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**Epidural pneumatosis associated with
spontaneous pneumomediastinum.**

S Balachandran, F C Guinto, P Goodman and F M Cavallo

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LETTERS

Epidural Pneumatosis Associated with Spontaneous Pneumomediastinum

We read with much interest the article by S.J. Willing (1) that appeared in *AJNR* in 1991. The author states that epidural pneumatosis is commonly seen in trauma patients and that since computed tomography (CT) scans are seldom performed in spontaneous pneumomediastinum, a similar case has not been reported in the literature. Yoshimura, et al demonstrated the occurrence of epidural pneumatosis after strenuous karate exercise (2). We have encountered a case in which spontaneous pneumomediastinum and epidural pneumatosis occurred after prolonged vomiting.

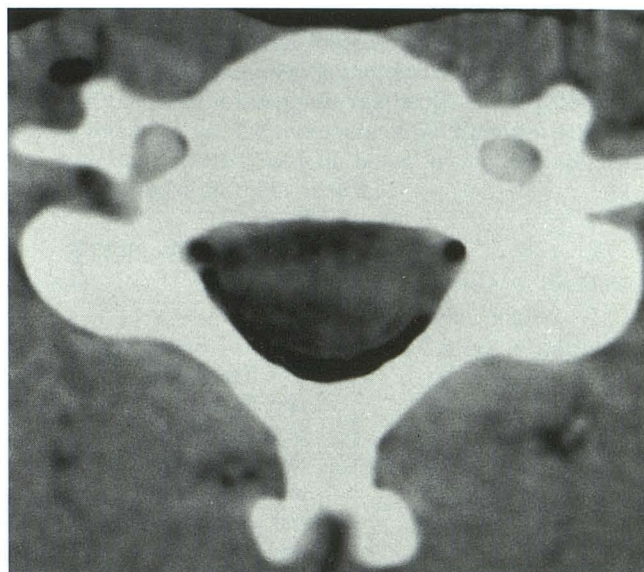
A 25-year-old man presented with a 2-day history of nausea and vomiting after ingestion of alcohol. During an episode of prolonged vomiting, he experienced substernal chest pain followed by coffee-ground emesis. On admission to the hospital, chest radiograph showed pneumomediastinum and subcutaneous emphysema in the neck. An esophogram was normal, and upper gastrointestinal endoscopy showed severe reflux esophagitis without an esophageal mucosal tear or fistula. A head CT, performed to exclude a brain neoplasm, showed air in the soft tissues of the upper neck. Additional CT images of the neck demonstrated a large amount of free air in the prevertebral fascia. On close examination, air was also seen in the epidural space (Fig. 1) and in the foramen transversarium. With conservative management, the patient's condition and the pneumomediastinum improved. The patient was discharged to home on the seventh day.

The possible mechanism by which spontaneous pneumomediastinum occurs is sustained high bronchoalveolar pressure resulting in leakage of air into pulmonary perivascular interstitium. The air dissects into the mediastinum and along the paths of least resistance to the fascial planes of the neck. Air in the retropharyngeal space could then freely communicate with the epidural space via the neural foramina (Fig. 2). Severe vomiting or exercise may cause spontaneous pneumomediastinum and subsequent epidural pneumatosis.

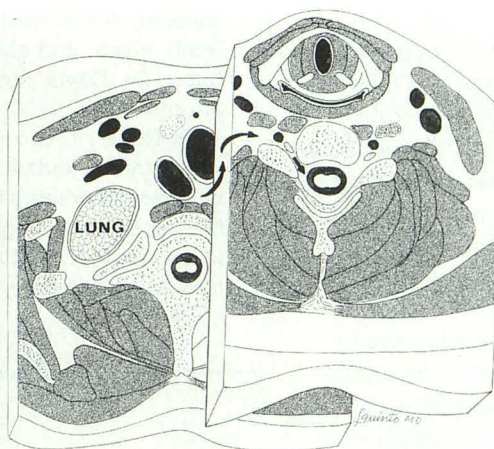
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References

1. Willing SJ. Epidural pneumatosis: a benign entity in trauma patients. *AJNR* 1991;12:345
2. Yoshimura T, Takeo G, Souda M, Ohe H, Ohe N. CT demonstration



1



2

Fig. 1. CT image of C5 level shows presence of epidural air.
Fig. 2. Composite diagram of lower cervical and upper thoracic cross-sections illustrating pathway of air dissection (arrows) leading to epidural pneumatosis.

of spinal epidural emphysema after strenuous exercise. *J Comput Assist Tomogr* 1990;14:303-304

Reply

The frequency with which air is intentionally administered into the epidural space without complication in the process of epidural anesthesia attests to the benign nature

of epidural pneumatosis. The diagnosis of epidural pneumatosis may confidently be made in the typical posttraumatic setting when the appropriate criteria are present. When the criteria given in reference 1 above are not present, epidural pneumatosis becomes a diagnosis of exclusion. Air in the epidural space may be a sign of abscess or fistula. In the case above, esophageal perforation and mediastinitis (Boerhaaves's syndrome) could have re-

sulted in epidural air with serious clinical implications. The appropriate tests were performed to rule out this possibility, allowing the diagnosis of epidural pneumatosis to be made.

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EDITOR'S NOTE

As of September 1, 1992, Dr David O. Davis resigned as Chairman of the Publications Committee of the American Society of Neuroradiology. He has served as Chairman of that committee since the spring of 1987 and, during his tenure, oversaw the financial operations of ASNR publications and, most importantly, guided the business affairs of this journal. It was under Dr Davis's care that the editorial transition of the Journal was accomplished, as well as the major step of going to self-publication. As Editor-in-Chief, I have been particularly grateful for his advice on organizational, fiscal, and scientific matters, which was sage, freely given, and always respectful of an editor's prerogatives. Dr Davis has left an indelible imprint upon the Journal.

Dr Robert I. Grossman, Director of Neuroradiology and Professor of Radiology at the University of Pennsylvania, has been appointed to succeed Dr Davis. He has served on the Publications Committee of the AJNR and is a respected investigator and educator. I look forward to working with him in the coming years.

Michael S. Huckman, MD

BOOKS RECEIVED

Radiographic Imaging: A Guide for Producing Quality Radiographs. By Evelyn Frank Burns. Philadelphia: WB Saunders, 215 pp, 1992. \$29.95.

Imaging of the Spine and Spinal Cord. Edited by Claude Manelfe. New York: Raven Press, 910 pp, 1992. \$170.

Books, AV Programs, and software intended for review should be sent to:

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