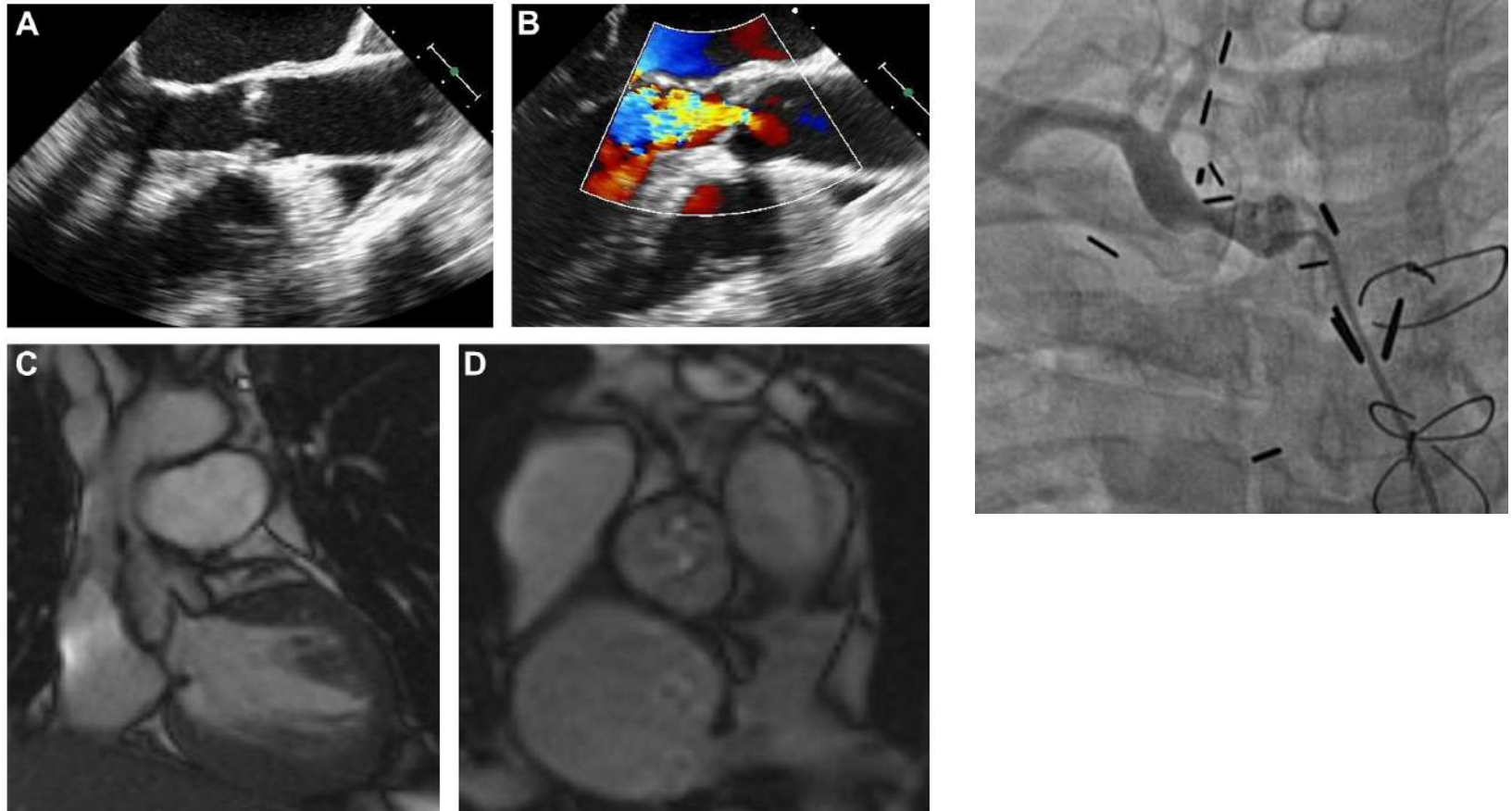
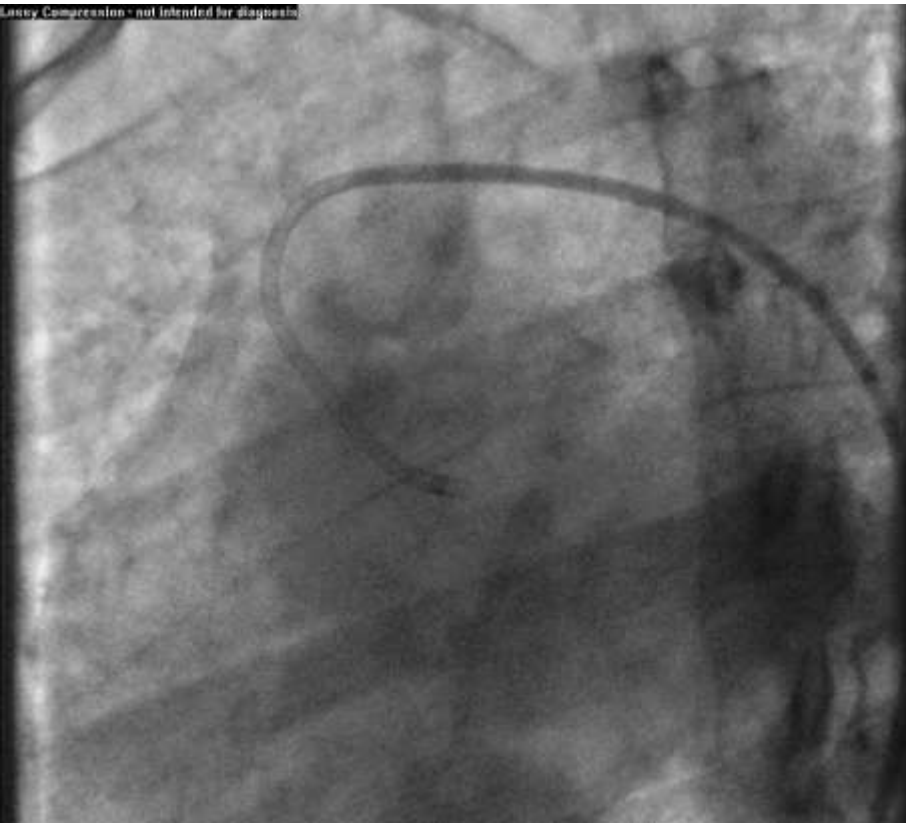


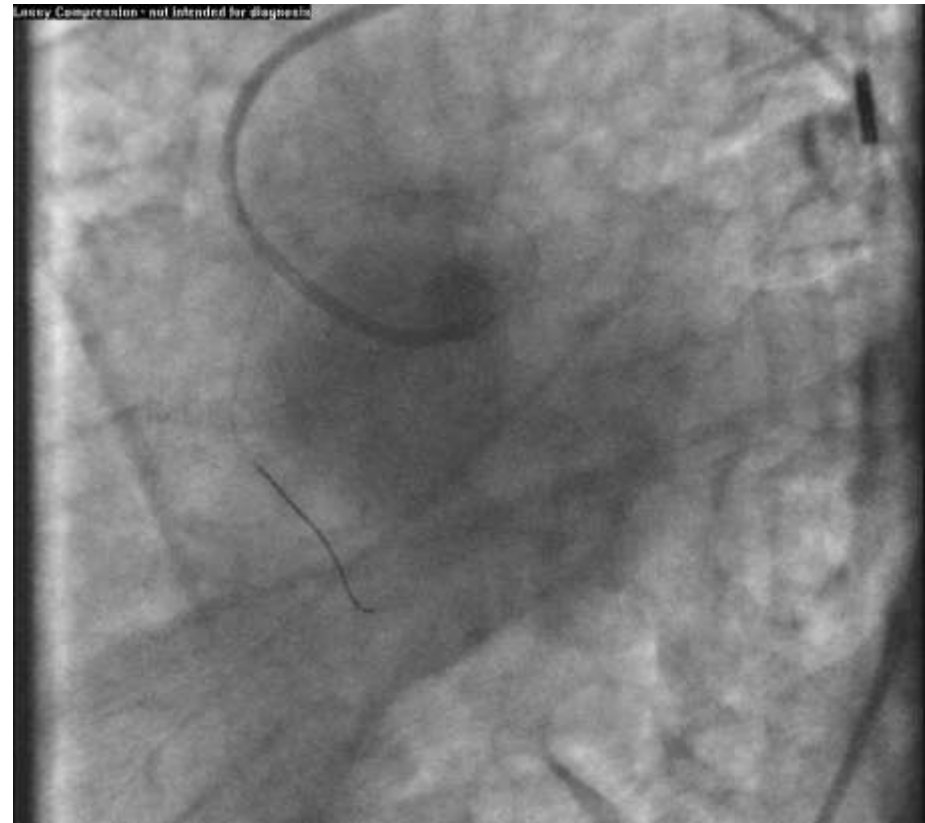
Figure 1. A 42-year-old woman with a history of Hodgkin disease diagnosed in her early 20s was treated with radiotherapy, chemotherapy, and thoracotomy for debulking. Transesophageal echocardiography demonstrates aortic stenosis with a calculated aortic valve area of  $0.9 \text{ cm}^2$  (A) and aortic regurgitation (B). Cardiac magnetic resonance imaging shows poor leaflet opening of the aortic valve (C, D).

