International Journal of Medicine and Medical Sciences ISSN: 2167-0447 Vol. 3 (2), pp. 363-364, February, 2013.
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Case report

Role of clinical auditing and supervision in diagnosing lymphoid interstitial pneumonitis in a child with human immunodeficiency virus: a case report of a 6 year old boy from Yola, Nigeria

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Received 20 December, 2012; Accepted 23 February 2013

Cases of Lymphoid interstitial pneumonitis in patients with human immunodeficiency virus are now becoming more common than was previously thought off. The pneumonitis responds well to systemic steroids, and fatal cases are rare if diagnosed and commenced on appropriate therapy. The diagnosis of lymphoid interstitial pneumonitis in this case report was achieved through our clinical auditing and supervision as part of risk management of patients. Our patient did well on prednisolone before antiretroviral drugs was introduced based on WHO clinical stage 3 disease, and we present details of the case herein.

Key words: Lymphoid interstitial pneumonitis, Human immunodeficiency virus, risk management, Yola, Nigeria.

INTRODUCTION

Carrington et al., (1966) first described lymphocytic interstitial pneumonia (LIP), which is characterized by diffuse infiltration of lymphocytes and plasma cells in the interstitial space of the lung. The cause of LIP is unclear; however, it has been associated with idiopathic or acquired human immunodeficiency virus (HIV), Epstein-Barr virus infection, and autoimmune disorders (Koss et al., 1987, Swigris et al., 2002, Ingiliz et al., 2006, Guinee 2010, and Tian et al., 2012). The number of reported cases of LIP in our environment and other Sub-Saharan countries overwhelmed by the burden of HIV are limited, possibly due to high cases of tuberculosis (TB) associated with HIV (Anthony et al., 2004 and Amorosa et al., 1992). Another reason could be little knowledge of LIP with clinical presentation overlapping with that of TB among younger doctors, coupled with lack of relevant laboratory facility to substantiate LIP. This makes TB a better diagnostic option as depicted in this case report. Gladly, LIP can be diagnosed clinically based on clinical findings and chest X-ray in low health resource communities like ours (Anthony et al., 2004). Here we describe a case of LIP in a child with HIV that was initially thought to have treatment after failure for TB. Treatment after failure in TB is defined as a TB patient who is started on a re-treatment regimen after having failed previous treatment (Anthony et al., 2004 and WHO 2001). Diagnosis of LIP in the index patient was made possible at Paediatric Department of Federal Medical

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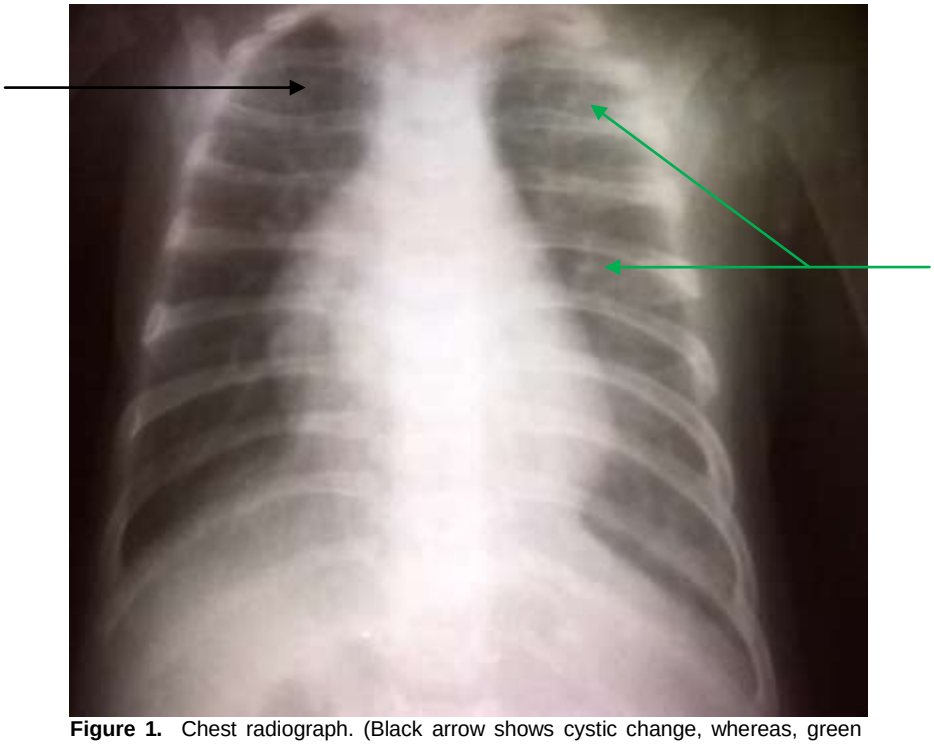

Figure 1. Chest radiograph. (Black arrow shows cystic change, whereas, green arrows point to reticulonodular lesions on the lung fields).

