Nitroglycerin Improves Venous Cannulation

To the Editor:—I wish to call to the attention of my colleagues a useful adjunct to the placement of intravenous catheters. Many patients admitted to hospitals require some form of intravenous therapy but have poorly visible veins. Often the veins of such patients have been traumatized by multiple attempts and failures by hospital staff.

I have found that these veins are easily visualized by placing ½ inch (1.2 cm) of nitroglycerin ointment (Nitropaste®) over the dorsum of the hand or foot in the region selected for the site of cannulation. Before venopuncture, the ointment is removed with an alcohol swab. In all cases there has been an obvious increase in vein size and a resultant minimal difficulty with catheter placement. Heck et al. have also reported that the use of nitroglycerin ointment reduced the difficulty of cannulation.¹² However, these authors suggested a 2-hour interval between ointment administration and catheter placement, whereas a period of 10 to 20 min has been sufficient in my experience. Neither in their study nor in my experience at this institution have any adverse effects, including significant blood pressure changes, occurred.

In view of the speed of onset, simplicity, and increased efficiency that this maneuver allows, I recommend its use for those patients in whom intravenous catheter placement difficulties have occurred or are anticipated.

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References


Seizure Following Stellate Ganglion Block after Negative Aspiration and Test Dose

To the Editor—Seizures during stellate ganglion block are a well-described complication,¹ and even very small doses of local anesthetic, such as 1.5 ml of 0.5% bupivacaine, may cause seizures if injected directly into the vertebral or carotid artery.² Recommendations to prevent the occurrence of seizures include careful attention to anatomic landmarks, aspiration tests in two planes, and the use of very small volumes of local anesthetic, such as 0.25 to 0.5 ml before injection of the therapeutic dose.³

We recently had a patient develop tonic–clonic seizure activity during stellate ganglion block despite negative aspiration tests and no apparent response to 0.5 ml of 0.5% bupivacaine given as a test dose. After the test dose, 60 s elapsed before we injected an additional 3 ml of 0.5%
bupivacaine. Within seconds, the patient developed loss of consciousness and tonic-clonic seizure activity with urinary incontinence. We ventilated the patient with a bag and mask, and the seizure activity subsided after 90 s without further treatment. The patient suffered no further sequelae from the procedure, and she returned home after 2 h of observation.

In retrospect, we gave this patient conflicting instructions before the procedure. She was instructed not to talk or swallow while the needle was in situ, but we also expected her to communicate any unusual sensations after the test dose of local anesthetic. After the patient recovered consciousness, we asked her if she felt anything unusual after injection of the test dose. Unfortunately, she was amnesic for everything immediately after needle insertion except for a feeling of nausea, which she said occurred soon after we started the procedure, but she could not tell us if the nausea occurred before administration of the test dose or as a result of the test dose. The most likely cause of the seizure activity was injection of the local anesthetic into the vertebral artery. Had we instructed the patient to use nonverbal communication, such as “raise your right arm if you experience ringing in your ears, strange taste in your mouth, etc.,” we may have avoided this complication.

It is important that the patient not speak after the needle is inserted to avoid damage to adjacent structures in the neck. It is also important that the patient alert the physician to the development of potential complications through some other means, because many patients can experience toxic symptoms of tinnitus or nausea without any obvious change in their appearance, especially with small amounts of local anesthetic. Our instructions to patients before all stellate ganglion blocks now include careful explanation of what is a normal and what is an abnormal sensation. We then instruct the patients to raise their arm if they experience a sensation out of the ordinary. If the patient does not raise an arm, we then ask the patients voluntarily to raise the arm if they feel well, thereby assuring us of the mental alertness of our patients. It is likely that these instructions will lead to a few false alarms from anxious or confused patients, but we feel it is a small price to pay for increased patient safety.

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REFERENCES

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A Tidy Adjunct to Arterial Cannulation

To the Editor:—The two commonly used techniques of percutaneous arterial cannulation involve either transfixing the artery or single wall puncture (direct threading). We are using a method that, in addition to being successful andatraumatic, also adds a measure of tidiness and self-protection.

The technique involves using a standard 3-ml syringe and a 20-g nonradiopaque Teflon® catheter. The plastic plug is removed from the needle, and a 3-ml syringe (without plunger) is attached to the proximal end (fig. 1). After the artery is punctured and a flash appears in the hub, while the continual backflow in the empty syringe is observed, the needle is advanced the additional distance required to ensure the catheter has entered the artery. If the free flow continues into the syringe, the catheter is threaded into the artery. Ordinarily the hub of the needle fills with blood, rather quickly reducing the visibility and certainty of arterial cannulation. This method reduces the uncertainty as to whether the catheter is in or out of the artery.