

# Thallium-201 Accumulation by Epidermoid Inclusion Cyst

R. Paul Bordlee and Ray W. Ware

Radiology Service (114), Veterans Affairs Medical Center, University of Texas, Southwestern Medical Center, Dallas, Texas

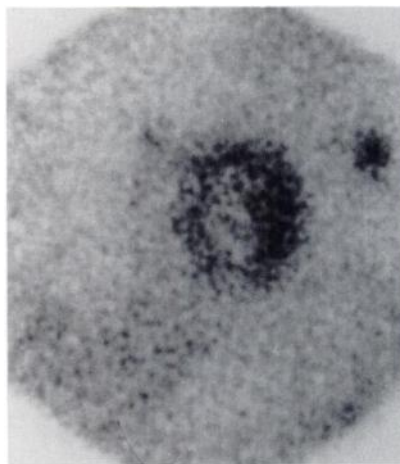
An elderly male undergoing re-evaluation for coronary artery disease demonstrated an extra-cardiac focus of  $^{201}\text{Tl}$  accumulation during the performance of a planar myocardial perfusion scan. This corresponded to a subcutaneous lesion of the left posterior thorax found on a concurrent computerized axial tomographic (CAT) scan and upon surgical excision proved to be an "epidermoid inclusion cyst." A follow-up nuclear scan failed to reveal any residual extracardiac tracer localization. Confusing this lesion with metastatic deposits during  $^{201}\text{Tl}$  neoplastic evaluations can be avoided by examination of the adjacent integument.

*J Nucl Med* 1992; 33:1857-1858

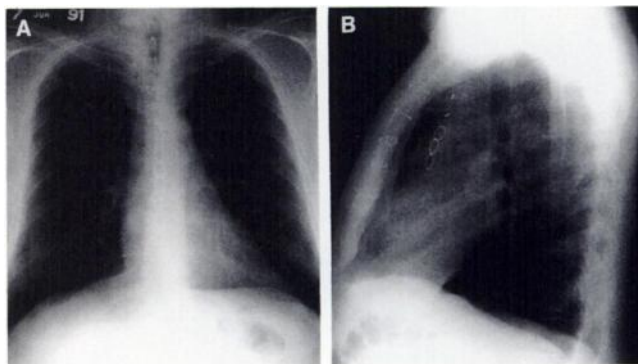
We present the case of a 68-yr-old male who during the evaluation of coronary artery disease underwent a  $^{201}\text{Tl}$  myocardial perfusion scan. An extra-cardiac focus of tracer localization was found in the left thorax. A computerized axial tomographic (CAT) scan of the chest revealed a 3 × 4 cm subcutaneous lesion of the left posterior chest wall corresponding to the region of tracer accumulation. Subsequent surgical removal of this lesion yielded a diagnosis of "epidermoid inclusion cyst."

## CASE REPORT

The patient is an obese 68-yr-old male who underwent a coronary artery bypass graft procedure in 1983 and now presented with increased frequency of angina. As part of his re-evaluation, an exercise stress  $^{201}\text{Tl}$  myocardial perfusion scan was performed using 2.2 mCi tracer and camera images obtained in the anterior, 45 degree LAO and 70 degree LAO projections immediately following exercise and after 4 hr rest. Among other perfusion related findings, note was made of an extra-cardiac focus of tracer localization within the left thorax (Fig. 1). Although routine chest radiographs were not remarkable except for changes of past coronary artery bypass graft and old granulomatous scars (Fig. 2A,B), the possibility of an occult early stage lung cancer arose and a CAT scan of the chest was performed. An axial image through the thorax at the level of the heart revealed a 3 × 4 cm subcutaneous lesion within the left posterior chest wall in an area



**FIGURE 1.** Forty-five degree LAO gamma camera scintiphotograph of the heart demonstrates an extra-cardiac focus of tracer within the left thorax.