# Ostial Left Main Disease

LAO caudal



s/p POBA



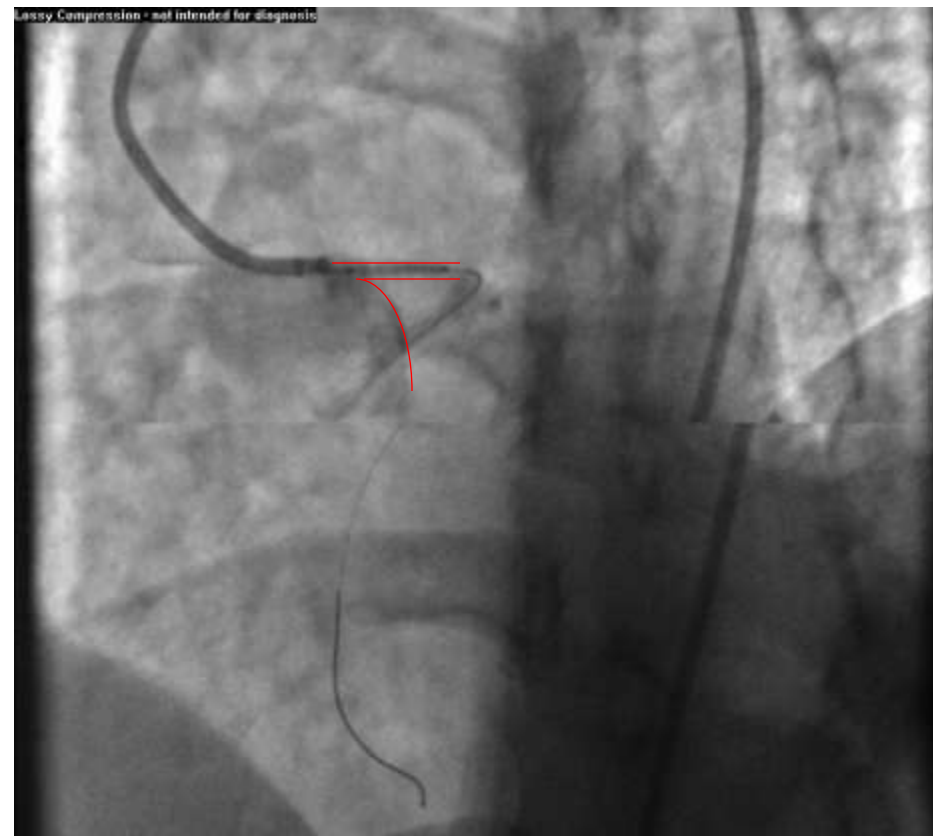
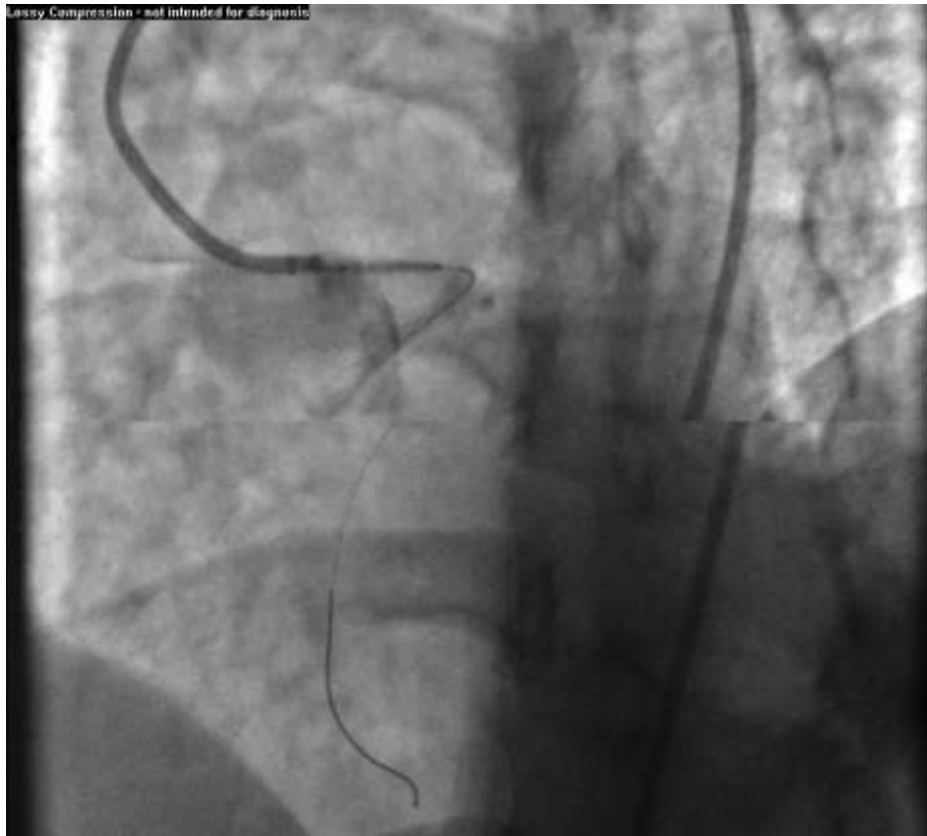
22-year old female with Hodgkin's disease s/p radiation therapy



