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Case Report

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Simultaneous diagnosis of cryptogenic organizing pneumonia and HIV in a 45 year old man

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Summary

Background: Cryptogenic organizing pneumonia (COP) is a small airways disease characterized by intraluminal polyps of myxoid connective tissue which follows a subclinical course and is associated with infectious as well as non infectious processes The concomitant occurrence of human immunodeficiency virus (HIV) infection and COP has rarely been reported. We describe a unique case in which COP was a presenting feature in a patient with newly diagnosed HIV Infection.

Case Report: A 45 year-old man with chronic active smoking presented to the ER with 15 months history of cough productive of minimal whitish sputum without frank or streaks of blood, low grade fever, anorexia and 4–6 lbs weight loss in past 6 months. He had three life time sexual partners. PPD status were unknown. He was extensively worked up as the Chest X ray showed cystic lesions all of which came back normal. Patient also received HIV test which was positive with CD 4 count of 546. He received bronchoscopy which revealed cryptogenic organising pneumonia. He was placed on steroids tapering course which helped in relieving the symptoms.

Conclusions: HIV infection with CD 4 count above 500 has seldom been reported having COP with this case being the second in literature but this entity should be kept in mind during management of these patients.

key words: **bronchogenic obliterans • pneumonia • HIV**

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Background

Cryptogenic organizing pneumonia (COP) is a small airways disease characterized by intraluminal polyps of myxoid connective tissue which follows a subclinical course and is associated with infectious as well as non infectious processes [1]. The concomitant occurrence of human immunodeficiency virus (HIV) infection and COP has rarely been reported. We describe a unique case in which COP was a presenting feature in a patient with newly diagnosed HIV Infection.

Case Report

A 45 year-old man presented to the ER with 15 months history of cough productive of minimal whitish sputum without frank or streaks of blood, low grade fever, generalized muscle and joint pains. He had no night sweats but had anorexia and 4-6 lbs weight loss in past 6 months. Patient admitted smoking cigarettes (1/2 pack for past 25 years) and marijuana with moderate alcohol consumption. He had three life time sexual partners. He was originally from West Africa and had been in the US for 16 years. PPD and HIV status were unknown. He was a part time car mechanic and was living with wife and 2 kids. There was no past medical, surgical history or known allergies.

On physical examination he had low grade fever (100.3F), tachycardia of 103/min and normal oxygen saturation on room air. There was no lymphadenopathy. He had inspiratory crackles on the right lower lung zone. He had a leukocytosis of 13 K/uLwith neutrophilia of 93%. Hemoglobin was 13 gm/dl, MCV was 73 fL and platelets were 198'000/uL.Hepatic profile was significant for protein-albumin dissociation (7.3/2.4). Hepatitis serology was negative for antibodies to Hepatitis A and C, negative HBsAg. Chest X ray showed bibasilar cystic *vs.* cavity lesions. CT chest with contrast showed ground glass opacities throughout both lungs (Figure 1). Active pulmonary tuberculosis was ruled out.He was treated with Ceftriaxone and Azithromycin for possible community-acquired pneumonia. Rapid HIV test was positive with HIV RNA viral load of 89,000 copies/ml and a CD4 count of 546 cumm (28%). Bacterial and fungal blood cultures were negative. Serologic tests for *Aspergillus*, *Crytpococcus*, *Echinococcus*, *Toxoplasma gondii*, *Leptospira* and urine for *Legionella* and *Gonorrhoea* were all negative. He was found to have negative RPR but positive TPPA. Considering his young age autoimmune work up was sent for SLE, RA, Sjogren Syndrome, and Wegener's granulomatosis which came back negative. CRP and ESR were elevated (18 mg/dl and 80 mm/hr respectively). Clinical symptoms improved slightly. He underwent VATS (Video Assisted Thoracic Surgery) and tissue histology from right lower and upper lobes specimens showed myxoid intra-luminal material surrounded by fibroblasts and hemosiderin with slight interstitial inflammation consistent with COP (Figure 2). He was started on prednisone at 1 mg/kg body weight once daily with significant improvement in his symptoms. Patient was followed up on outpatient basis. Steroids were tapered off in 8 months time. On his regular office visits his CD 4 count trended down to 382 Atripla therapy was initiated. He reported no reoccurrence of symptoms on his last visit in August 2011 and is at present tolerating his HAART medications with no side effects.

