Anesthesiology
53:268, 1980

Retrograde Cannulation of a Persistent Superior Vena Cava

To the Editor:—Separate cases in which a pulmonary-artery catheter was passed inadvertently through a persistent left superior vena cava have been described recently by Falltrick[1] and by Crocker.[2] In both cases, placement of the catheter through abnormal vasculature was suspected when chest roentgenograms showed the catheter entering the heart from an anomalous position left of the sternum. This atypical appearance and the characteristic sharp bend the catheter assumes as it passes out of the coronary sinus have been suggested to be diagnostic of anterograde passage of a pulmonary-artery catheter through a persistent left superior vena cava.[3]

We recently were involved in the care of a patient in whom inadvertent retrograde catheterization of a persistent left superior vena cava occurred during an attempt to place a pulmonary-artery catheter. An anteroposterior chest roentgenogram (fig. 1) appeared to show the distal end of the catheter wedged in a left upper lung segment. Because of the atypical position of the catheter, further radiologic views and angiograms were obtained, which indicated that retrograde cannulation of a persistent left superior vena cava had occurred. Since our initial experience with this problem, we have had a second patient in whom a pulmonary-artery catheter appeared to be wedged in a left upper lung segment and in whom retrograde catheterization of a left superior vena cava was demonstrated. Therefore, we feel that retrograde passage of a pulmonary-artery catheter into a persistent left superior vena cava should be ruled out when, on a chest roentgenogram, the distal end of the catheter appears to be in a left upper lung segment.

David H. Sprague, M.D.
Assistant Professor of Anesthesiology

Henry L. Sherwood, M.D.
Resident in Anesthesiology

Department of Anesthesiology

University of North Carolina
Chapel Hill, North Carolina 27514

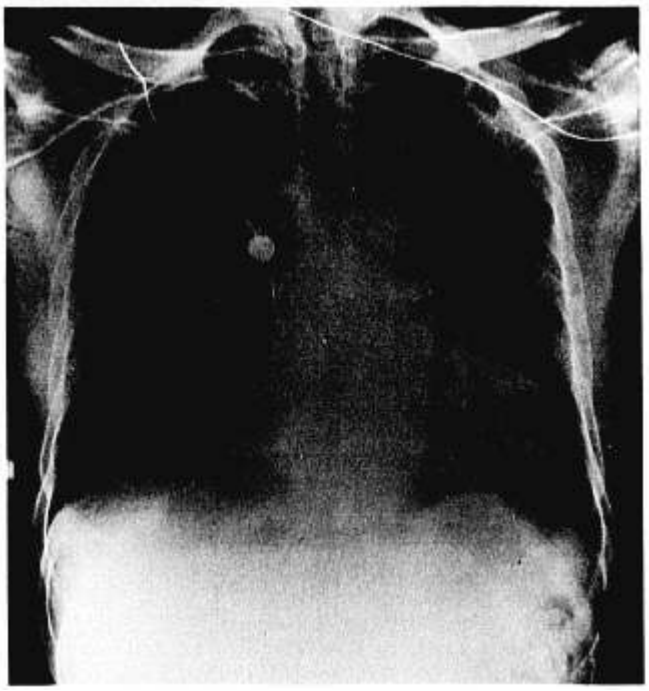

Fig. 1. An anteroposterior chest roentgenogram shows the malpositioned catheter in the persistent left superior vena cava. The catheter appears to be located in an upper-lobe division of the left pulmonary artery.

References

1. Falltrick RT: Pulmonary arterial catheterization through a persistent left superior vena cava. Anesthesiology 50: 155–156, 1979
2. Crocker MC: Anomalous pulmonary arterial catheterization. Anesthesiology 51:574, 1979
3. Coblentz MG, Criscito MA, Cohn JD: Persistent left superior vena cava complicating hemodynamic monitoring catheterization. Crit Care Med 6:32–35, 1978

(Accepted for publication April 4, 1980.)