# Ostial Left Main Disease

LAO cranial

LAO cranial

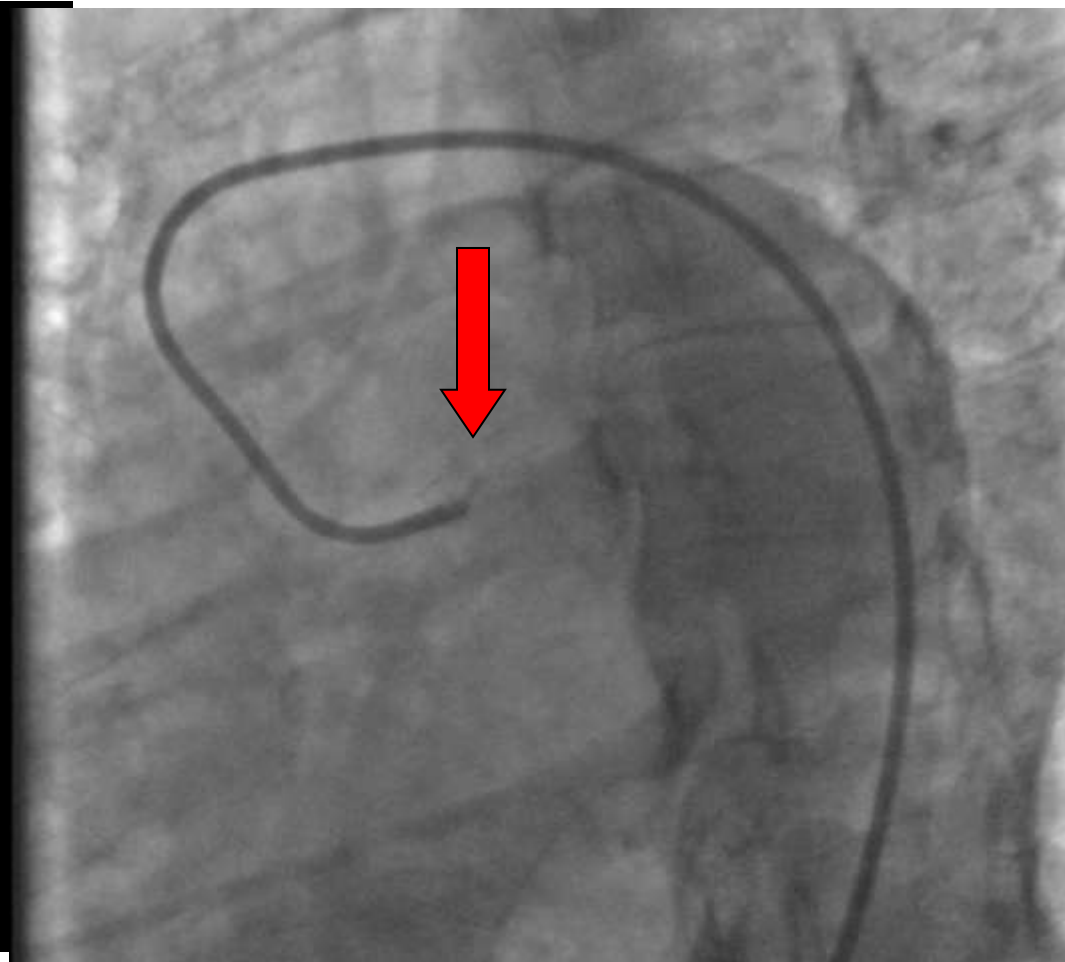


# Ostial Left Main Disease

LAO cranial

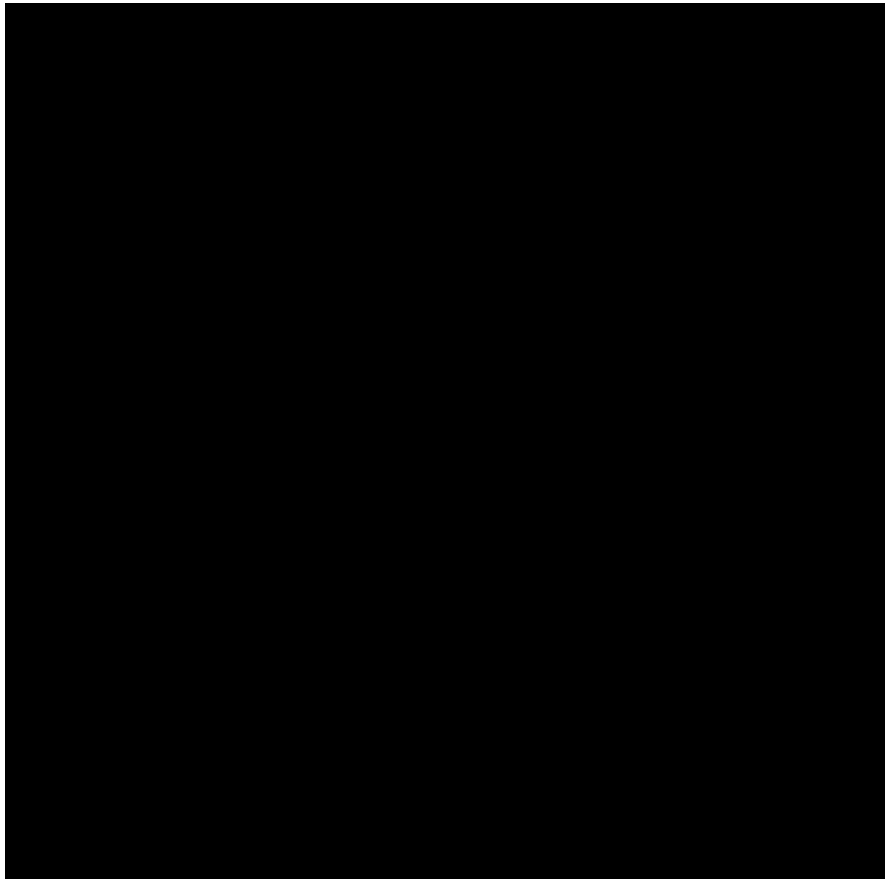


Stent fracture

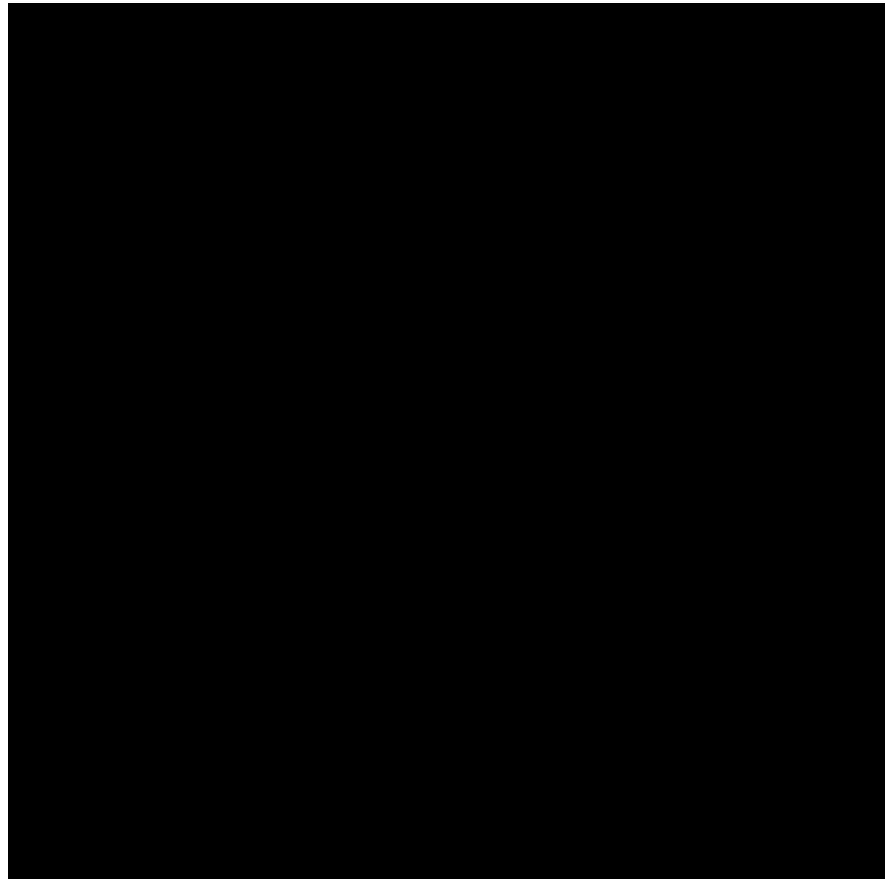


# Ostial Left Main Disease

AP cranial

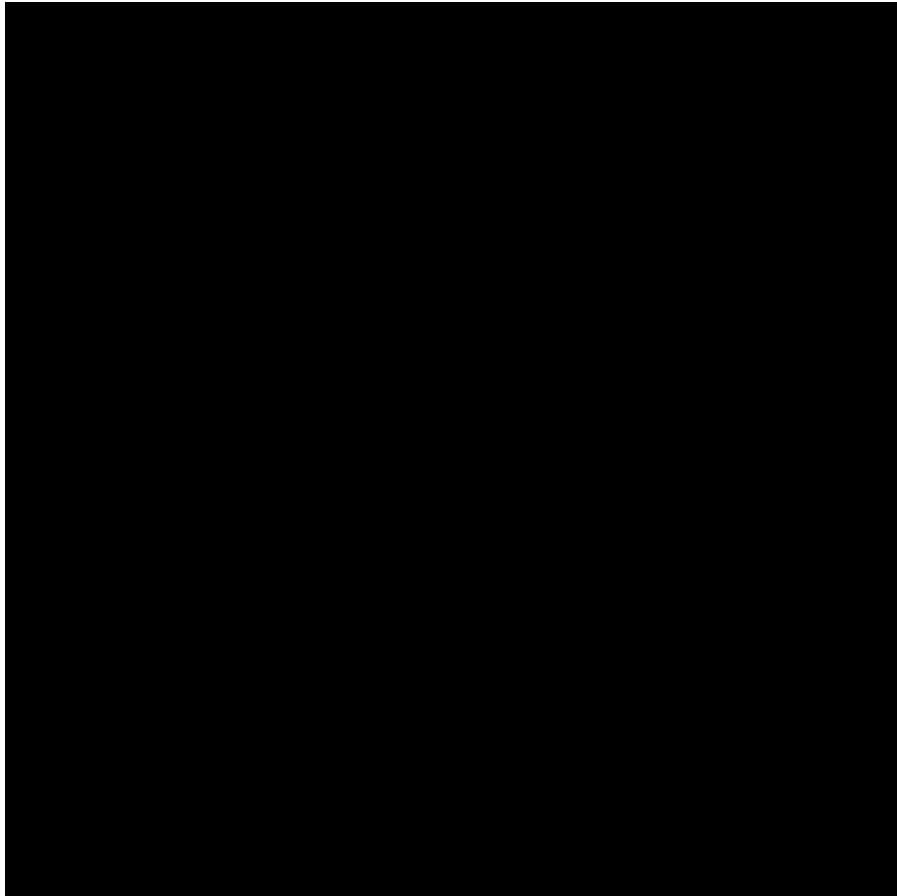


RAO cranial

