

Three-Vessel Robotic-Assisted PCI With Total Occlusion of the RCA

Images courtesy University of Missouri.

This case illustrates how robotic-assisted percutaneous coronary intervention (PCI) can be leveraged in a complex case involving multilevel arterial occlusive disease.

A 70-year-old male was diagnosed with three-vessel disease:

- 90% occluded left anterior descending artery (LAD);
- 70% occluded left circumflex artery (LCx); and
- 100% occluded right coronary artery (RCA) (Figures 1A-1C).

After connecting the guide catheter to the arm of the vascular robotic system (CorPath GRX from Siemens Healthineers), the targeted lesion was

crossed by rotating the guidewire automatically upon retraction of the joystick. Intravascular ultrasound-guided PCI was performed to the LAD and LCx at the stent overlap (Figure 1D) using real-time stent positioning verification software (ClearStent Live from Siemens Healthineers). Staged PCI to the totally occluded RCA was performed robotically by again using built-in software automation to rotate the guidewire following joystick retraction to redirect the guidewire tip (Figure 1E), as well as to oscillate the guidewire as it advanced through the vessel (Figure 1F). During the entire case, the primary operator of the vascular robotic system remained in the control room while the secondary operator remained at the patient's bedside. ■

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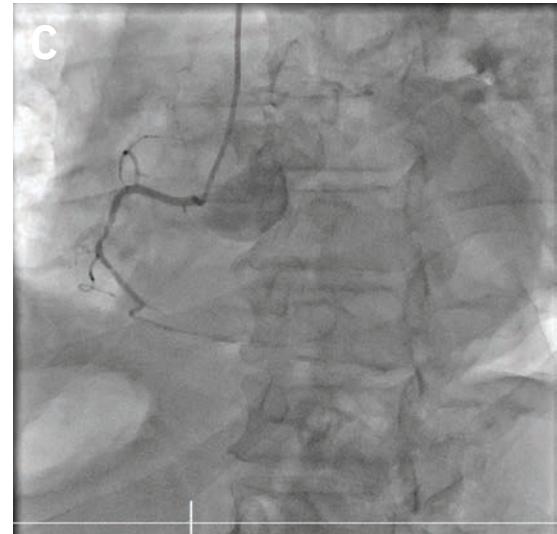
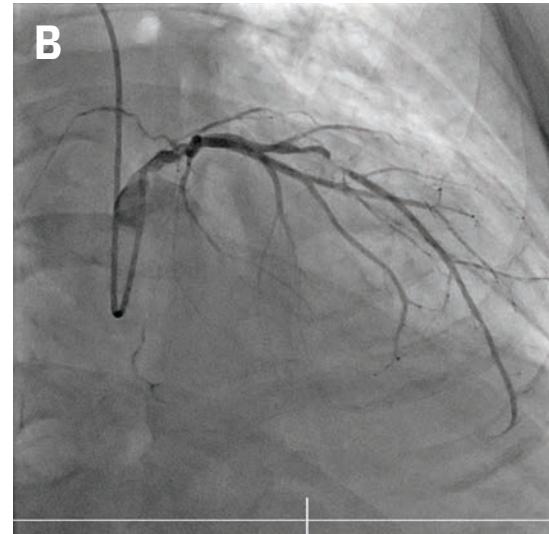
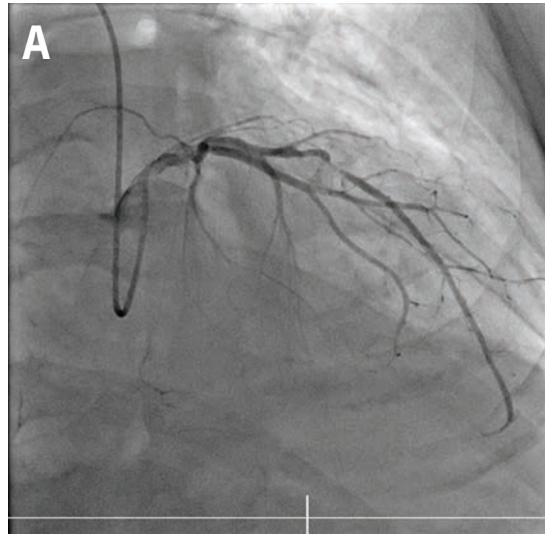


