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A New Device for Percutaneous Central Venous Catheterization

To the Editor:—Percutaneous venipuncture of the internal jugular vein (IJV) and following insertion of a wire guide are commonly employed maneuvers for pulmonary artery catheterization. Various methods for the location and venipuncture of the IJV have been reported.^{1,2} However, even if the venipuncture is successfully done with a conventional syringe, occasionally dislocation of the needle tip from the lumen of the vein occurs during detachment of a syringe from the needle which causes failure in the insertion of a wire guide. To avoid this trouble, a new device has been in use at our institution.

The Arrow Safety Syringe (Arrow International, Inc., Reading, PA) consists of a 20-G metal needle, 5-ml syringe, and plunger. The syringe has an internal metal cannula that starts within the hub of the needle and extends into the barrel of the syringe through the center of the plunger. The cannula also has a side hole through which blood is aspirated into the barrel when the plunger is withdrawn. The plunger has a central channel that slides over the internal metal channel. This central channel has a one-way valve through which a 0.64-mm diameter and 45-cm length spring wire guide can be inserted (fig. 1). In our institution, under ultrasonographic guidance and under sterile precautions, the IJV is directly punctured with this device. After the confirmation of puncture by aspiration of dark blood, the plunger is reinserted to seal the side bore of an internal metal cannula and a wire guide is inserted through the central channel of the plunger without detaching the syringe from the needle. The remainder of the procedure for pulmonary artery catheterization is as usual. Since the introduction of this device, we have never experienced the failure in the insertion of a wire guide after the venipuncture of the IJV.

This device will be useful not only in pulmonary artery catheterization *via* the IJV but also in every central venous catheterization using the catheter-over-guide wire technique.³

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FIG. 1. The Arrow Safety Syringe. A spring wire (J-wire) is inserted through the central channel of the plunger and protrudes beyond the tip of a metal needle.