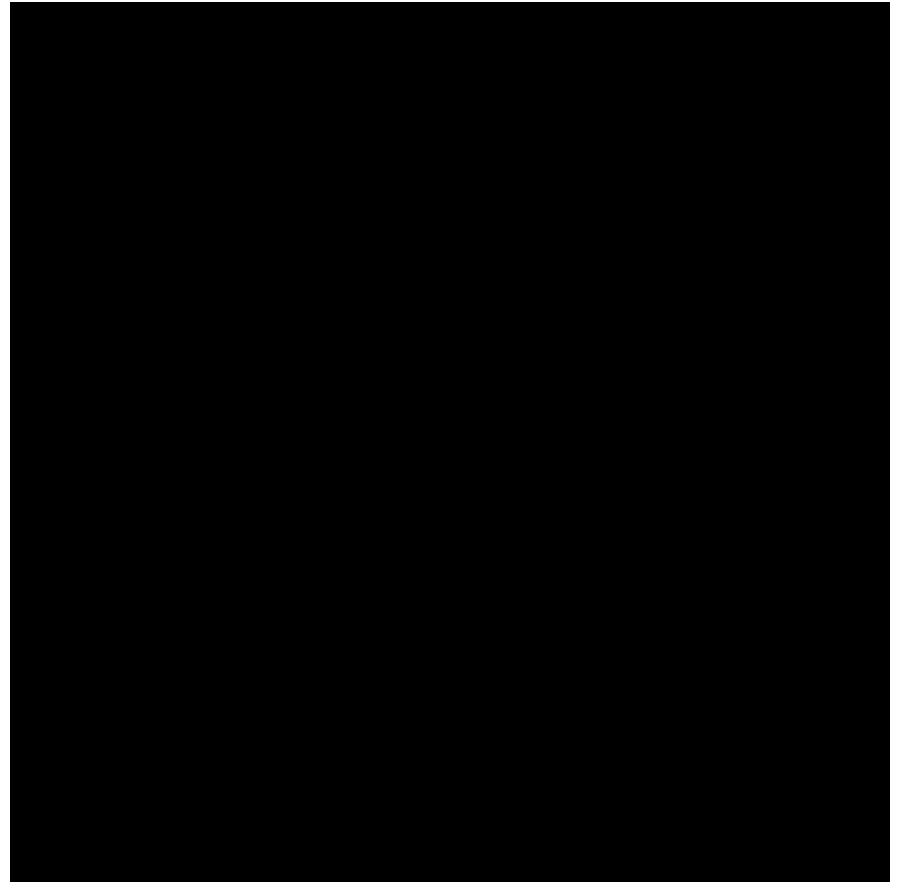


# Ostial Left Main Disease

After Rotational Atherectomy



AP cranial

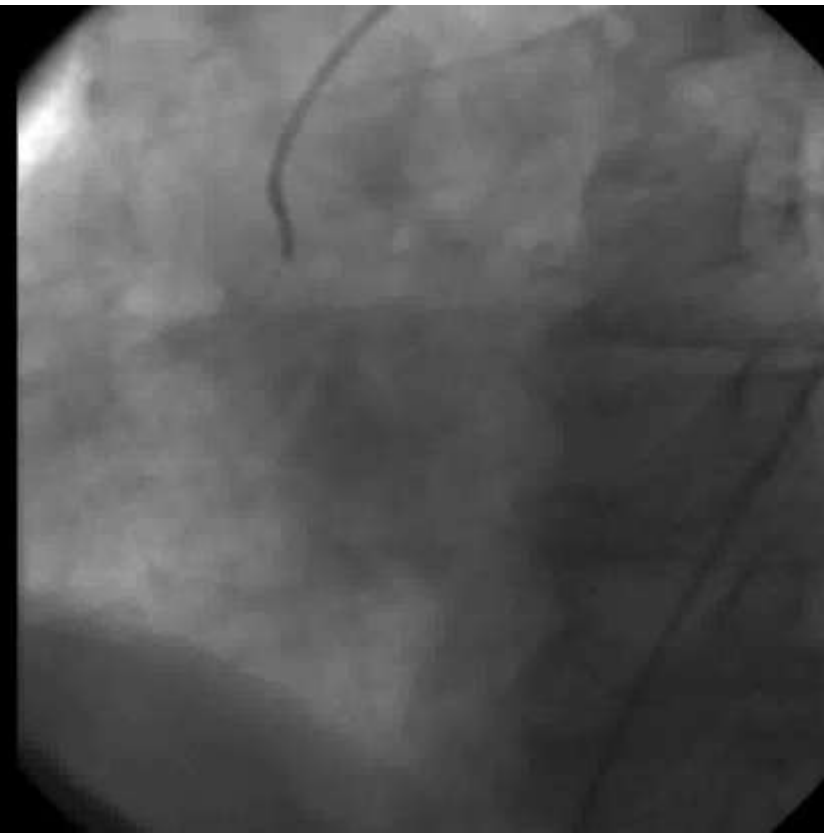


# Distal Left Main Bifurcation *2-Stent Approach*

Left ventriculogram



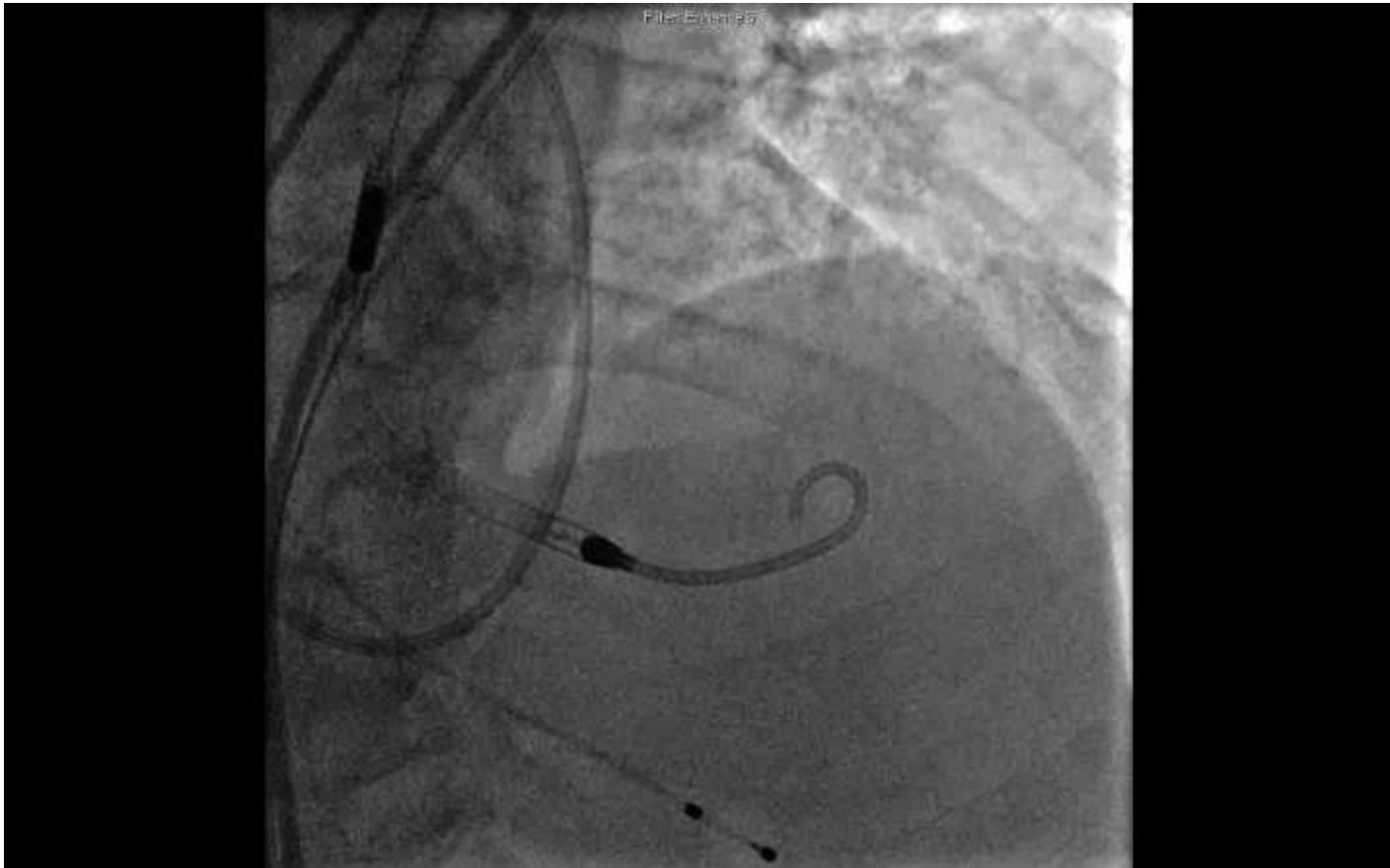
RCA





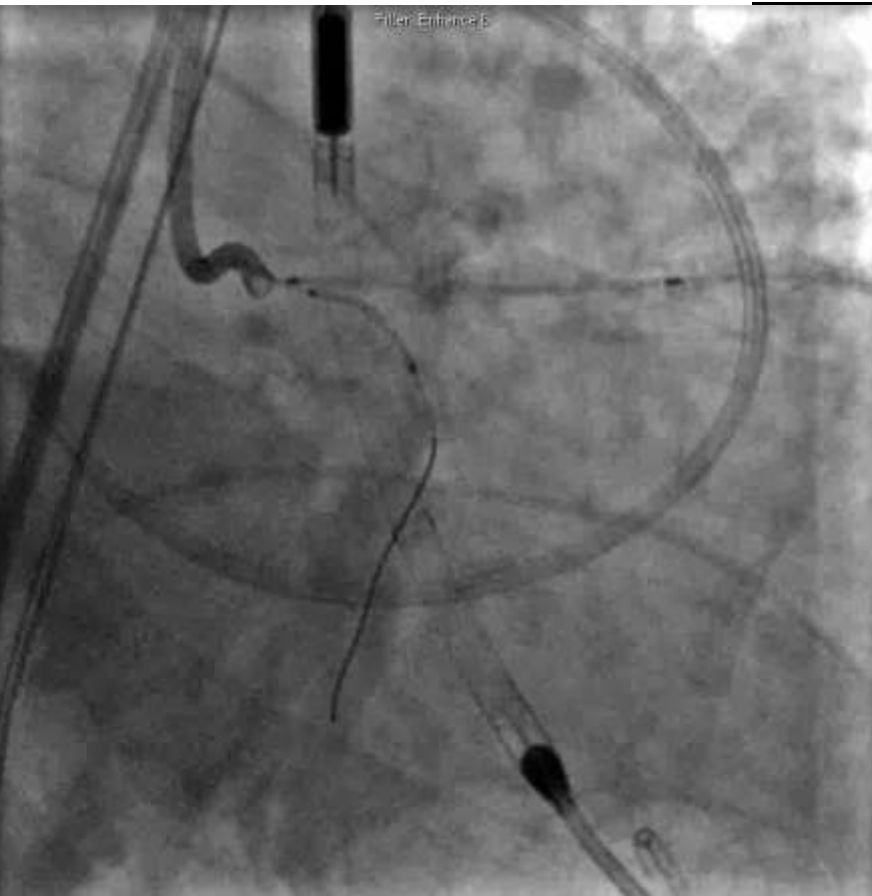
# Distal Left Main Bifurcation *2-Stent Approach*

