




“Piggyback Pigtails”: Simplifying secondary transradial access for TAVR

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Abstract

Minimalist approaches have evolved for TAVR over the last years with impact on in-hospital stay and patient safety. As part of this concept, transradial secondary arterial access is capable of reducing vascular and bleeding complications. Yet, steering of the marker pigtail catheter in the descending aorta might by fluoroscopic imaging sometimes be challenging. In our manuscript, we present a very simple “piggyback” technique, simplifying management of transradial secondary access in transfemoral TAVR.

KEYWORDS

access site complications, aortic stenosis, femoral access, multidisciplinary heart team, TAVI

Approximately a fourth of vascular complications following TAVR is associated to the secondary access when carried out via contralateral femoral artery.¹ Transradial approach for secondary access reduces vascular and bleeding complications.^{2,3} Yet, advancing the marker catheter in the descending aorta for final angiography as well as possible intervention in case of primary access complications might sometimes be challenging—especially in patients with a kinked anatomy. Here, we present a very simple “piggyback” technique for steering the catheter via right-radial access in the descending aorta in TAVR (for details, see Figure 1 and online supplemental video 1). The basic principle consists of an “embracing” or “hugging” maneuver of two pigtail catheters; one from the secondary radial access site and the other advanced via the primary access site (after exchange of the TAVR-implantation wire) before removal of the device’s sheath. The “hugging” is performed in the ascending aorta via gentle steering and/or rotation of both pigtail catheters, while slightly pulling the secondary access

site’s pigtail (see A, B). Then, the secondary access site’s catheter can easily be pulled down around the aortic arch towards the descending aorta with the catheter of the primary access site to allow final femoral angiography, which will be performed after removing the TAVR-sheath (C, D). This maneuver facilitates rapid and easy final angiography even in difficult anatomies and even works in an “inversed” way if needed (see supplemental video 2: retrograde advancement of a pigtail-catheter through a large aneurysm in a coarctation of the abdominal aorta via “retrograde” hugging maneuver via secondary right-radial access) and might thus simplify transradial secondary access handling in TAVR.

CONFLICT OF INTEREST STATEMENT

Alexander R. Tamm: proctoring honoraria from JenaValve. Ralph Stephan von Bardeleben: consultancy and lecture honoraria from Abbott Structural Heart, Boehringer Ingelheim, Cardiac Dimensions, Edwards Lifesciences, GE Health Systems and Philips Healthcare. The other authors declare no conflicts of interest.

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Abbreviation: TAVR, transcatheter aortic valve replacement.

Majid Ahoopai and Martin Geyer contributed equally and should both be considered as first authors.

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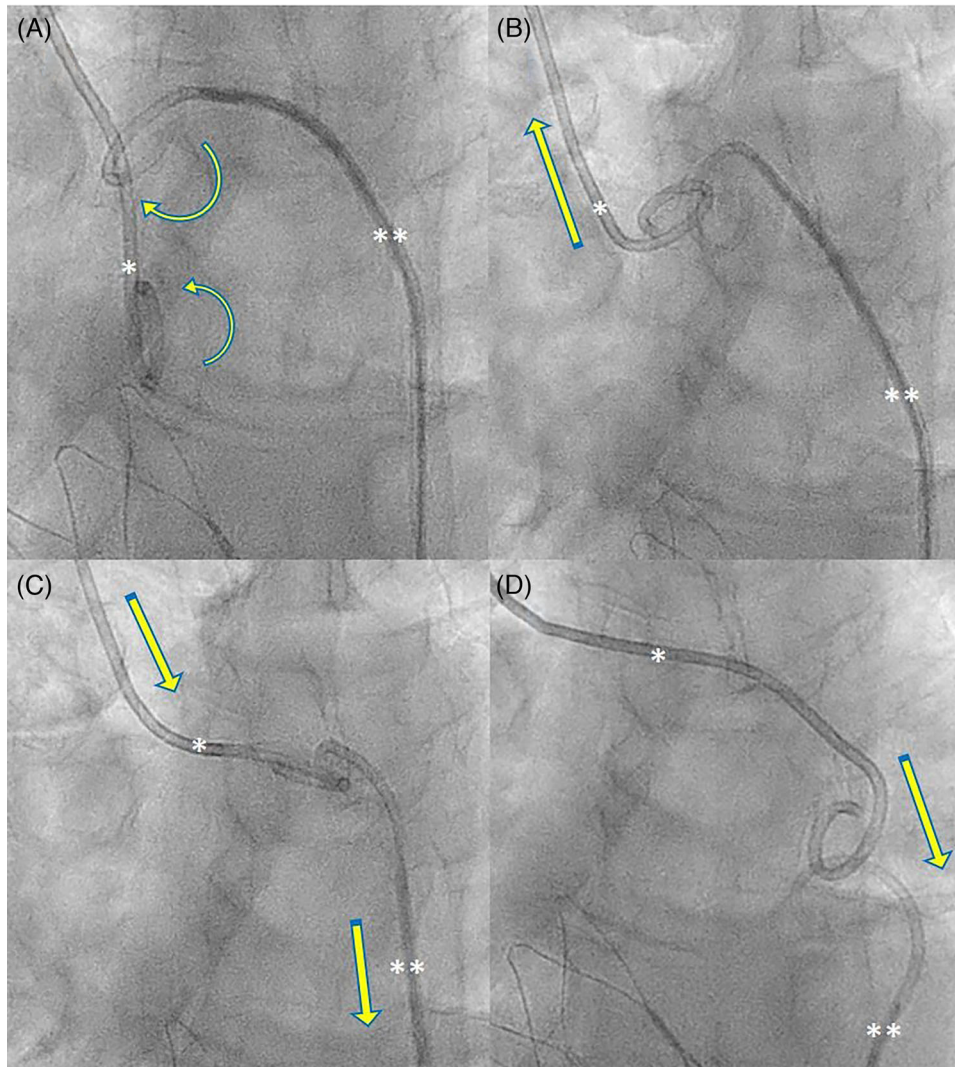


FIGURE 1 “Piggyback pigtail maneuver” to ease final femoral angiography after TAVR-implantation. (A) After TAVR-implantation and just before removing the transfemoral sheath, exchange the TAVR implantation wire for a transfemoral pigtail catheter (**), which can easily “embrace” the pigtail catheter introduced via the secondary transradial (here: right-sided) access (*). Slight rotation of both catheters might ease this step. (B) Slightly pull the transradial pigtail catheter to allow “cuddling” of both catheters. (C) Gently pull the transfemoral catheter, while—perhaps—slightly pushing the transradial pigtail. (D) This way, the transradial pigtail catheter can be easily migrated around the aortic arch towards the descending aorta to allow final angiography of the femoral access site after removal of the TAVR sheath.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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