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Aberrant Insertion of a Pulmonary Artery Catheter Through an Iatrogenic Defect in an Introducer Sheath

To the Editor:—The pulmonary artery catheter (PAC) introducer kit represents a system for introducing a PAC into the central circulation. Essential components of every kit using the "Seldinger over the wire" technique include a guide wire, a dilator, and an introducer sheath.

Recently, upon simultaneous removal of a PAC and introducer sheath from its right subclavian insertion site, we were surprised by the configuration depicted in figure 1. Apparently, the clinician was initially successful in locating the right subclavian vein and advancing the Seldinger guide wire. Next, the Cordis introducer/dilator combination (Cordis 8.0 French percutaneous entry tray Product No. 501-638B, Cordis Corp., Miami, FL) was inserted over the guide wire advancing the dilator along the preexisting guide wire. However, as the introducer/dilator combination was advanced, the dilator (with the internal wire inside) was pushed backward and out the

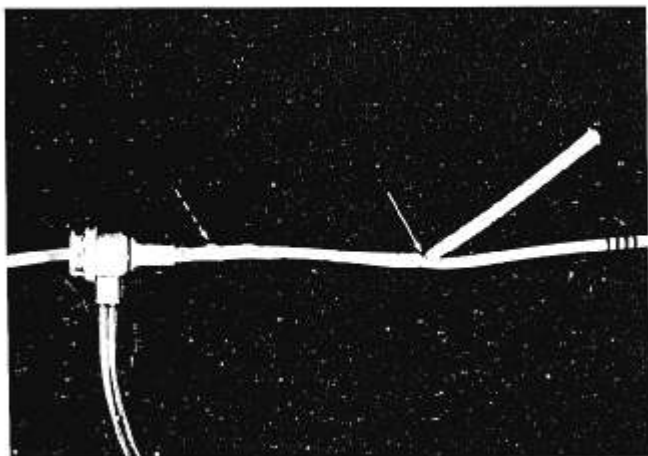


FIG. 1. PAC is shown as it exits from the central section (solid arrow) of the Cordis Corporation introducer sheath. Notice also the ripples (dashed arrow) in the proximal section of the introducer sheath, as well as the burring of the very tip of the introducer.

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hub of the introducer sheath. Next, the clinician, noticing that the dilator and Seldinger wire had moved back from the introducer hub, re-advanced the dilator/guide wire complex back to its usual position at the hub of the PAC introducer sheath. Unfortunately, this re-advancement resulted in central perforation (fig. 1, solid arrow) of the introducer, followed by change recannulation of the right subclavian vein. This was probably confirmed by easy advancement of the guide wire and the back flow of dark venous blood around the wire as it exited the hub of the dilator. The clinician then slid the white introducer sheath over the dilator into the subclavian vein. Evidence of the force applied to the introducer is apparent from the ripples (fig. 1, dashed arrow) most apparent at the proximal hub of the introducer sheath.

With this letter, we hope to make clinicians aware of the sharpness of some dilator tips and the risk of unusual perforation of the introducer sheath when attempting PAC vein cannulation. We now feel that moderate bluntness of the dilator and greater flexibility of the introducer sheath are important criteria in the evaluation of PAC introducer kits. Furthermore, some mechanism that secures the dilator/wire combination within the introducer sheath (similar to the Tuohy-Borst adaptor now part of some introducer sheaths) would help prevent backward displacement of the dilator as it attempts to follow the wire into the vein.

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Epidural Anesthesia in Children

To the Editor:—Epidural anesthesia, as reported by Ecoffey *et al.*,¹ is a suitable procedure for operative and postoperative pain relief in children. We have used this technique for years,^{2,3} and think that 18-gauge needles

may be safely used in children weighing more than 20 kg. In smaller children, and especially in infants, we use a 20 (3/64)-gauge Potts-Cournand® needle (Becton-Dickinson™, U. S. A.). This short-bevel needle allows a