

Acute coronary syndrome with right coronary artery compression due to pseudoaneurysm of artificial graft vessel

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A 92 year old woman with a history of ascending aortic replacement for acute aortic dissection and TEVAR for aortic arch aneurysm. She suddenly developed bradycardia and shock. A 12-lead ECG revealed complete AV block and ST-segment elevation in leads II, III, and aVF, leading to a diagnosis of acute coronary syndrome. After temporary pacemaker insertion, emergency coronary angiography was performed, revealing complete occlusion in the mid-right coronary artery. Primary PCI was initiated. After a guidewire crossed the lesion, thrombus was not aspirated. Balloon dilatation was performed using a 2.0 mm balloon. IVUS showed minimal plaque within the vessel lumen and revealed that the coronary artery was being externally compressed from two directions. Further expansion was performed using a 3.5 mm balloon, resulting in satisfactory dilatation. Two XIENCE Skypoint drug-eluting stents (4.0/38 mm and 4.0/18 mm) were implanted sequentially, and reperfusion was achieved. Postoperative chest CT revealed a pseudoaneurysm at the anterior anastomotic site of the ascending aortic graft, with the right coronary artery compressed between the pseudoaneurysm and the sternum. Based on these findings, the patient was diagnosed with right coronary compression syndrome. This case represents a rare instance of acute coronary syndrome caused by extrinsic compression of a coronary artery by surrounding anatomical structures. Although coronary compression syndrome is most commonly reported in the left main coronary artery due to compression between the pulmonary artery and the aorta, reports involving the right coronary artery are extremely rare. We present this case with a literature review.