AP cranial

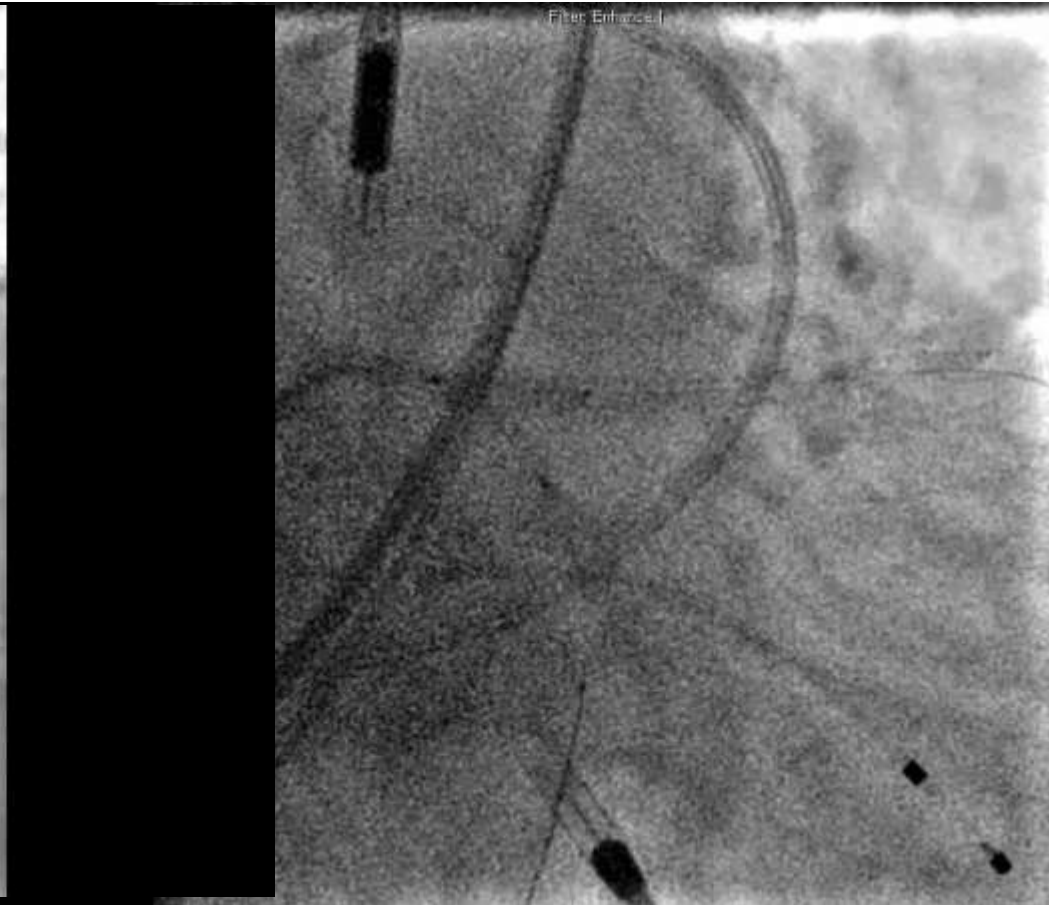


# Distal Left Main Bifurcation *2-Stent Approach*

Crush Technique

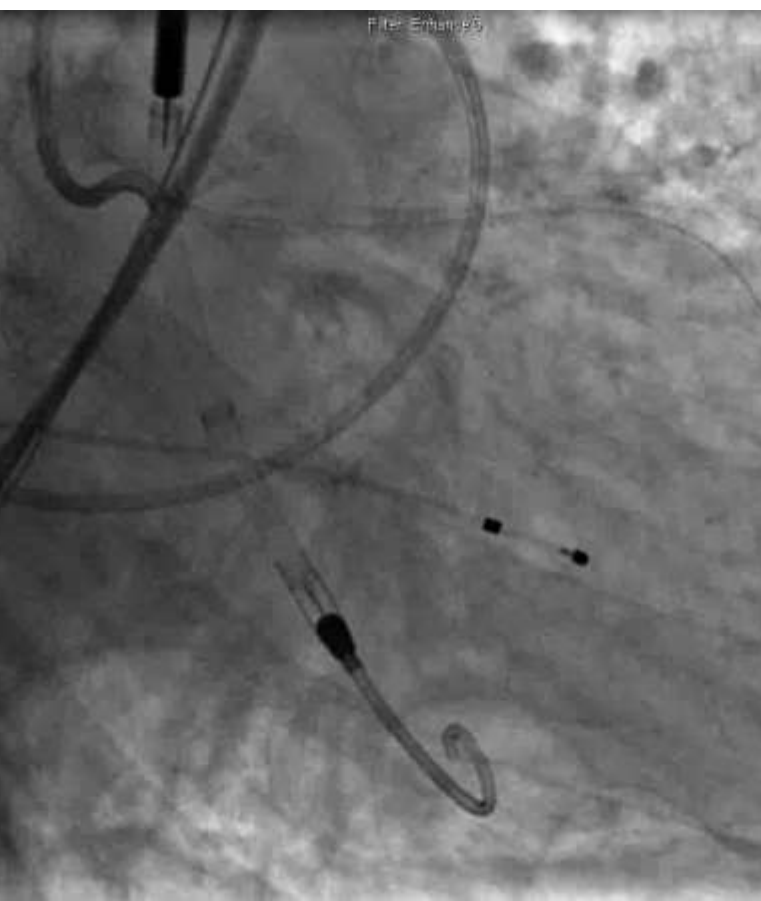


Kissing balloon



# Distal Left Main Bifurcation *2-Stent Approach*

RAO caudal



AP cranial



# Distal Left Main Bifurcation *2-Stent Approach*

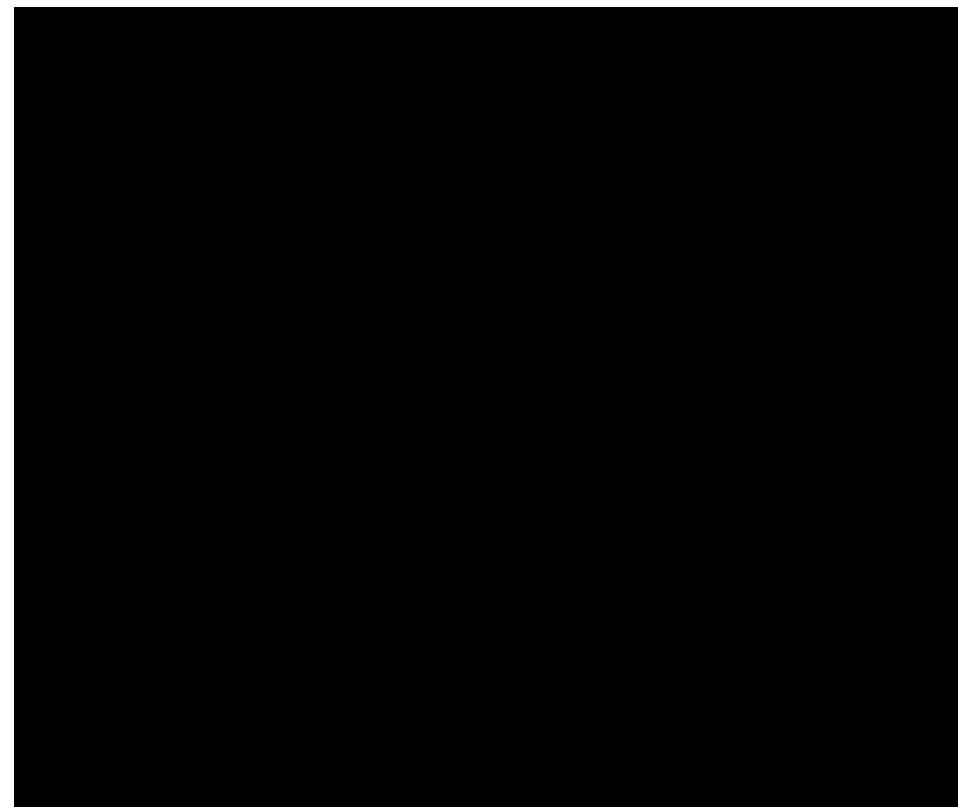
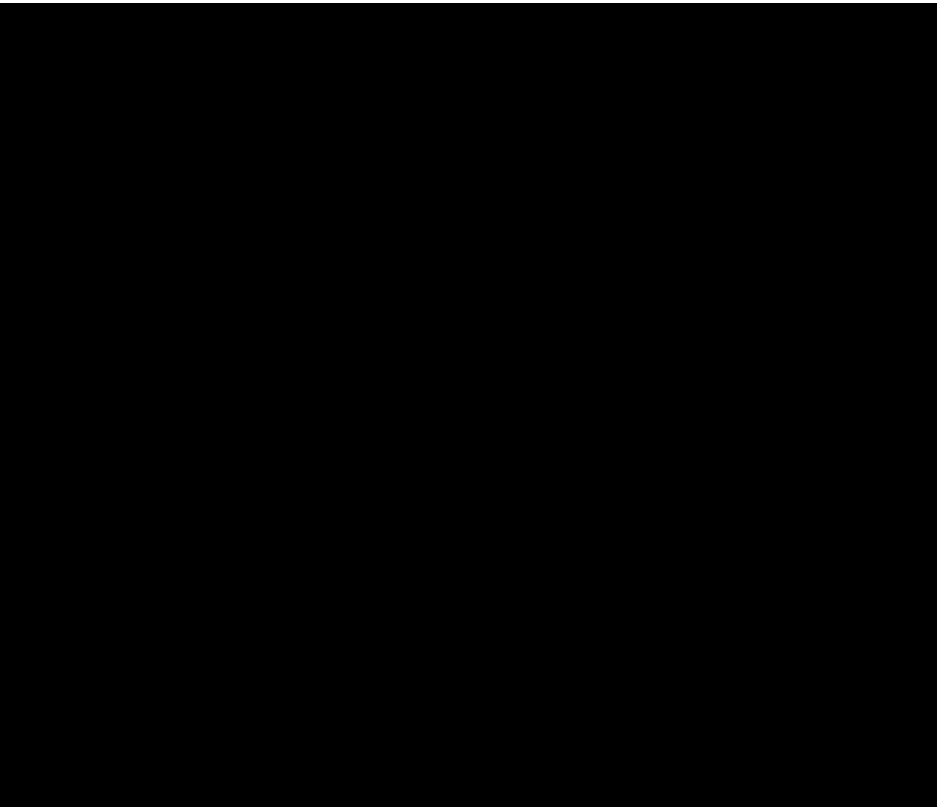
13-year old female s/p heart transplantation with cardiac allograft vasculopathy