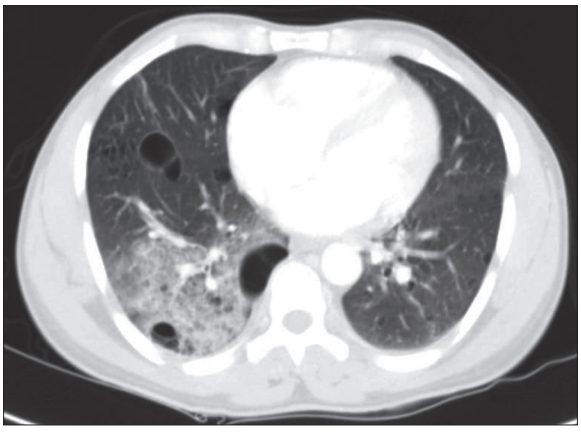

Figure 1. CT scan clearly showing the cystic processes in this patient.

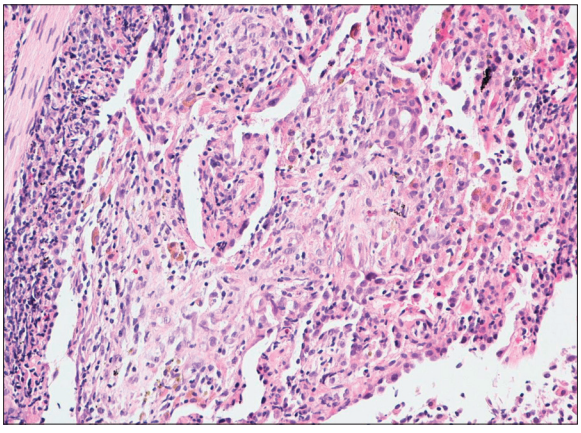

Figure 2. H& E staining of lung biopsy which shows intraluminal myxoid material and polypoid mass of granulation tissue filling the lumen of alveolar duct (Masson body) and interstitial fibroblasts and hemosidrin deposits due to mild chronic inflammation.

Discussion

The typical presentation is productive cough, dyspnea and illness of usually less than 3 month duration and mean age is 55 years (compared to our patient who is 45 years and duration of symptoms is 15 months) [6,7]. The duration of symptoms has been described from short [4] to chronic [2,5]. This condition is more common in male gender except for two patients who were females[4] and affects non smokers or ex smokers approximately two fold more than smokers(compared to our patient who is smoker). Only one patient was reported as smoker and was younger than our patient [6,8]. To date, to author's knowledge, only 12 cases of BOOP have been reported in HIV infected patients. It has been described almost exclusively in those with advanced AIDS compared to our patient who had CD4 lymphocyte count of 546/cumm. Only two patients had simultaneous diagnosis of AIDS and COP [5]. Whether it is HIV itself or its complication which results in COP is unclear. The diagnosis is usually histopathological. BAL fluid analysis may support the diagnosis demonstrating the presence of lymphocyte counts higher than 25%. Usually, there is lymphocyte predominance in BAL in HIV infected patients [9] as compared to non-HIV infected patients who generally have

mixed pattern with increased levels of lymphocytes, neutrophils, and eosinophils [10,11]. Open or thoracoscopic lung biopsy in HIV-infected who have undiagnosed chest radiographic abnormalities has a low morbidity and high diagnostic yield [12]. Both HIV and non-HIV infected patients respond well to corticosteroid therapy. Symptomatic and radiologic improvements has been seen within 48 hours of treatment in most patients [5]. The effective dose of corticosteroids have not been established and minimal dose for minimal period of time is recommended. Generally, oral Prednisone is initiated at 1 mg/kg for 1-3 months, followed by gradual tapering, usually involving 40 mg/day for 3 months and then 10–20 mg daily or every other day for a total of 1 year [13,14]. Corticosteroids use in patients with AIDS and concomitant COP can increase the risk of opportunistic infections. In the literature however only one case has been reported with *Aspergillus fumigatus* lung infection who had CD4 lymphocyte count of 2/cumm [15] and died within 2 months of therapy. Relapse after the corticosteroid dose is however reduced but is not uncommon [2,3].

CONCLUSIONS

Cryptogenic Orgaizing pneumonia is a rare entity that should assessed in patient with unexplained radiologic findings and atypical clinical presentation. The treatment usually involves steroids. There has been reoccurrence of the disease following cessation of steroids.

Statement

This study was not funded. The authors declare that there is no conflict of interest.

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