

REFERENCES

1. Younker D, Rodriguez V, Kavanagh J: Massive air embolism during cesarean section. *ANESTHESIOLOGY* 65:77-79, 1986
2. Albin MS, Babinski MF, Gilbert J, Smith SL: Venous air embolism is not restricted to neurosurgery (Letter). *ANESTHESIOLOGY* 59:151, 1983
3. Albin MS, Carroll RG, Maroon JC: Clinical considerations concerning detection of venous air embolism. *Neurosurgery* 3: 380-384, 1978
4. Amussat JZ: Recherches sur l'introduction accidentelle de l'air dans les veins. Paris, Germer Bailliere, 1839, p 255
5. Bunegin L, Albin MS, Helsei PE, Hoffman A, Hung TK: Positioning the right atrial catheter: A model for reappraisal. *ANESTHESIOLOGY* 55:343-348, 1981
6. Smith SL, Albin MS, Ritter RR, Bunegin L: CVP catheter placement from antecubital veins using a J-wire catheter guide. *ANESTHESIOLOGY* 60:238-240, 1984

(Accepted for publication September 11, 1986.)

Anesthesiology
66:94, 1987

In reply:—We appreciate very much the comments offered by Dr. Robinson and Dr. Albin. Their welcome discussion of both precordial Doppler monitoring and appropriately positioned multi-orificed central venous catheters in the management of parturients undergoing cesarean section with regional anesthesia significantly broadens the scope and intent of our original article.

DIRK YOUNKER, M.D.
VICTOR RODRIGUEZ, M.D.
JAMES KAVANAGH, M.D.
*Department of Anesthesiology
Baylor College of Medicine
One Baylor Plaza
Houston, Texas 77030*

(Accepted for publication September 11, 1986.)

Anesthesiology
66:94, 1987

Safety of Continuous Epidural Infusions

To the Editor:—We read with interest the case report by Lin *et al.*¹ regarding neurologic sequelae after accidental injection of toxic substances into the epidural space. We recognized the potential for this disaster prior to our initiating continuous epidural opiate infusions, and have taken steps to minimize the potential for such an occurrence.

We agree with the authors' recommendations for decreasing such accidents, and offer further suggestions:

1. We use a special solution administration set (#2C1503 Travenol Laboratories Inc., Deerfield, Illinois) which has no injection ports and makes a Leur lock connection with the epidural catheter. In addition, we securely tape this connection.

2. All patients treated with epidural morphine post-operatively are sent to one of two hospital wards where the nursing staff is familiar with epidural opiate analgesia and the equipment involved.

3. Any manipulations of the tubing or catheter are performed by a member of our department.

GLENN A. FROMME, M.D.
Assistant Professor of Anesthesiology

SCOTT R. ATCHISON, M.D.
Instructor in Anesthesiology

*Department of Anesthesiology
Mayo Medical School
Rochester, Minnesota 55905*

REFERENCE

1. Lin D, Becker K, Shapiro HM: Neurologic changes following epidural injection of potassium chloride and diazepam: A case report with laboratory correlations. *ANESTHESIOLOGY* 65:210-212, 1986

(Accepted for publication September 15, 1986.)

Anesthesiology
66:94-95, 1987

Safe, Continuous Epidural Infusions

To the Editor:—Drs. Lin, Becker, and Shapiro¹ present a timely report on neurologic changes following accidental drug injection through continuous epidural catheters.

One way that accidental injection of a continuous epidural catheter can be prevented is by the use of rigid tubing without any ports designed for continuous pressure