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A Technique for Avoiding Inadvertent Intraarterial Placement of Large Bore Catheters

To the Editor:—Use of the Seldinger technique for central venous cannulation is widely accepted. Reports of catastrophic complications associated with the unintentional intraarterial introduction of large-gauge pulmonary artery catheter sheath introducers or CVP catheters have prompted additional efforts to insure that an artery has not been entered prior to the insertion of the introducer or catheter. When inspection of blood color and pulsation do not clearly indicate intraarterial placement, transduction of the pressure tracing from the smaller identifying catheter is advocated to determine extra arterial placement prior to insertion of the Seldinger wire and sheath introducer.¹ This latter technique requires the immediate availability of electronic pressure monitoring equipment and the presence of personnel other than the operator to connect the transducer to the catheter.

Recently, we have devised a simple, reliable method of insuring extraarterial placement without the need for transducers or additional personnel. After the internal jugular vein is located, using a 22-gauge search needle, the vessel is entered, using an 18-gauge thin-walled Teflon® catheter (Arrow International, Reading, Pennsylvania). When easy aspiration of blood is possible with the catheter inserted to its hub, a 70-cm piece of sterile intravenous tubing (Abbott Laboratories, North Chicago, Illinois) is connected to the hub. The distal end of the tubing is lowered, and blood is allowed to flow into the tubing during a Valsalva maneuver, or is aspirated with a syringe. When the tubing is filled with enough blood to exceed anticipated CVP, usually 20–30 cm, the distal end is raised well above heart level and the blood

column is observed. Venous placement results in a fall in the height of the column, while arterial placement results in a rise in the blood column level. If there is no change in blood column height, the Teflon® catheter is reoriented and frequently reinserted, since we believe that only a fall in the blood column is indicative of extraarterial placement.

We have used this procedure in more than 200 internal jugular vein cannulations; suspected intraarterial catheter placements with equivocal pulsations from the hub have been shown to be intraarterial on four occasions. The technique requires no special equipment and no ancillary personnel, and it facilitates safe jugular vein catheter placement in areas such as the preinduction areas outside of operating rooms, or on patient care floors.

MITCHELL ZEBROWSKI, M.D.
Clinical Assistant Professor

JAMES E. DUCKETT, M.D.
Clinical Assistant Professor

*Department of Anesthesia
Presbyterian—University of Pennsylvania Medical Center
51 N. 39th Street
Philadelphia, Pennsylvania 19104*

REFERENCE

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Nitrous Oxide Acts Directly at the Mu Opioid Receptor

To the Editor:—The article by Way *et al.*¹ is of considerable interest, however, although they mention in passing that their results may indicate that N₂O could produce its effects by “a direct effect on endogenous opioid peptide receptors,” they neither indicate that this idea was first suggested by us,^{2,3} nor do they again refer to this idea.

We feel that a direct agonistic effect of N₂O is the

most likely explanation of these findings,¹ particularly since it has been shown that ³H-naloxone binding is interfered with by N₂O at radio receptor assay.⁴ Further evidence for this idea is provided by Morris and Livingston, who have demonstrated that met-enkephalin levels in various opioid-rich areas within the brain are not changed by exposure to N₂O.⁵ Our work alluded to analgesic N₂O only,^{2,3} while anesthetic N₂O might