Eggshell calcifications on a routine chest x-ray

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CASE

A 74-year-old man presented with dyspnea on exertion and nonproductive cough. He has had dyspnea on exertion since the 1970s. He is a lifetime non-smoker. His occupational history is significant for work as a sculptor since 1989, and he was likely exposed to a large amount of fibrogenic particles, such as silica. He also had a history of being exposed to Agent Orange during the Vietnam War. His physical examination and vital signs were unremarkable; laboratory tests, including CBC, CMP, and UA, were normal. Due to his history of dyspnea on exertion and his occupation, an x-ray was obtained which showed bilateral hilar and mediastinal adenopathy with eggshell calcifications (Figure). The patient claims that the unusual appearance of the lymph nodes was discovered after the Vietnam exposure to Agent Orange but prior to his career as a sculptor. Old films are not available to determine whether this eggshell calcification was present when he returned from Vietnam. He underwent evaluation for an abnormal chest x-ray in 1973, but information from that evaluation is not available.

DISCUSSION

Pneumoconiosis can be either fibrotic or non-fibrotic. Silicosis and coal workers pneumoconiosis are fibrotic diseases and can lead to calcifications of lymph nodes. Chronic silicosis leads to an increase in inflammation and fibrogenic factors. Eggshell calcification is a radiographic term describing abnormal hilar or mediastinal lymph nodes. According to Fraser and Pare, “Eggshell calcification is uncommon; it consists of a ring of calcification around the periphery of

Figure. PA and lateral chest x-rays demonstrate bilateral egg shell calcification of the hilar lymph nodes. See red circles.

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Eggshell calcification is non-specific but most commonly occurs in silicosis and coal workers' pneumoconiosis. It can also be seen with post-irradiation lymphoma, sarcoidosis, scleroderma, amyloidosis, and infectious, such as blastomycosis and histoplasmosis. A thorough history with past environmental exposures can usually identify the most likely etiology. This case highlights the importance of old films to determine the cause of disease. If old films taken after the patient's exposure to Agent Orange in Vietnam but prior to the patient's exposure to silica from sculpting demonstrated the eggshell calcifications, one would have to consider Agent Orange as a possible causative agent. Without these old films, one must consider the silica exposure from sculpting as the likely causative agent.

**Keywords:** eggshell calcification, silicosis, occupation, Agent Orange

**References**

2. Fraser RG, Pare JA. Diagnosis of Diseases of the Chest. 3rd Ed. 1977; Volume 1: p 470.