INTRODUCTION

Radiographic lesions in the lungs are very common in individuals positive for Human Immunodeficiency Virus (HIV) antibody. Majority of lesions are of infective or neoplastic in origin. We present a case of chemical pneumonitis following regurgitation of kerosene oil in a patient positive for human immunodeficiency virus (HIV) antibodies. Chemical pneumonitis is diagnosed with a characteristic clinical history of regurgitation of fluid and gravity-dependent infiltration in the lung on chest x-ray. Another condition arising from the aspiration of the fluid/chemical is negative-pressure pulmonary oedema which results from laryngeal spasm following regurgitation of fluid. Chest radiography, however, distinguishes it from chemical pneumonitis. Bilateral infiltration is seen in the former, while lesion at dependent portion of right lung is seen in the latter condition.

Key words: Chemical pneumonitis; Kerosene oil; HIV

CASE PRESENTATION

A 41-year-old male patient had pain over right side of chest and a cough with mucoid expectoration, of three-day duration. Expectorations had peculiar smell. He was positive for HIV antibody and was taking anti-retroviral drugs (tenofovir, lamivudine and efavirenz) for the past 5 years. His CD4+ T cell count was 549/µl at the time of presentation. Although the patient did not show sign of cyanosis; crackles were present at the right lung base on auscultation. The patient's erythrocyte sedimentation rate (ESR) was 24 mm in the first hour. Chest x-ray obtained shortly thereafter (Figure 1A) showed consolidation in the lower zone of the right lung. Sputum microscopy and a nucleic acid amplification test for Mycobacterium tuberculosis were negative. Sputum culture for aerobes and anaerobes was also unremarkable. Of note, the patient had a history of regurgitation of kerosene oil (hydrocarbons) three days earlier, when he took kerosene oil full mouth for a few minutes as a home remedy for toothache. Thereafter he had pain over chest. Kerosene
oil exposure, consolidation of the dependent part of the lung on chest x-ray and exclusion of bacterial infection led the diagnosis of chemical pneumonitis. The patient was prescribed bronchodilator and anti-inflammatory drugs. He recovered from chest pain and cough within two weeks. A chest x-ray (Figure 1B) obtained after two weeks showed resolution of the consolidation.

**DISCUSSION**

The CD4+ T cell counts in patients positive for HIV antibody predict possible differentials of pulmonary lesions. Tuberculosis and bacterial pneumonia are the likely diagnoses in HIV-seropositive patients who have CD4+ T cell >500/µL. The diagnosis of chemical pneumonitis is clinical, based on circumstantial history and compatible radiographic findings, i.e. infiltrates in the superior-lower lobe or posterior-upper lobe in the supine state and in the basal segments of the lower lobe in the standing position preferably in right lung.

While initial radiographs may be normal, delayed radiographs are important in significant exposures. Long-term complications are bronchiectasis, bronchiolitis obliterans, and lung destruction. Prophylactic antibiotic and corticosteroids for lessening inflammation are advised in the treatment of chemical pneumonitis. Several multicentric clinical trials have concluded that antibiotic and corticosteroids are of no benefit in the treatment of chemical pneumonitis especially in initial stage. Negative pressure pulmonary edema is another condition that develops during regurgitation/aspiration of fluid, as a result of laryngeal spasm; however, the radiological feature of negative pressure pulmonary edema is bilateral symmetrical infiltration, which is in contrast to consolidation in the dependent part of the lung, commonly seen in chemical pneumonitis.

**CONCLUSION**

History of regurgitation of fluid in a patient with the recent consolidation in dependent part in CXR alerts for Chemical pneumonitis. Differential condition negative pressure pulmonary edema due to laryngeal spasm is distinguished from chemical pneumonitis by imaging.

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