# Distal Left Main Bifurcation *2-Stent Approach*

Crush Technique

AP caudal

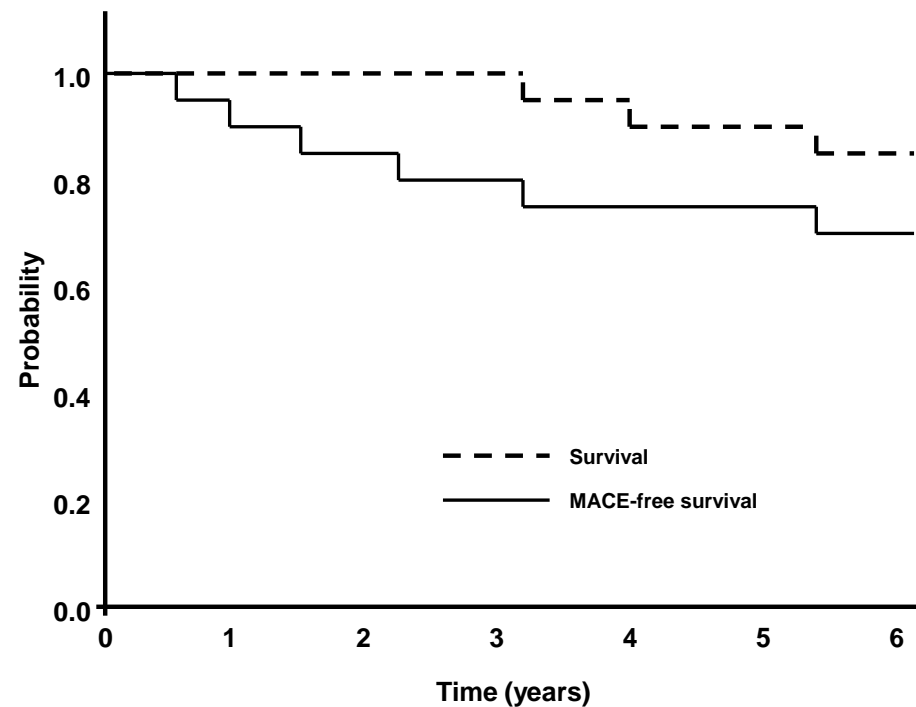


# Kaplan-Meier Analysis of Survival and MACE-free Survival

## Long-Term Outcomes After Percutaneous Coronary Intervention of Left Main Coronary Artery for Treatment of Cardiac Allograft Vasculopathy After Orthotopic Heart Transplantation

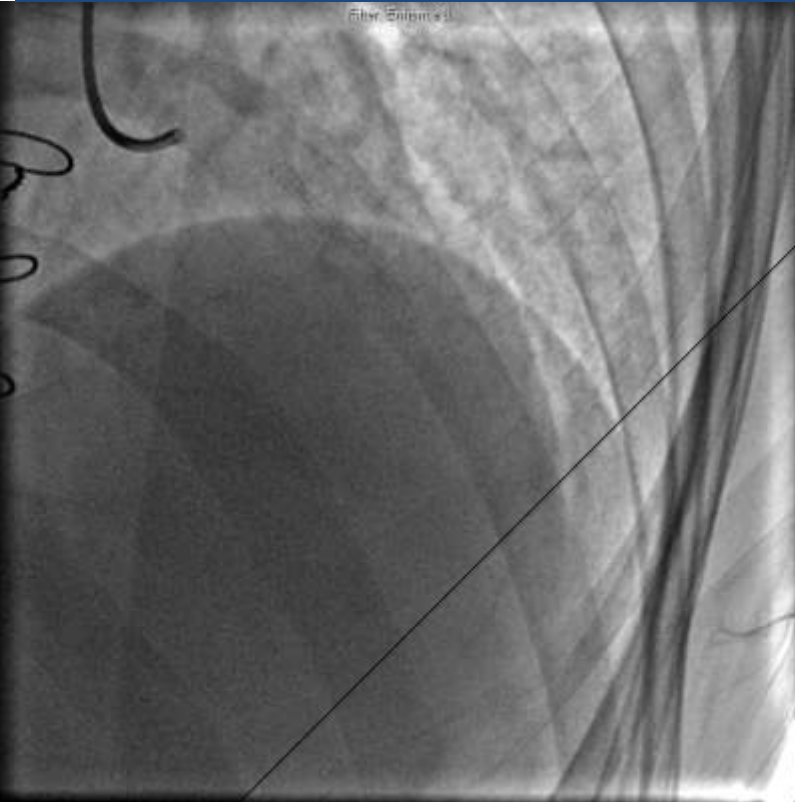
Michael S. Lee, MD<sup>\*</sup>, Tae Yang, MD, William Fearon, MD, Michael Ho, MD, Giuseppe Tarantini, MD, Jola Khakhho, MD, Mark Weston, MD, Ashkan Ehdai, MD, LeRoy Rabbani, MD, and Ajay J. Kirtane, MD

The present study evaluated the safety and efficacy of percutaneous coronary intervention (PCI) of the unprotected left main coronary artery (ULMCA) for the treatment of cardiac allograft vasculopathy (CAV) in consecutive unselected patients with orthotopic heart transplantation (OHT). PCI in patients with OHT with CAV has been associated with greater restenosis rates compared to PCI in patients with native coronary artery disease. A paucity of short- and long-term data is available from patients with OHT who have undergone PCI for ULMCA disease. The present retrospective, multicenter, international registry included 21 patients with OHT and CAV who underwent ULMCA PCI from 1997 to 2009. Angiographic success was achieved in all patients. Drug-eluting stents were used in 14 of the 21 patients. No major adverse cardiac events or repeat OHT occurred within the first 30 days. At a mean follow-up of  $4.9 \pm 3.2$  years, 3 patients (14%) had died, myocardial infarction had occurred in 1 patient (5%), and target lesion revascularization had been required in 4 patients (19%). Follow-up angiography was performed in 16 patients (76%), and restenosis was observed in 4 (19%). No stent thrombosis of the ULMCA was observed. One patient (5%) underwent coronary artery bypass grafting, and 5 patients (24%) underwent repeat OHT. In conclusion, the results of our study have shown ULMCA PCI to be safe and reasonably effective in patients with OHT and represents a viable treatment strategy for CAV in these patients. © 2010 Published by Elsevier Inc. (Am J Cardiol 2010;xxx:xxx)



