Single vascular access in coronary intervention protected with a ventricular mechanical assist device

Acceso vascular único en intervencionismo coronario protegido con dispositivo de asistencia mecánica ventricular

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The Impella CP mechanical assist device (Abiomed, Danvers, Massachusetts, USA) is the most widely used for hemodynamic support in high-risk coronary percutaneous interventionism. If avoiding an additional radial or femoral access is desired, it is possible to use the assist device 14-F introducer sheath as single vascular access. This introducer sheath admits the 9-F assistive device's body (Fig. 1A, white catheter) and a 7-F hydrophilic introducer sheath (Fig. 1A, green catheter). After implanting Impella CP as usual, the hemostatic valve is punctured on the upper quadrants (Fig. 1B,*) and the assist catheter is avoided (Fig. 1B, #) with an 18-G venous cannula that allows the passage of a 0.035" guidewire (Fig. 1C). The introducer sheath is then advanced over the guidewire, which makes it possible for interventionism to be performed with conventional 6 or 7-F coronary catheters. At the end of the procedure, the introducer sheath can be removed without bleeding (Fig. 1D), and the assistive device can be removed or maintained, as appropriate. Although other introducer sheaths may be used, the 45-cm hydrophilic introducer sheath is highly recommendable for reducing friction and interaction with

assist catheter. The simple technique of the 14-F introducer sheath valve puncture, which Jason Wollmuth¹ originally described with a 21 G cannula, is shown step by step in the supplementary video.

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Conflicts of interest

None.

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Figure 1. Single vascular access in coronary interventionism protected with ventricular mechanical assist device. **A:** Impella catheter (white, 9 F) and introducer sheath (green, 7 F) relative position. **B:** Diagram showing hemostatic valve puncture areas (*). **C:** Puncture with 18-G venous cannula. **D:** Competent valve after introducer sheath removal.

References

1. Wollmuth J, Korngold E, Croce K, Pinto DS. The single-access for hi-risk PCI (SHiP) technique. *Catheter Cardiovasc Interv.* 2020;96(1):114-116.