Urol Radiol 6:227–228 (1984)

Technical Notes

A Technique for Conversion from Small (0.46-mm) to Large (0.97-mm) Guidewires for Drainage Procedures

Simon D. Braun, Arl V. Moore, Jr., G. Andrew Miller, Kerry Ford, and N. Reed Dunnick
Department of Radiology, Duke University Medical Center, Durham, North Carolina, USA

In appropriately selected patients, percutaneous drainage procedures provide an alternative to surgical drainage of the biliary tree and upper urinary tract as well as abnormal fluid collections in almost any location. When the structure to be drained is large or dilated, drainage may be accomplished with greater ease. Entry into that structure may be obtained with an 18-gauge needle which will accommodate a large (0.97-mm) guidewire for subsequent catheter placement. This often follows opacification of the structure to be drained by initial placement of a 21- or 22-gauge "skinny" needle.

The Cope needle/catheter Introduction System [1] uses a 21-gauge needle and 0.46-mm guidewire for initial entry and obviates the need for a second puncture with a larger needle in large structures. It is also particularly useful for draining small structures (e.g., normal-sized collecting systems in patients undergoing percutaneous renal calculus extraction). These fine needles provide an extra margin of safety over larger needles if adjacent tissues are inadvertently punctured.

It is occasionally difficult, however, to convert a small needle and guidewire to the larger catheters required for adequate drainage. We have found that the 0.97-mm 3-mm "J" guidewire provided with the Cope system will not consistently exit the sideport of the 6.3 Fr dilator, initially introduced with a metal-stiffening cannula over the 0.46-mm Mandril ("coat hanger") guidewire. Although the manufacturer has altered the 6.3 Fr dilator to improve its performance, the problem has not been entirely erased. We have remedied this problem with a specially ordered, commercially available Desilets–Hoffman teflon sheath system (Cook Inc., Bloomington, IN; Order numbers by component: JCD-4.0–25-25 Set System; VSVSS-4.0 21 Set System).

This system consists of a radiopaque 21-cm 6 Fr

Address reprint requests to: Simon D. Braun, M.D., Department of Radiology, P.O. Box 3808, Duke University Medical Center, Durham, NC 27710, USA

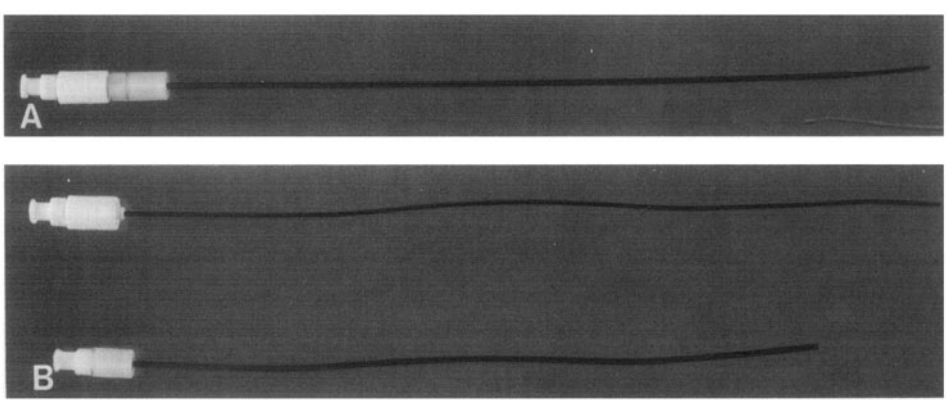

Fig. 1. **A** 4/6 Desilets–Hoffman teflon sheath system coaxially assembled. **B** 4/6 Desilets–Hoffman teflon sheath system with dilators separated

dilator mounted coaxially on a radiopaque 25-cm 4.0 Fr dilator with a 0.63-mm tapered tip (Fig. 1). This system easily follows a 0.46-mm "coat hanger" guidewire despite the loose fit at the dilator tip. Once the 4/6 system is in place, the 0.46-mm guidewire and 4.0 Fr dilator are removed. The 6 Fr dilator left in place easily accommodates a 0.97-mm guidewire for completion of the procedure. This system may be introduced primarily unless the tissues through which it is to be passed are particularly resistant. In those cases, predilation with the 0.46-mm tapered 6.3 Fr dilator allows successful placement of the 4/6 system.

We have used this system for 20 percutaneous nephrostomies, 6 biliary drainages, and 3 abscess drainage procedures when problems with the Cope system have arisen. This system was successfully used in each case and has not resulted in any complications. We recommend this system to those using the Cope system who have encountered the same problem we have.

References

1. Cope C: Conversion from small (0.018″) to large (0.038″) guidewires in percutaneous drainage procedures. *AJR 138:* 170–171, 1982