tive pulmonary disease. Our plethysmographic system includes the plethysmograph, the X-Y-T recorder, a heated pneumotachygraph (Hans-Rudolph 3800), and a mouth shutter (Hans-Rudolph 4100).

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Fatal Association of Tolazoline and Dopamine

To the Editor:

Therapy with tolazoline has been advocated in the treatment of pulmonary hypertension, especially in infants. We report herein one case where administration of tolazoline for pulmonary hypertension resulted in the death of an adult patient.

CASE REPORT

A 41-year-old man with an unremarkable medical history aspirated gastric contents during an esophagogastrectomy with intrathoracic gastroesophageal anastomosis for adenocarcinoma of the esophagus. After surgery, he could not be weaned from mechanical ventilation. He was therefore transferred to the intensive care unit for ventilatory support. Follow-up chest x-ray films and cultures of sputum supported the diagnosis of aspiration pneumonia.

On the fourth postoperative day the patient had an arterial oxygen pressure of 67 mm Hg while receiving a fractional concentration of oxygen in the inspired gas of 0.40 and positive end-expiratory pressure of 18 cm H.O. Therapy with tolazoline hydrochloride (12 μg/kg/min) had been started on the previous day to maintain a cardiac index of approximately 3.5 L/min/sq m. Pulmonary arterial pressure, which had been normal immediately after surgery, had been steadily rising and was 90/40 mm Hg; right atrial mean pressure was 15 to 18 mm Hg, and right ventricular pressure was 90/25 mm Hg. In an attempt to reduce the afterload of the right ventricle, tolazoline (2 mg/kg of body weight) was injected as a slow bolus. Systemic arterial pressure immediately fell to 50/30 mm Hg. The infusion of dopamine hydrochloride was initially increased to 20 μg/kg/min, but the arterial pressure fell even further to 38/15 mm Hg. Therapy with dopamine was discontinued, and ephedrine, methoxamine, and fresh frozen plasma were given.

Two hours after administration of tolazoline, the blood pressure was 70/40 mm Hg; a new attempt to infuse dopamine hydrochloride (8 μg/kg/min) resulted in hypotension to 40/15 mm Hg. The arterial pressure returned to 70/40 mm Hg within three to four minutes of discontinuation of the infusion of dopamine. Four hours after the administration of the single dose of tolazoline, arterial pressure was 72/38 mm Hg. There had been no urinary output since the initial episode of hypotension. A new attempt to infuse dopamine hydrochloride (10 μg/kg/min) caused the arterial pressure to fall to 38/20 mm Hg; cardiac arrest followed. Permission for autopsy was not granted.

DISCUSSION

Paradoxical hypotension may occur when norepinephrine or epinephrine are given after tolazoline. Peripheral vasoconstriction is enhanced by the β-adrenergic activity of catecholamines, whereas competitive inhibition by tolazoline prevents α-adrenergic induced vasconstriction. Dopamine may have a weak α-adrenergic activity at dosages of 10 μg/kg/min to 20 μg/kg/min, although the β-adrenergic action is predominant. Therefore, paradoxical hypotension may result when dopamine and tolazoline are administered simultaneously. In our patient, severe hypotension occurred after each new attempt to administer dopamine for as long as four hours after the initial dose of tolazoline. Although this drug is normally eliminated rapidly through the kidneys, it is likely that the anuria that followed the hypotensive episode significantly prolonged the half-life of the drug.

It should be concluded that dopamine and tolazoline cannot be administered simultaneously. Furthermore, the impaired renal function that often accompanies severe respiratory failure may significantly prolong the half-life of tolazoline. Infusion of dopamine should not, therefore, be considered for several hours after the administration of even a single small dose of tolazoline. For all of those reasons, tolazoline seems to have little role in the treatment of right ventricular failure developing as a consequence of the adult respiratory distress syndrome.

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REFERENCES


An Intrapulmonary Lymph Node Presenting as a Coin Lesion of the Lung

To the Editor:

The differential diagnosis of an asymptomatic intrapulmonary nodule is extensive. When notching is present, the likelihood of tumor is increased. We have recently had the opportunity to study a patient with an asymptomatic right lower lobe nodule with prominent notching. Our findings provide the basis for this report.

CASE REPORT

The patient was a 58-year-old white man who was admitted for uncontrolled diabetes mellitus. A chest x-ray film on admission revealed a rounded 5-mm nodule in the right lower lobe close to the pleural surface and superimposed over the posterior aspect of the ninth rib. No calcifications were identified within the nodule. The lungs were otherwise clear, with no enlarged hilar or mediastinal lymph nodes. Frontal laminagrams through the nodule revealed an oval 5 × 7-mm mass with a shallow notch directed toward the hilum (Fig 1). No prominent vessels could be identified leading into the nodule. The mass was considered to be most likely either a...
granuloma or neoplasm. No previous x-ray films were available for comparison.

Segmental resection of a portion of the right lower lobe produced a segment of lung measuring $2.5 \times 2 \times 1$ cm. On sectioning, an oval black nodule measuring $5 \times 5 \times 7$ mm was revealed. Microscopically, the lung showed an intraparenchymal anthracotic lymph node situated 4 mm from the pleural surface (Fig 2). Adjacent lung and pleura were unremarkable.

**DISCUSSION**

Frontal and lateral chest x-ray films and frontal laminagrams revealed a $5 \times 7$-mm oval nodule with a shallow notch in the right lower lobe. The presence of a notched mass is often considered suggestive of carcinoma. Presumably, the notch represents the point of entry of the tumor's vascular supply. In this case, biopsy revealed an anthracotic lymph node, and the notch identified radiologically most probably corresponds to the hilum of the node.

Intrapulmonary lymph nodes are rare, despite the diffuse distribution of lymphoid tissue throughout the lungs. Lymphoid tissue may be peribronchial, periarterial, perivenous, or pleural. Such tissue usually occurs as lymphoid follicles or aggregates of lymphocytes. The amount of lymphoid tissue has been noted to increase with age and the presence of irritating substances, such as carbon particles. In anthracosis, lymphoid tissue is increased; and in rare instances, anthracotic intrapulmonary lymph nodes may occur. The lymph nodes may then be seen on chest x-ray films as masses indistinguishable from other coin lesions and may lead to diagnostic difficulties which, as in this case, can only be resolved by biopsy.

**Figure 2.** Anthracotic intrapulmonary lymph node. Note normal adjacent pulmonary tissue (hematoxylin-eosin, original magnification $\times 40$).

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**REFERENCES**


**Correction**

To the Editor:

In our article entitled “Long Survival in Patients with Bronchogenic Carcinoma Complicated by Superior Vena Caval Obstruction” (Chest 75:325-329, 1979), there is an error; the one-year survival is less than 10 percent, rather than less than 1 percent, as it appears in the abstract (p 325) and the discussion (p 327).

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