

Sinus arrest following stenting of the right coronary artery

An elderly man was admitted for myocardial infarction. A coronary angiogram showed the culprit lesion to be an 80% stenosis of the proximal right coronary artery (RCA). Angioplasty followed by deployment of a bare metal stent showed good results (figure 1). The following day, cardiac enzymes were elevated. There was also bradycardia of 50 beats per minute. A post-stenting ECG showed sinus arrest with a junctional escape rhythm (figure 2). A review of the angiogram demonstrated occlusion of the sinoatrial node (SAN) artery following deployment of the stent (figure 1). The patient had therefore sustained an infarction of the SAN following occlusion of the SAN artery as a complication of proximal RCA stenting.

The SAN artery arises from the proximal RCA in about 60%.¹ A percutaneous coronary intervention (PCI) involving the RCA may result in infarction of the SAN artery, which can present as sinus arrest.² This is an under-recognised complication that may account for bradycardia following PCI and may require pacing. In this case, no intervention was needed as there was an acceptable junctional escape rhythm and he was asymptomatic.

Most patients with sinus node dysfunction due to acute ischaemia recover and have a good prognosis although a few of them may require permanent pacing. Additionally, SAN ischaemia is associated with atrial arrhythmias in the context of an inferior myocardial infarction.

During PCI of the RCA, care should be taken to avoid compromising the SAN artery. Coronary atherosclerosis involving this artery may account for some cases of sinus node dysfunction in the elderly.

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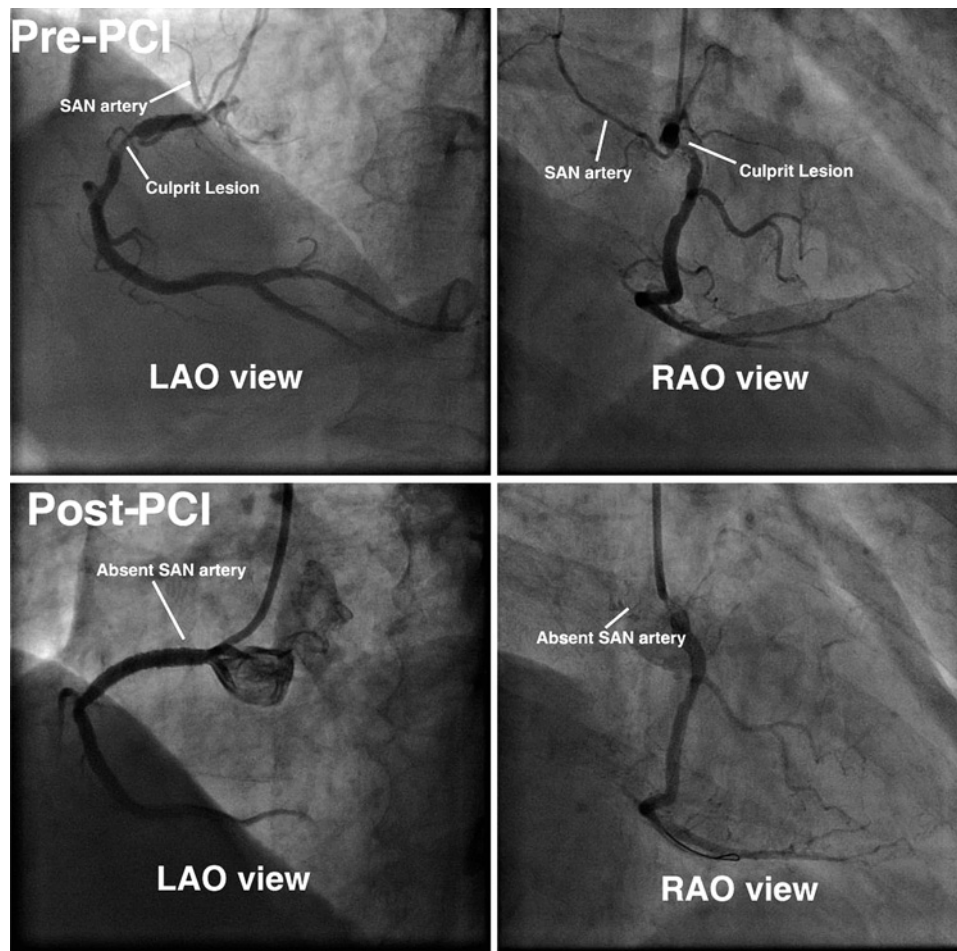


Figure 1 Angiographic images of the right coronary artery before (top) and after (bottom) stenting. LAO, left anterior oblique; PCI, percutaneous coronary intervention; RAO, right anterior oblique; SAN, sinoatrial node.

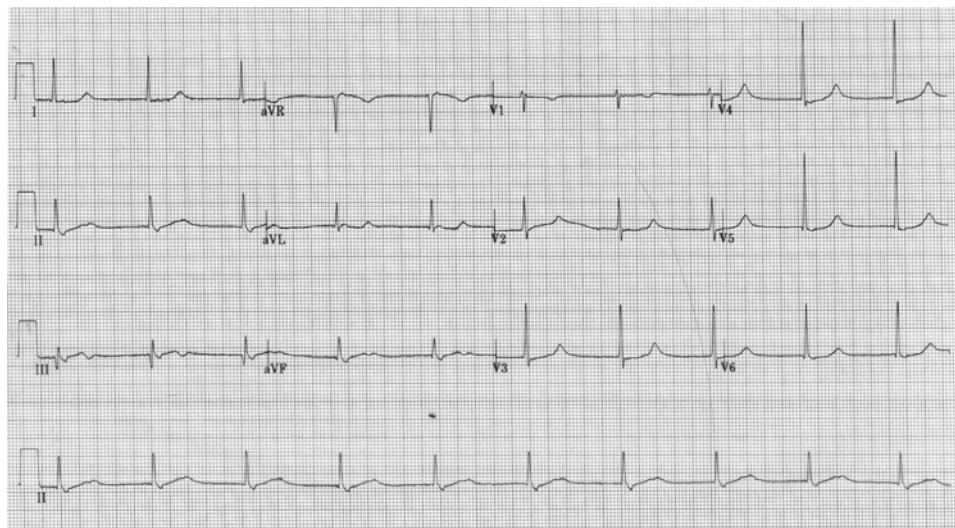


Figure 2 A post-stenting ECG showing sinus arrest with a junctional escape rhythm.