Unusual Radiographic Findings in a Patient with Sarcoidosis

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ABSTRACT

We recently encountered a patient presenting with a solitary nodule on chest radiograph. The solitary pulmonary nodule (SPN) has extensive differential diagnosis, including both benign and malignant etiology. Management is frequently challenging. After wedge resection, the nodule was proven to be sarcoidosis. In Taiwan, sarcoidosis presenting as a SPN has never been documented. Recognition of this phenomenon aids in the proper diagnosis and subsequent conservative management. We wish to report this case to alert clinicians, radiologists and pathologists that solitary pulmonary nodule can develop in the lung in patients with sarcoidosis with or without hilar lymphadenopathy.

A solitary pulmonary nodule (SPN) is noted in 1 of 500 chest radiographs. When solitary pulmonary nodule (SPN) is seen on chest radiographs; they could be either malignant or benign lesions. The most common benign causes are infectious granulomas (about 80%), and hamartomas (about 10%). The other benign etiologies are rheumatoid arthritis, intrapulmonary lymph nodes and sarcoidosis [1].

We recently encountered a patient with sarcoidosis presenting with a solitary pulmonary nodule on chest radiograph. Herein, we wish to report this case to share our experience.

CASE REPORT

A 48-year-old female had chest tightness off and on for more than one month. She came to our hospital to seek medical attention. Physical examination showed nothing of note. Laboratory tests including routine chemistry and complete blood count with a differential were all within normal limits. The sputum cytology was negative. Chest radiography revealed a solitary nodule in her right lower lung field (Fig. 1). Computed tomography (CT) revealed a 2.7 × 1.5 cm nodular opacity (Fig. 2) with hilar lymphadenopathy (Fig. 3). On lung window, the margins of this nodule are circumscribed.

A malignant neoplasm was suspected. The patient underwent a wedge resection with a frozen section examination which was reported as “noncaseating granulomas” Hilar lymph node biopsy was also taken. Histologically, sections from the lung and hilar lymph nodes showed a similar microscopic appearance. They contained multiple noncaseating granulomas composed of histiocytes, lymphocytes and multinucleated giant cells. (Fig. 4, 5). Both acid fast stain and periodic acid Schiff stain failed to demonstrate TB bacilli or fungal elements. Cultures for TB and fungus later yielded negative results.

The patient was started on glycoestroid hormone. Six months after surgery, she returned to the clinic. CT scan showed minimal decrease of her hilar lymphadenopathy.

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DISCUSSION

Our patient presented the typical radiographic findings as symmetrical hilar lymphadenopathy. Histologically, both the lung nodule and hilar lymph nodes showed noncaseating granulomas. Acid fast stain was negative, as was periodic acid-Schiff stain. She was treated with glucocorticoid hormone with minimal response. The diagnosis of sarcoidosis was most likely.

The first two Taiwanese cases of sarcoidosis were reported in the 1960s [2, 3]. In 1997, Perng et al noticed an increasing incidence in Northern Taiwan [4]. However, as there has been no island-wide survey, the true annual incidence of sarcoidosis in Taiwan still remains unknown. Thereafter, only a few sporadic cases have been reported [5-8]. The largest series was the report by Hsieh et al [8].

Typical chest radiographic findings of sarcoidosis include bilateral hilar lymphadenopathy (BHL), pulmonary infiltration, small nodules in a perilymphatic distribution [9]. However, Baughman et al [10] reported that 20-25% of patients of sarcoidosis lacked bilateral lymphadenopathy. In our case, the solitary pulmonary nodule caused confusion. Initially, we considered that the findings and BHL were unrelated. That was why the surgeon requested a frozen section examination.

There are several reports that sarcoidosis presents as a solitary pulmonary nodule [11-22], mostly from the western literature, with a few reports from Japan. The patient reported by Koh et al had pulmonary sarcoidosis without BHL [14]. As a result, the correct diagnosis was delayed. From the literature, we could say that the radiologic findings of nodular sarcoidosis are not specific, and often mandate a
Unusual radiographic findings

Figure 2. Computed tomography shows a solitary nodule in the right lower lung field.

Figure 3. Computed tomography shows symmetrical hilar lymphadenopathy.
tissue diagnosis.

In conclusion, we present this case to alert the clinicians, radiologists, and pathologists that solitary pulmonary nodules can develop in patient with sarcoidosis, with or without bilateral hilar lymphadenopathy. Recognition of this phenomenon aids in the proper diagnosis and subsequent conservative management.

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