Radiology Forum

Necrotising Mediastinal Lymph Nodes in Sarcoidosis

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Clinical Summary

A 27-year-old female presented with the complaints of dry cough, low grade fever for one year and nodular skin lesions for six months. Past history revealed that she was treated for multi-drug resistant tuberculosis (MDR-TB) (moxifloxacin 400mg, cycloserine 500mg, ethionamide 500mg, pyrazinamide 1500mg, combutol 800mg with injection kanamycin 0.75g daily) for six months. The MDR-TB was confirmed on GeneXpert report on bronchoalveolar lavage fluid that showed *Mycobacterium tuberculosis* and rifampicin resistance. However, there was no response even after 14 months of treatment, instead she developed adverse drug reactions, like joint pain and hypothyroidism.

Investigations

Complete blood count, hepatic and renal function tests were within normal limits. Serum uric acid was 15.9mg/dL and thyroid stimulating hormone was 15.9μIU/mL. Contrast enhanced computed tomography (CECT) of the chest (Figure 1) done 14 months ago showed necrosis in the lymph nodes of aorto pulmonary window. Follow-up CECT of the chest after 14 months of treatment for MDR-TB showed multiple large necrotic nodes (15.5mm) in the right para-tracheal region, left para-tracheal region (13mm), aorto-pulmonary window (14.5mm), left hilar (16mm), right hilar (12 mm) and subcarinal (14mm) (Figure 2). Endobronchial ultrasound guided transbronchial needle aspiration from mediastinal lymph nodes was planned, but the patient did not give consent for the same. Mantoux test was negative. Serum for angiotensin converting enzyme was 62.8U/L (interval 8-68 U/L), total urinary calcium was 212.94mg/24 hours and urinary calcium was 10.92mg/dL. Histopathological examination of biopsy specimen from the skin nodules revealed dermis with fair number of vaguely formed epitheloid granuloma surrounded by mixed inflammatory infilterate suggestive of sarcoidosis. Ophthalmic examination was normal. Ultrasound examination of whole abdomen showed no evidence of retroperitoneal lymphadenopathy and hepatosplenomegaly. The

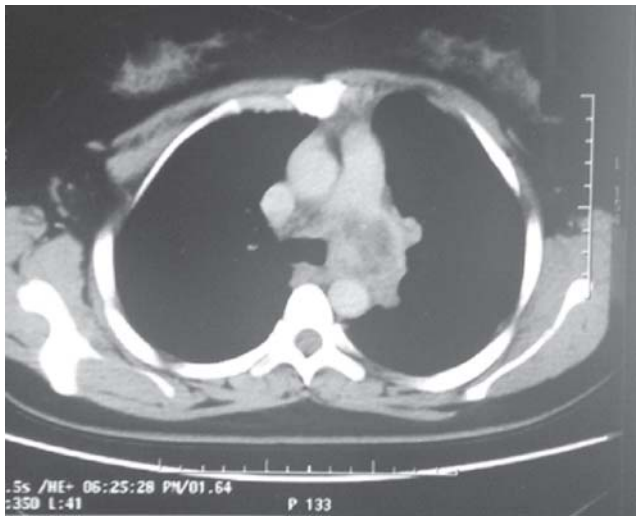

Figure 1. Contrast enhanced computed tomography of chest (mediastinal window) 14 months ago showing necrosis in the lymph nodes of aorto-pulmonary window.

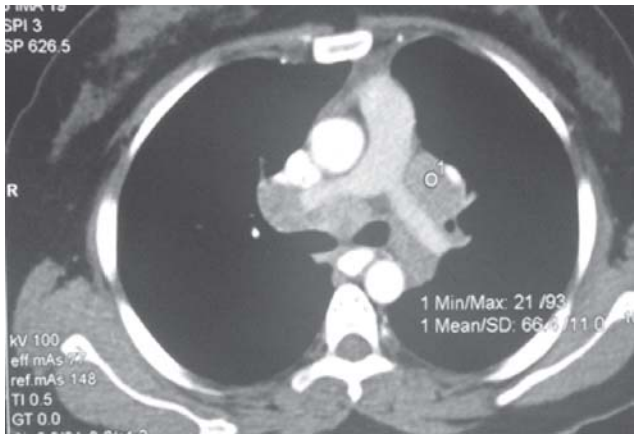

Figure 2. Follow-up contrast enhanced computed tomography of chest, done after 14 months of treatment for multi-drug-resistant tuberculosis, showed multiple large necrotic lymph nodes in aorto-pulmonary window.

patient was started on prednisolone 40mg daily on the basis of histopathological examination of the biopsy specimen from the skin nodule. After initiation of oral corticosteroids, skin lesions subsided drastically with the resolution of other chest symptoms. CECT chest (Figure 3) showed significant