# Distal Left Main Bifurcation *2-Stent Approach*

AP cranial



RAO caudal



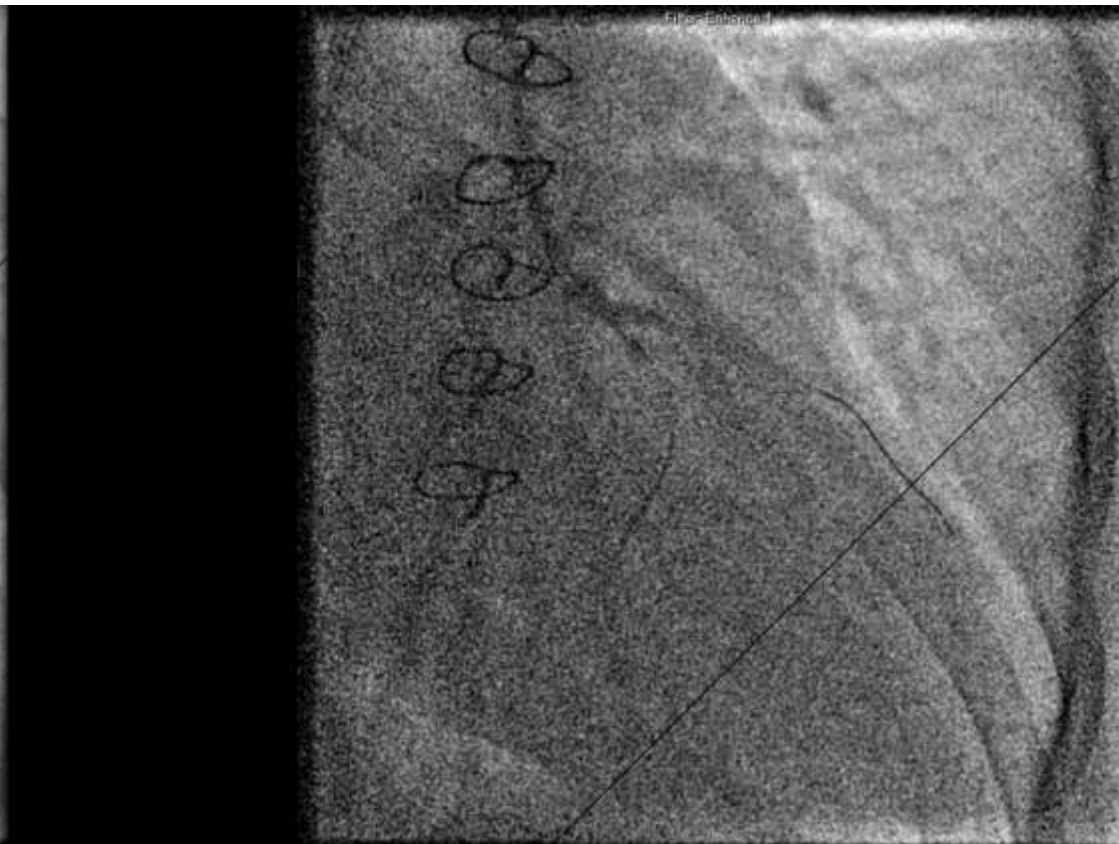
17-year old female s/p heart transplantation with cardiac allograft vasculopathy