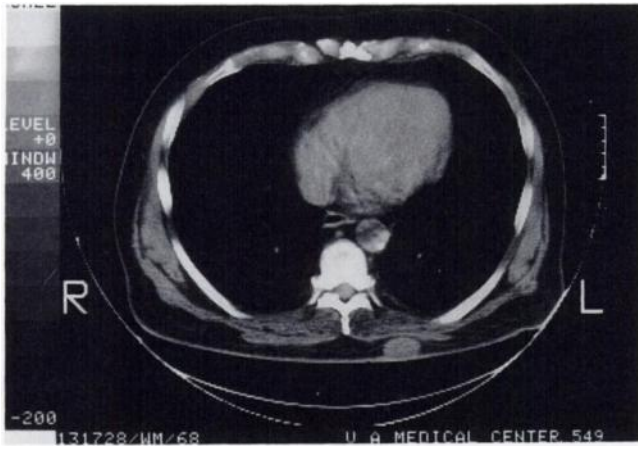
**FIGURE 2.** PA (A) and lateral (B) chest radiographs demonstrate evidence of past coronary artery bypass grafts but no lung masses or other findings of significance.

corresponding to the tracer focus (Fig. 3). Clinical examination revealed a palpable non-tender, non-inflamed subcutaneous lesion of the left posterior chest wall. Subsequent surgical removal of this lesion yielded a diagnosis of "epidermoid inclusion cyst" and a repeat  $^{201}\text{Tl}$  scan performed several weeks later no longer demonstrated the extra-cardiac tracer focus (Fig. 4).

## DISCUSSION

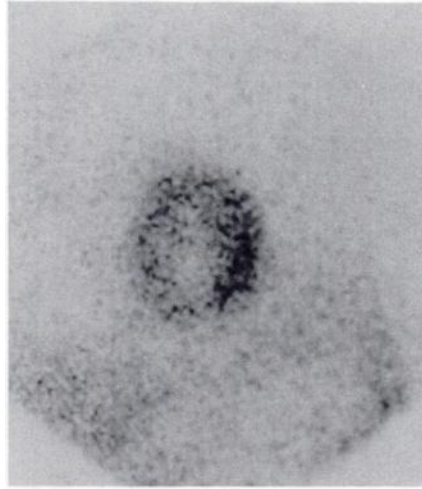
Thallium-201 continues to be a major radionuclide for imaging of myocardial perfusion and is also used in the evaluation of parathyroid adenoma as well as thyroid, lung and brain tumors. Extra-cardiac localization of  $^{201}\text{Tl}$  has been described in a variety of sites to include hyperplastic,

Received Mar. 24, 1992; revision accepted May 21, 1992.  
For reprints contact: R. Paul Bordlee, MD, Radiology Services, Veterans Affairs Medical Center, University of Texas, Southwestern Medical Center, 4500 S. Lancaster Rd., Dallas, TX 75216.



**FIGURE 3.** Axial computerized tomographic image through the thorax reveals a 3 × 4 cm well circumscribed high attenuation subcutaneous lesion of the left posterior chest wall.

neoplastic and inflammatory conditions (1). We would add to this list epidermoid inclusion cyst, a fairly common benign cystic nevoid structure with an epidermal lining occurring on the scalp, forehead, neck, trunk and scrotum and usually clinically apparent (2). It is our contention that careful examination of the integument in areas of



**FIGURE 4.** Follow-up 45 degree LAO gamma camera scintiphotograph several weeks after surgical excision of the left chest wall lesion.

extra-cardiac thallium foci can preclude false-positives during neoplastic evaluations.

#### REFERENCES

1. Krasnow AZ, Collier BD, Isitman AT, Hellman RS, Peck DC. The clinical significance of unusual sites of thallium-201 uptake. *Semin Nucl Med* 1988; 18:350-358.
2. Stewart WD, Danto JL, Maddin S. *Synopsis of dermatology*, 2nd edition. Saint Louis: Mosby; 1970:373.