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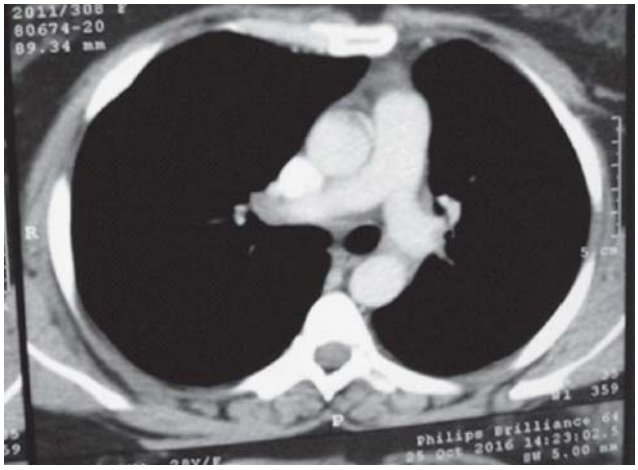

Figure 3. Follow-up contrast enhanced computed tomography of chest done two months after treatment with oral corticosteroids showing significant regression in the size of the mediastinal lymph nodes.

regression in the size of mediastinal lymph nodes after two months of treatment with corticosteroids. The dose of prednisolone was tapered rapidly due to remarkable steroid induced weight gain. She was continued with 5mg prednisolone on alternate days.

Diagnosis

Sarcoidosis with necrotising mediastinal lymph nodes.

Discussion

Sarcoidosis, a multi-system disorder of unknown cause, is characterised by the presence of non-caseating granulomas and the proliferation of epithelioid cells.[1] In general, sarcoidosis affects young adults with a slightly higher prevalence in females.[2] The lungs and mediastinal lymph nodes are involved in over 90% cases with thoracic sarcoidosis, accounting for most morbidity and mortality.[3] Hilar and mediastinal lymphadenopathy are common manifestations of sarcoidosis and may be seen as notable abnormality in conjunction with parenchymal disease. The lymphadenopathy is typically symmetrical in distribution with involvement of hilar, para-tracheal, aorto-pulmonary window and sub-carinal region. Non-necrotising granulomas are characteristic histological finding of sarcoidosis but necrosis or cavitation occurs in less than 1% of patients.

Diagnosis of sarcoidosis is based on compatible clinical and radiological findings with histological finding of non-caseating epithelioid cell granulomas and the elimination of other granulomatous disease.[4,5] However, in our case significant necrosis was visible in mediastinal lymph nodes on computed tomography of thorax. Rockoff and Rohtagi[6] in a systematic review reported that the relative incidence and classification of unusual thoracic manifestations of sarcoidosis. Karkhanis and Joshi[7] reported a case of parotid swelling, provisionally diagnosed as tuberculous inflammation in view of granuloma showing caseous necrosis on cytology, later on it was diagnosed as sarcoidosis. The CT of thorax of this patient showed homogenously enhancing mediastinal lymph nodes.[7]

Dhooria *et al*[8] compared endobronchial ultrasound characteristics of lymph nodes in patients with tuberculosis and sarcoidosis and concluded that heterogenousechotexture and coagulation necrosis sign in lymph nodes favour a diagnosis of tuberculosis over sarcoidosis. This finding was in contrary to ours in which sarcoidosis presented with necrosis in mediastinal lymph nodes.

We report this case of sarcoidosis with significant necrosis in mediastinal lymph nodes, as this is a rare phenomenon and can mislead the treating physician to diagnose it as tuberculosis.

References

1. Colby TV, Carrington CB. Infiltrative lung disease. In: Thurlbeck WM, editor *Pathology of the Lung*. Stuttgart: Thieme Medical; 1988:pp425–517.
2. Statement on sarcoidosis. Joint Statement of the American Thoracic Society (ATS), the European Respiratory Society (ERS) and the World Association of Sarcoidosis and Other Granulomatous Disorders (WASOG) adopted by the ATS Board of Directors and by the ERS Executive Committee, February 1999. *Am J Respir Crit Care Med* 1999;160:736–55.
3. Hillerdal G, Nöu E, Osterman K, Schmekel B. Sarcoidosis: epidemiology and prognosis; a 15 year European study. *Am Rev Respir Dis* 1984;130:29–32.
4. Baughman RP, Teirstein AS, Judson MA, Rossman MD, Yeager H Jr, Bresnitz EA, *et al*. Clinical characteristics of patients in a case control study of sarcoidosis. *Am J Respir Crit Care Med* 2001;164:1885–9.
5. Yeboah J, Afkhami M, Lee C, Sharma OP. Necrotizing sarcoidgranulomatosis. *Curr Opin Pulm Med* 2012;18:493–8.
6. Rockoff SD, Rohatgi PK. Unusual manifestations of thoracic sarcoidosis. *AJR Am J Roentgenol* 1985;144:513–28.
7. Karkhanis V, Joshi JM. All that caseate is not TB. *Lung India* 2007;24:100–1.
8. Dhooria S, Agarwal R, Aggarwal AN, Bal A, Gupta N, Gupta D. Differentiating tuberculosis from sarcoidosis by sonographic charecteristics of lymph nodes on endobronchial ultrasound: a study of 165 patients. *J Thoracic Cardiovasc Surg* 2014;148:662–7.