Anesthesiology
53:268–269, 1980

A Hazard Alert—Reinforced Endotracheal Tubes

To the Editor:—For as long as I can remember, anesthesiologists have had trouble with reinforced endotracheal tubes. Some of these problems have been due to blisters forming on the inner wall of the tube during anesthesia and obstructing the airway. Munson, Stevens and Redfern[1] and Ohn and Wu[2] have clearly

shown it is the nitrous oxide in the anesthetic gas mixture that is responsible for distending the blister formed between the layers of latex.

I have been aware of the maker's concern with these problems for some time. In an earlier catalog, one is advised that "Ethylene oxide is unsatisfactory for the sterilization of multiple-dipped instruments such as spiral latex endotracheal tubes since the gas may permeate the material under pressure and cause blistering or separation of the layers."

Finally (with FDA approval), the maker felt it necessary to send to all Directors of Departments of Anesthesiology in the 8500 hospitals in the USA a Hazard Alert stating that:

> SPIRAL LATEX ENDOTRACHEAL TUBES (ANODE TUBES) which have been ethylene oxide gas sterilized or steam sterilized with a vacuum applied in the sterilization cycle could present a life-threatening hazard to the patient.
>
> ANY TUBES SO STERILIZED SHOULD NEVER BE REUSED.
>
> The latex layers can separate under vacuum. These separations, should they occur, *are usually invisible*.
>
> The life-endangering hazard occurs during anesthesia. Anesthetic gases, especially nitrous oxide, may permeate into the layer separations, resulting in expansion which can totally occlude the inner lumen of the tube.
>
> **DO NOT GAS STERILIZE**
>
> **DO NOT STEAM STERILIZE WITH VACUUM**
>
> Recommendations for Proper Sterilization:
> 1. STEAM STERILIZE WITH LIQUID CYCLE PROGRAM *WITHOUT* VACUUM, or
> 2. COLD STERILIZE, RINSE THOROUGHLY.

At the end of a commonly used autoclave cycle the pressure changes rapidly from +27–30 pounds per square inch to −10 pounds per square inch as vacuum is applied to remove the steam and moisture from the load. In the liquid cycle the pressure is gradually reduced down to atmospheric without the application of vacuum.

It is possible that this warning and advice have been forgotten in the intervening three years. However, these two new reports of the same hazard would indicate that we should urgently review our handling of these tubes to eliminate this unnecessary hazard to our patients.

L. RENDELL-BAKER, M.D.
Anesthesiology Service
Professor of Anesthesiology
Loma Linda University
Loma Linda, California 92357

REFERENCES

1. Munson ES, Stevens DS, Redfern RE: Endotracheal tube obstruction by nitrous oxide. ANESTHESIOLOGY 52:275–276, 1980
2. Ohn KC, Wu WH: Another complication of armored endotracheal tubes. Anesth Analg (Cleve) 59:215–216, 1980

(Accepted for publication April 8, 1980.)

Anesthesiology
53:269, 1980

Sixteen-gauge Tuohy Needles Should Be Abandoned

To the Editor: — It is astounding to me that in 1980, 16-gauge Tuohy needles are still being used for placement of plastic tubing in either the epidural or the subarachnoid space.[1]

For many years, an 18-gauge thin-walled Tuohy needle, which will accommodate most plastic tubing, has been available.* Whether an 18-gauge as compared with a 16-gauge needle would reduce the incidence of headache is debatable. Nonetheless, the authors of the cited article state, "There appears to be a direct correlation between the size of the needle used for the puncture and the incidence of cephalgia."

Therefore, why use a 16-gauge Tuohy needle when an 18-gauge thin-walled Tuohy needle permits plastic tubing to be threaded through it into either the subarachnoid or the epidural space. Such practice should cease.

DANIEL C. MOORE, M.D.
Senior Consultant
The Mason Clinic
P. O. Box 900
Seattle, Washington 98111

* Becton-Dickinson, Rutherford, New Jersey 07070, Order No. 1284.

REFERENCE

1. Edelman JD, Wingard DW: Subdural hematomas after lumbar dural puncture. ANESTHESIOLOGY 52:166–167, 1980

(Accepted for publication April 14, 1980.)