Daniel Powers, M.D.

R A D I O L O G Y

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PATIENT NAME:	BOILERMAKER, STEVE (84 years old)
FILE NO.:	38206
DATE OF TESTING:	NOVEMBER 16, 2002
REFERRING PHYSICIAN:	STEVE PULMANO, M.D.

OVERALL CONCLUSIONS:

The four plain radiographic views of the chest, the supine computerized tomographic scan of the chest without iodinated contrast (spiral CT scan) and the prone high resolution, thin slice computerized tomographic scan of the lungs (HRCT) revealed:

1. **EXTENSIVE CALCIFIED AND NON-CALCIFIED PLEURAL PLAQUE FORMATION INVOLVING THE CHEST WALLS, RIGHT PARAVERTEBRAL REGION, LEFT PERICARDIUM AND DIAPHRAGMS, CONSISTENT WITH PRIOR ASBESTOS EXPOSURE.**

2. **OTHER FINDINGS:**

   A) **A RIGHT THORACIC SCOLIOSIS AND A MID-THORACIC KYPHOSIS WITH MULTI-LEVEL DETERIORATIVE BONY SPURRING, SCHMORL'S NODE COMPLEXES AND VACUUM PHENOMENA.**

   B) **MULTIPLE SMALL NON-SPECIFIC LIVER LESIONS – PROBABLY REPRESENTING CYSTS AND/OR HEMANGIOMAS. CORRELATE CLINICALLY AND WITH BLOOD LABORATORY LIVER ENZYME ANALYSIS TO DETERMINE THE NEED FOR FURTHER WORK-UP.**

ADDITIONAL COMMENTS:

Although pleural plaque formation is often considered a marker for prior asbestos exposure, it can cause restrictive pulmonary limitations when the amount of plaquing is of a great amount, causing encasement of the chest walls such as in this individual. Further correlation with the patient's clinical symptomatology, exercise tolerance and pulmonary function testing would be beneficial.

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DISCUSSION:

The PA upright chest x-ray (CXR) gives an overview of the thorax for plaquing, interstitial/parenchymal changes, nodules and/or other masses, effusions and diffuse pleural changes. However the chest wall, pleura, hila, mediastinum and lung parenchyma are superimposed and thus, findings may be missed, underestimated or overlapping and difficult to separate out from one another. Oblique views of the chest allow for additional analysis of the chest walls.

The supine computerized tomographic scan of the chest without iodinated contrast (spiral CT scan) is designed to screen for pleural plaquing and differentiate extra-pleural fat from pleural plaques. It also looks for pulmonary nodules suggestive for carcinoma, rounded atelectasis, mesotheliomas and pleural effusions. Compared with plain radiographs, it is better able to separate out the chest wall, pleura, hila, mediastinum and lung parenchyma for improved delineation of individual findings. It is superior to plain radiographs for the detection of calcification within plaques. Should interstitial fibrosis be a concern, then prone HRCT would be necessary because the spiral CT scan is performed with relatively thick slices (7 mm thick, 7 mm apart) and in the supine position, leading to dependent density where the blood pools in the posterior aspects of the lungs causing increased density, the areas most often the location of interstitial fibrosis caused by asbestosis.

The prone high resolution, thin slice computerized tomographic scan of the lungs (HRCT) is designed to evaluate the chest for interstitial fibrosis, given its thin slices (1.0 mm thick). Improved resolution, but lesser screening for pleural plaque formation and improved pulmonary nodule characterization, if specifically scanned, is afforded by this technique.

PROCEDURE:

All three studies - the plain radiographs, supine spiral CT and prone HRCT, were obtained at **REGIONAL IMAGING CENTER (ATLANTA, GEORGIA)** by Ima Tekque, CRT, ARRT (CT). The supine spiral CT and prone HRCT studies were performed on a General Electric, Hi-Speed spiral CT scanner.

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