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Subclavian artery stenosis/thrombosis in a post CABG patient while undergoing dialysis for CKD using left AV fistula, presenting as ST elevation myocardial infarction and acute limb ischemia (Double trouble – Advanced coronary blood flow diversion: A coronary subclavian steal syndrome)

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Background: Coronary subclavian steal syndrome is a rare disorder, mostly unrecognized and under diagnosed , seen in patients developing subclavian artery stenosis after Coronary Artery Bypass Graft using the LIMA –LAD graft diverting blood flow from the native coronary LAD back to the graft LIMA –LAD into the subclavian artery in a retrograde fashion. This disorder causes significant symptoms which is brought about by ischemia coming from the heart, left upper extremity and the brain which was worsened by the ongoing dialysis.

Case Presentation: We describe a case of a 58-year-old male, with history of diabetes mellitus, hypertension, post CABG using LIMA-LAD graft and Mitral valve replacement 6 years ago,who developed Chronic Kidney Disease (CKD) requiring dialysis 3x a week using AV fistula left arm. 1 week prior, he developed grade 3-4/10 chest heaviness, dull in character with associated headache and left arm pain while having dialysis. Hemodialysis (HD) blood flow rate was reduced to decrease the symptoms. Until 30 minutes post HD now with severe intensity 10/10 chest pain radiating to left shoulder with associated left hand numbness/weakness , headache and shortness of breath.

Computed Tomography of the chest with contrast incidentally showed a short segment thrombus in the proximal left subclavian artery at its origin from the aortic arch, resulting in severe luminal stenosis or near total occlusion.

Left heart catheterization with coronary angiography,selective angiogram of the left subclavian and right brachiocephalic artery showed the presence of a 90-95 percent occlusion at the proximal subclavian artery most probably due to a calcific plaque and or thrombus. Attempt was made to pass the guidewire through the occlusion but was unsuccessful. Since the lesion could not be percutaneously reperfused, decision to proceed to catheter directed thrombolysis was made with plans for surgery afterwards. A catheter directed streptokinase 250,000 IU was injected over 30 mins.

Repeat selective angiography of the SA showed calcified left subclavian artery with 10% narrowing at the base with good arterial flow all the way to the left brachial artery. The vertebral artery and LIMA-LAD grafts were patent.

Conclusion: While the use of a LIMA graft with CABG has become widely accepted as the standard of care, left subclavian artery stenosis can compromise anterograde blood flow in the LIMA and if severe, can result in coronary subclavian steal syndrome . It is suggested that if there is a post CABG patient on dialysis, the presence of a supraclavicular bruit and an interarm BP difference of at least 20 mmhg should be routinely done prior to dialysis detect early SA stenosis , especially if during dialysis they have symptoms of chest pain , vertebrobasilar insufficiency and limb ischemia would be valuable. Close follow-up of such patients is of utmost importance, as any future recurrent symptoms could be fatal due to the underlying functionally impaired conduit. Attention should be placed in considering site of HD access in post valve repair and post CABG requiring dialysis , and if possible to perform also subclavian angiography whenever a post CABG patient on HD undergoes coronary angiogram.

Biography

Ryan D. Andal has completed his College at the age of 18 years from De La Salle University Manila with a degree in Medical Physics and postdoctoral studies from University of Santo Tomas , Manila. He trained in internal medicine at the Makati Medical Center and his 3rd year of fellowship in cardiology. He is board certified in Internal Medicine and plans to pursue interventional cardiology after his fellowship training.

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