SARCOIDOSIS IN TWO WORKERS MAKING LIGHT BULBS

Introduction Two out of about 30 workers in a light bulb production unit were diagnosed with ‘sarcoidosis’ and referred to our occupational health clinic in 2014.

Case reports A 27-year-old male (case A) was diagnosed with sarcoidosis in January 2013. He presented with fatigue, exertional dyspnea, mildly restricted pulmonary function (TLC 81%) and mildly reduced diffusion capacity (DLCO 71%). Chest imaging by computerised tomography showed a nodular pattern with lymphatic distribution and enlarged mediastinal lymph nodes. Histology of lymph node tissue (obtained by mediastinoscopy) revealed granulomas compatible with sarcoidosis. It came to light that one of his work colleagues also had sarcoidosis. This 33-year-old male (case B) had been diagnosed with sarcoidosis in 2008, based on a history of exertional dyspnea, abnormal chest radiography and an open lung biopsy showing granulomas.

Both men had worked, since 2005, as technical operators in a factory producing light bulbs. There was potential exposure to zirconium, mercury, thallium and thorium, but considerable exposure was mentioned to dust originating from the clipping of tubes made of ‘fused quartz glass’. X-ray diffraction of settled dust samples demonstrated mainly amorphous silica, possibly with some cristobalite.

Subsequent microscopic examination of the mediastinal lymph node tissue (case A) and lung tissue (case B) under polarised light revealed multiple small birefringent crystals in relevant areas. Blood Lymphocyte Proliferation Test (LPT) was negative for beryllium and zirconium, but convincingly positive for nano-silica in case A. LPTs were negative for beryllium and nano-silica in case B (who was under corticosteroid therapy). Both patients improved clinically, radiologically and functionally after removal from exposure.

Discussion Several elements suggest that these two cases of ‘pseudo-sarcoidosis’ were caused by occupational exposure to silica.