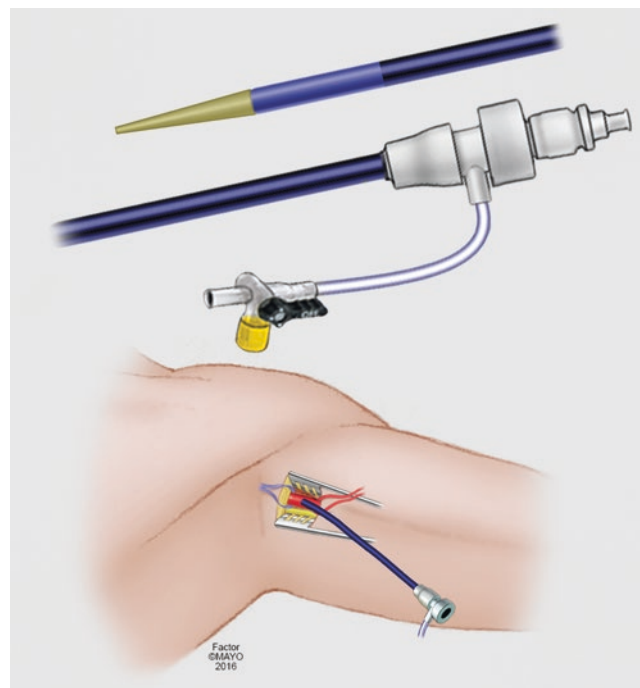


**Fig. 14.5** AlSeal sheath with size ranging from 14- to 26-French and comes in two lengths: 14 cm and 30 cm. The sheath has one dynamic hemostatic valve that allows for complete hemostasis whether a wire or another sheath is introduced through it. Additionally, its multiple access converter is able to convert one insertion into the main sheath into multiple access (up to 4) ports making it extremely attractive for fenestrated stent graft procedures. By permission of Mayo Foundation for Medical Education and Research. All rights reserved

have four silicon valve leaflets that can be punctured on each quadrant for introduction of smaller sheaths. It is important to note that the valve of the purple 16 or 18Fr sheaths is not adequate to maintain hemostasis. In general, the 20-Fr check-Flo sheath is optimal for 2-vessel and a 22-Fr sheath for 3-vessel catheterization. A major disadvantage of this setup is the constant dripping of blood that, over the course of a long case, can become significant. As such, the use of a cell saver is recommended especially in long cases. Other alternative is to use a DrySeal sheath (Gore, Flagstaff, AZ, USA; Fig. 14.4b), but the attrition of one sheath over the other can be bothersome during exchanges. This can be avoided by using a 9Fr pinnacle sheath first, and then introducing the 7Fr Ansel sheath into the pinnacle, instead of directly into the DrySeal valve. The DrySeal sheath comes in sizes ranging from 12- to 26-Fr and is 26 cm long. It contains a dilator and a hemostatic valve that can be inflated with a 2.5 ml valve inflation syringe. Most recently, the AlSeal (Alseal, Inc., Besancon, France) sheath was designed by Claudio Mialle especially for fenestrated cases (Fig. 14.5).



**Fig. 14.6** Ansel Sheaths (Cook, Inc. IN, USA) with hyperflex dilators are useful for visceral artery stenting during fenestrated stent graft implantation. In tortuous arch, the 12-Fr, 55 cm, Ansel sheath can be inserted into the brachial artery and serve as a conduit to for stenting of visceral arteries from above. By permission of Mayo Foundation for Medical Education and Research. All rights reserved

This has been approved by the Food and Drug administration (FDA) in February 2014 and combines the function of the Check-Flo and DrySeal sheaths.

Branch vessel stenting requires hydrophilic braided sheaths that are kink-resistant. This is best done using 7-Fr Ansel long sheaths (Cook, Inc., Bloomington, IN, USA) with flexible dilator (Fig. 14.6) if femoral approach, or 7–9Fr Raabe of Flexor sheaths (Cook Medical, Bloomington, IN, USA) if brachial approach. The Ansel sheath is well suited for stenting visceral arteries via femoral access. A 12 French 45-cm Ansel sheath is available with soft dilator for brachial access during thoracoabdominal repair or femoral access during iliac branch repair. For difficult visceral artery catheterization and stenting, we find the 7-Fr Destino™ Twist steerable sheath to be most useful (Oscor Inc., Palm Harbor, FL, USA; Fig. 14.7). The sheath handle can be twisted and the tip guided toward the previously marked visceral artery.

Selective stenting via the brachial approach requires 70-cm or 90-cm sheaths that are hydrophilic and braided. Our preference has been to use a 7 or 8-French 90 cm Raabe sheath (Cook Medical, Inc., IN, USA) depending on the diameter of the bridging stent. A 9-Fr 70-cm Flexor sheath may be needed for vessels stented with self-expandable