Massive Extracardiac Thallium Accumulation in Pulmonary Carcinoma

To the Editor:

Previous studies show that approximately 90 percent of lung tumors are thallium-avid. Thallium is reportedly better than gallium for visualizing tumors in the upper mediastinum, while gallium is better in the lower mediastinum and the left lower lung field that is obscured by normal cardiac uptake. Unlike gallium, inflammatory diseases do not accumulate thallium.1,2

Case Report

A 77-year-old woman sought medical advice because of severe left upper arm pain of two months' duration. The pain was intermittent and not always exertional. She denied history of chest discomfort. Past history included hypertension and smoking. Physical examination revealed left carotid bruit, normal heart sounds, diminished distal pulses and no localized neurologic signs. The electrocardiogram showed nonspecific S-T and T-wave changes. Because of her age, coronary risk factors, and evidence of peripheral vascular and carotid disease, the diagnosis of coronary artery disease was considered. She was exercised on the treadmill using the Bruce protocol. Exercise was terminated after 3.5 min because of fatigue. Peak heart rate was 102 bpm. She had no angina and there was no ischemic electrocardiographic change. Initial and four-hour delayed thallium images are shown in Figure 1. There is massive thallium uptake in the left upper lung field. Subsequently, a chest x-ray film was obtained which showed a round lesion in the left upper lobe. CT scan showed that the mass extended laterally through the pleura, with bone destruction and extension to the soft tissues of the chest. There was also left hilar adenopathy. Needle aspiration biopsy showed anaplastic squamous cell carcinoma.

Discussion

To our knowledge, such a degree of extra thallium uptake in a patient with pulmonary carcinoma has not been previously reported. Although in retrospect a chest x-ray film should have been obtained earlier, nevertheless the fact remains that the precise diagnosis in this patient was not suspected on initial presentation and the results of thallium imaging were helpful in patient management.

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References


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