

Title: The First Reported Case of Rotational Atherectomy in a Radial Artery Bypass Graft

Authors: Kristen N. Brown MD, Gurpreet S. Johal MD, and Deepak Kapoor, MD

Abstract:

Radial artery bypass grafts (RABG) have been increasingly used as an alternative to other traditional grafts for the treatment of coronary artery disease. However, there are no current guidelines for rotational atherectomy (RA) use in RABG. We present the first reported case of a successful percutaneous intervention using RA in a RABG.

History of presentation:

70yo female with a h/o coronary artery disease status post a one vessel coronary artery bypass graft using a radial artery graft to the left anterior descending artery (LAD), hypertension, critical aortic valve stenosis status post mechanical aortic valve, and breast cancer s/p radiation therapy who presented for NSTEMI with CCS class II angina. Echocardiographic images compared to prior studies showed newly depressed EF and new wall motion abnormalities in the LAD territory. Troponin peaked at 6.0. New T-wave inversions in V3-V5 were seen on ECG. The patient was referred for cardiac catheterization. Coronary angiogram revealed 100% CTO of the LAD and 75% stenosis of the proximal and mid-radial bypass graft of the LAD with haziness and calcification. PCI with Rotablator followed by IVUS-guided DES placement with post-dilation (2.5x3.0x2.0) of the radial artery was performed. The patient tolerated the procedure well without any complications. The patient remained chest pain-free for the rest of hospitalization and was discharged home with close follow up.

Discussion:

Current guidelines for the use of rotational atherectomy only include statements outlining saphenous vein graft lesions as a contraindication for its use (1). However, there are no current guidelines or consensus statements to address its use in radial artery bypass grafts (2). With the rise in use of radial artery bypass grafts and risk for calcified stenosis in grafts, a recommendation for how to safely manage these lesion would benefit the cardiovascular field (3).

Conclusion:

This case demonstrates rotational atherectomy as a feasible option for percutaneous intervention of occluded radial artery graft anastomosis. However, further investigation into rotational atherectomy as a potential treatment modality for non-thrombotic stenotic RAG lesions would be recommended.

References:

1. Sameer G, Lap P. (2018) Role of Rotational Atherectomy in Percutaneous Coronary Interventions in the Elderly. Journal of Cardiology and Current Research.
2. Gaudino M, Taggart D, Suma H, et al. (2015) The Choice of Conduits in Coronary Artery Bypass Surgery. JACC.
3. Tatoulis J, Schwann T. (2018) Long term outcomes of radial artery grafting in patients undergoing coronary artery bypass surgery. Annals of Cardiothoracic Surgery.