# Distal Left Main Bifurcation *2-Stent Approach*

Crush Technique



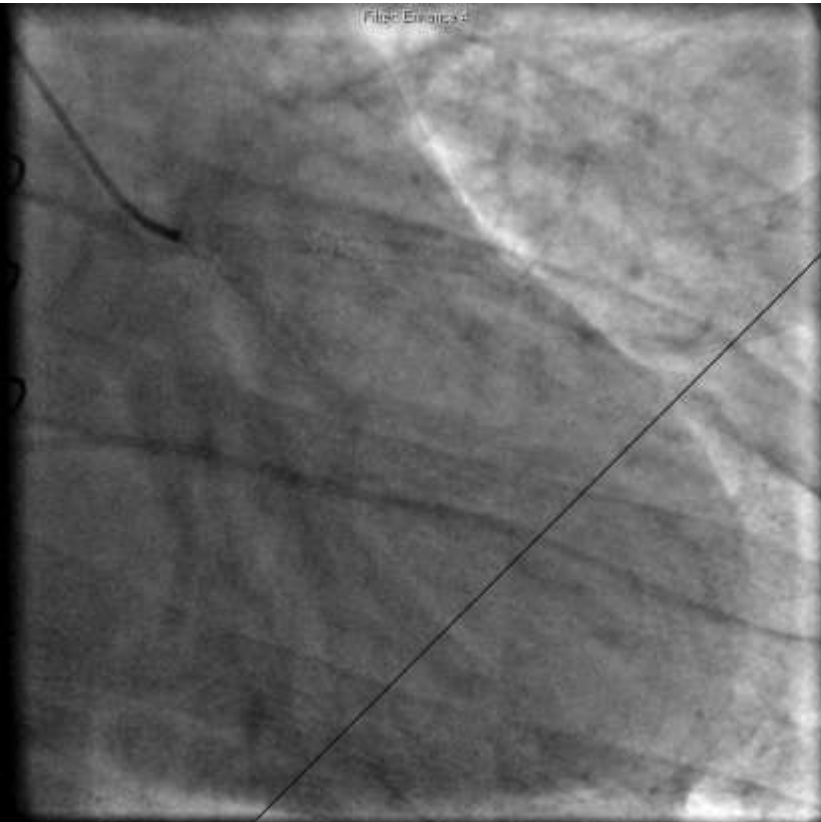
Kissing balloon



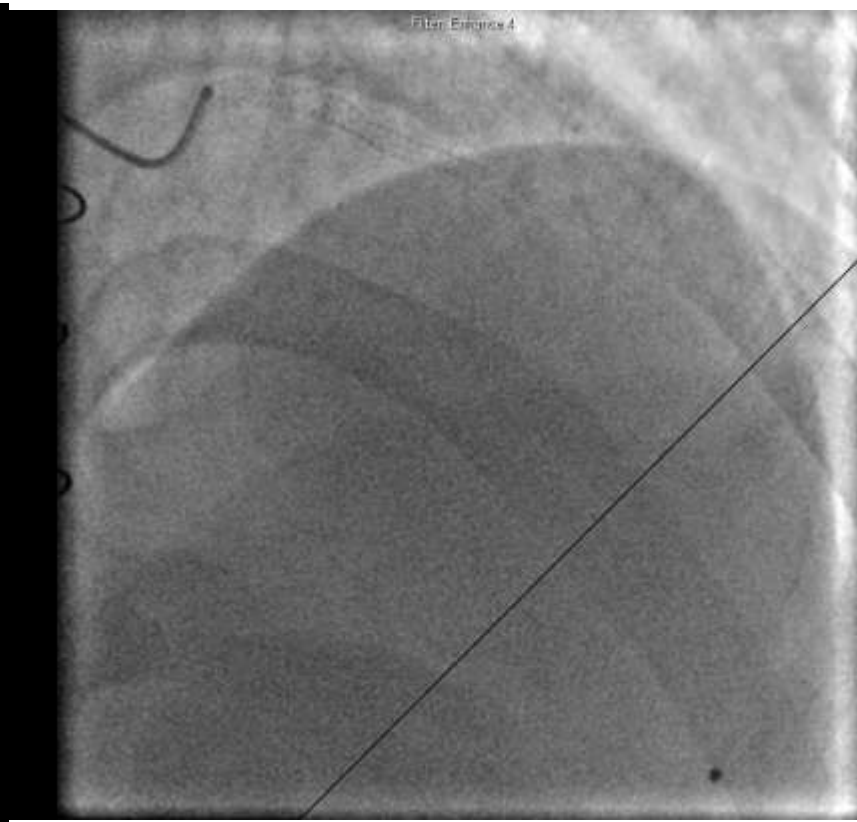


# Distal Left Main Bifurcation *2-Stent Approach*

RAO caudal



12-month Follow-up



# Distal Left Main Bifurcation *Single Stent Approach*

AP cranial



RAO caudal

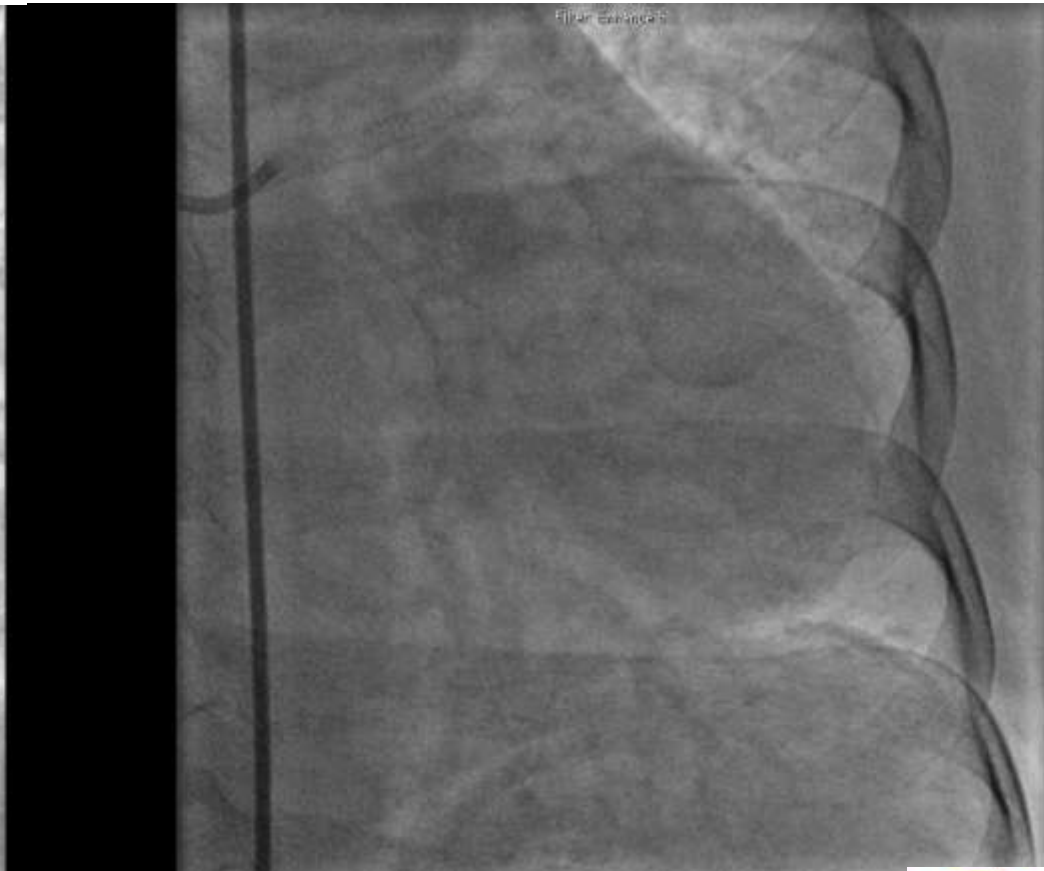


# Distal Left Main Bifurcation *Single Stent Approach*

LAO cranial



RAO cranial



# Distal Left Main Bifurcation *Single Stent Approach*

AP cranial

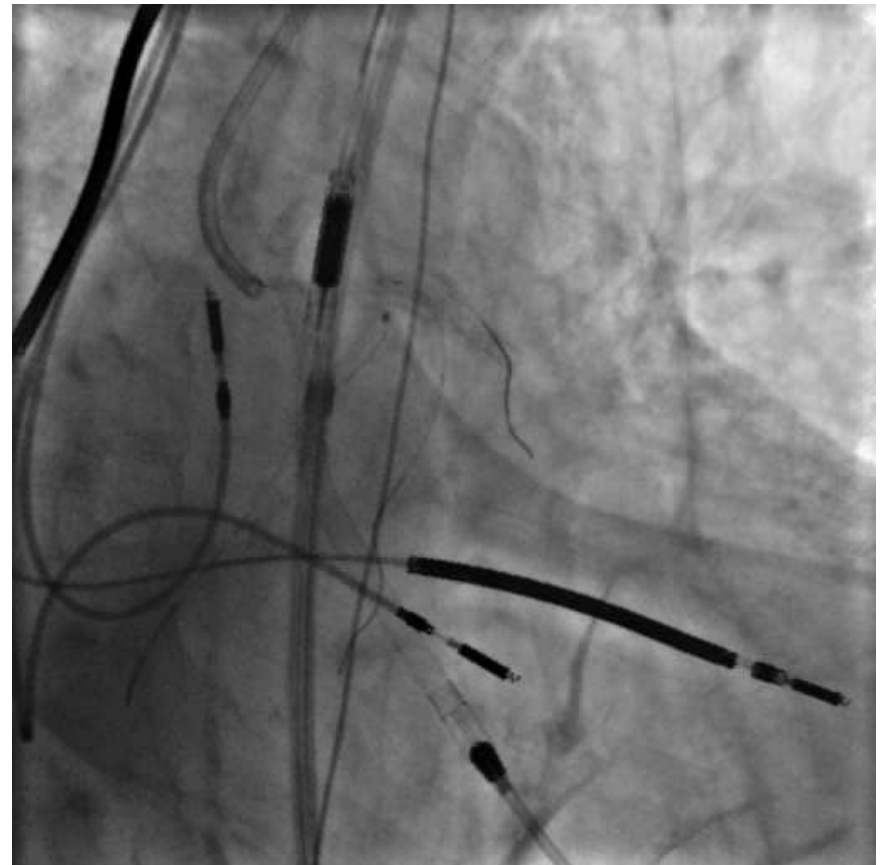


# Distal Left Main Trifurcation

RAO caudal

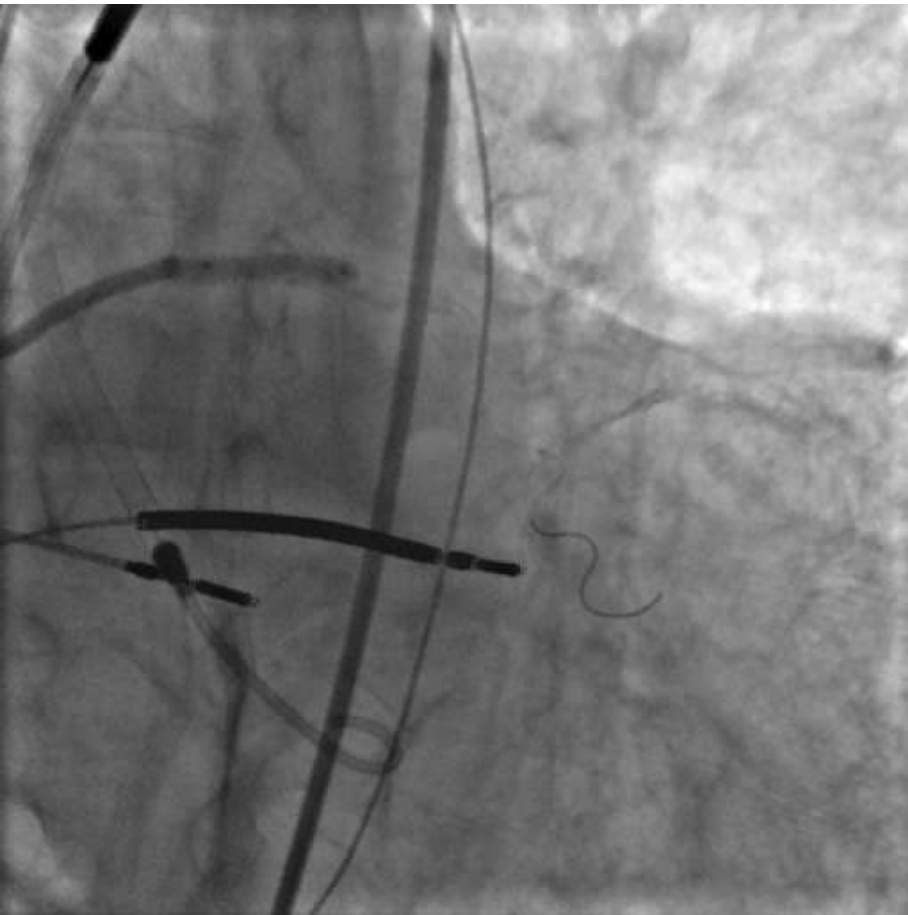


Laser Atherectomy



# Distal Left Main Trifurcation

Crush Technique



Final Kiss



# Distal Left Main Trifurcation

RAO caudal



# Left Main PCI Techniques

## Interventional Rounds

### Percutaneous Coronary Intervention of Unprotected Left Main Coronary Artery Disease: Procedural Strategies and Technical Considerations

Michael S. Lee,<sup>1</sup> MD, FACC, Gregg W. Stone,<sup>2</sup> MD, FACC, Seung-Jung Park,<sup>3</sup> MD, FACC, Paul Teirstein,<sup>4</sup> MD, FACC, Jeffrey Moses,<sup>2</sup> MD, FACC, Antonio Colombo,<sup>5</sup> MD, FACC, and David E. Kandzari,<sup>6\*</sup> MD, FACC

Data have emerged demonstrating the safety and efficacy of percutaneous coronary intervention (PCI) of the unprotected left main (ULM) artery. The 2009 American College of Cardiology/American Heart Association/Society for Cardiovascular Angiography and Interventions focused guidelines for PCI no longer state that ULM PCI is contraindicated in patients with anatomic conditions that are associated with a low risk of procedural complications and clinical conditions that predict an increased risk of adverse surgical outcomes. ULM PCI should be performed by operators with experience in the management of the anatomic complexities of left main and multivessel disease, specifically in issues relating to bifurcation disease, calcification, and hemodynamic support. Patients with ostial or shaft disease have lower risk of restenosis compared with distal bifurcation disease. Drug-eluting stents (DES) should be used whenever possible as they reduce clinical restenosis. Intravascular ultrasound is an integral component of the procedure as it provides accurate assessment of lesion severity and can confirm optimal stent expansion and apposition. Compliance with dual antiplatelet therapy for at least 12 months is essential if DES are used. A collaborative, multidisciplinary approach with a "Heart Team" represented by a cardiac surgeon, interventional cardiologist, and non-invasive cardiologist may optimize patient education and objective decision making when obtaining informed consent. Application of clinical and angiographic variables into risk models facilitates appropriate patient selection. Randomized clinical trials will address unanswered issues and help build consensus between cardiology and surgical societies to inform clinical decision making and optimize the outcomes for patients with ULM coronary artery disease. © 2011 Wiley-Liss, Inc.

**Key words:** left main coronary disease; percutaneous coronary intervention; diagnostic cardiac catheterization

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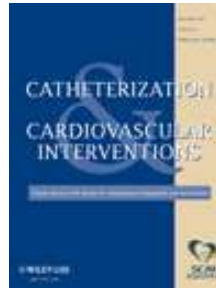
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***Thank You!***