Figure 1A-1C. (A) 90% occluded left anterior descending (LAD), (B) 70% occluded left circumflex (LCx), and (C) 100% occluded right coronary artery (RCA).

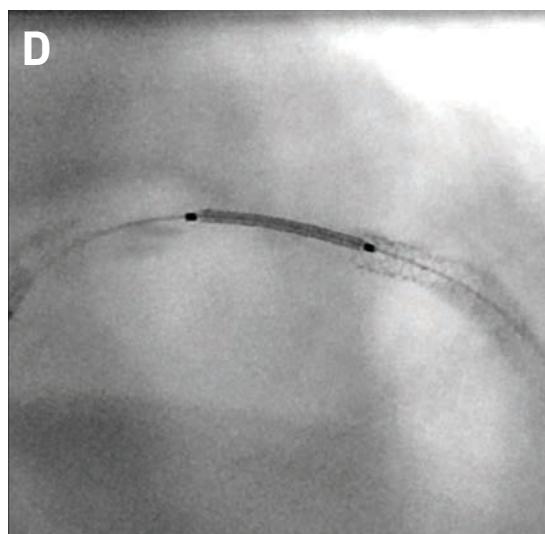


Figure 1D. Ultrasound-guided percutaneous coronary intervention (PCI) to occluded LAD and LCx.

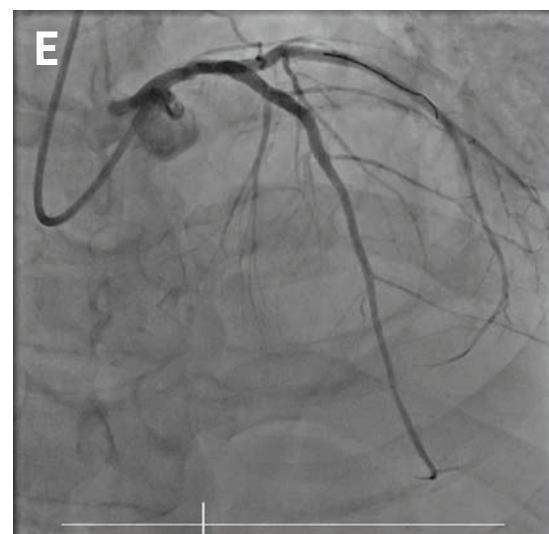


Figure 1E. Guidewire rotation during PCI to occluded RCA.

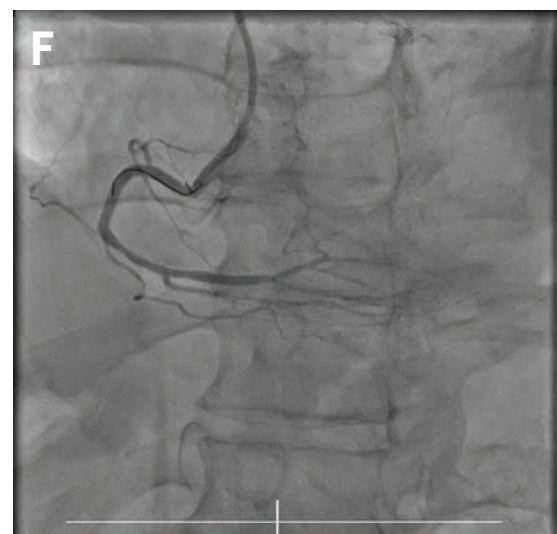


Figure 1F. Guidewire oscillation during PCI to occluded RCA.