Centre Yola, through risk management and quality evaluation of our patient as described by Donnabedian (1969).

Case report

A 6 year old boy was brought to our health facility due to fever, respiratory distress accompanied by wasting, cyanosis, parotid enlargement, generalized lymphadenopathy and grade 4 finger clubbing. Past medical history revealed background stage 3 HIV infection and had previous treatment for TB. His vital signs were as follows: blood pressure 100/60 mmHg; pulse rate 90/min; respiration rate 45/min, and body temperature 37.9 ◦C. Chest auscultations revealed crackles in both lung fields; the heart sounds were normal and abdomen showed hepatomegaly. Other systems were unremarkable. A plain chest radiograph showed diffuse reticulonodular pattern with a cystic change (Figure 1). Lung biopsy, blood gases and CD4 count were desired but logistics problems and lack of appropriate facilities in our health centre constrained us from doing these tests. Treatment after failure for TB was entertained, but after the patient was presented in our clinical audit and supervisory meeting as part of our departmental risk management activities, TB was discarded in favor of LIP. Patient was placed on prednisolone after excluding the presence of bacterial infection, and oxygen was also administered. He improved markedly and was subsequently placed on antiretroviral drugs based on WHO clinical stage 3 disease before he was discharged on follow ups.

DISCUSSIONS

There are great similarities in clinical findings of LIP and TB and if patients are not thoroughly evaluated, the diagnosis of LIP could be missed as was the case in our patient. Moreover, TB being endemic in our population will heighten TB diagnosis even in the setting of LIP. Furthermore, a report has indicated increase occurrence of TB cases because of severe immunosuppression as a result of emergence of HIV (Anthony et al., 2004). This epidemiologic observation would further elevate the tendencies to misdiagnose LIP for TB as seen with index patient. In order to minimize the diagnostic overlap between LIP and TB, researchers working in developing countries tagged as being low in terms of health care resources observed some features that strongly favor LIP. These are respiratory distress, parotid enlargement, generalized lymphadenopathy, finger clubbing, and reticulonodular pattern on chest radiograph (Anthony et

al., 2004). All these were found in our patient, and the fact that he completed anti TB regimen without significant improvements favors LIP in current case.

In fact, the strong association between these features and LIP made other workers to argue the place of lung biopsy considering the invasiveness, expertise, complications and money that is involved in lung biopsy, if diagnosis could be established on clinical grounds. While some authors are for lung biopsy where facility abound, others are of the opinion that a lung biopsy would be indicated when symptoms associated with LIP are unresponsive to therapy (Ji-Young et al., 2011). In these cases, malignant lymphoma must be ruled out. Our patient may not require lung biopsy because he responded well to prednisolone. Colleagues elsewhere have used CT scan to help guide their diagnosis, however, CT scan may have a variety of different findings and none is pathognomonic for LIP (Ji-Young et al., 2011). Having this in mind, coupled with the fact that CT scan is expensive and beyond the reach of most of our patients, CT-scan was not a strong priority in our patient.

Steroid therapy has been used with success in LIP; however, some reports have stated only 52% of patients improved with steroid treatment, and 11% remained unresponsive (Swigris et al., 2002 and Strimlan et al., 1978). For those unresponsive to therapy, 37% fatality rates were recorded. [2, 6] Other immune suppressants like cyclophospamide have been used empirically with success where initial steroid therapy has failed (Ji-Young et al., 2011). Of emphasis are the management mix we are using to strive for clinical excellence. One of these is risk assessment based on clinical audit and supervision of admitted cases using the Donabedian model for quality (Donnabedian, 1969). This model mixes rational scientific reasoning, interpersonal social, psychosocial interaction among health professionals and their patients. Our patient benefitted immensely from this approach that led to his diagnosis and subsequent management.

CONCLUSION

There is now growing number of LIP due to HIV, and clinical manifestation of LIP and TB tend to overlap. More experienced Paediatricians would be required to guide younger ones in order to make such diagnosis. Risk management and quality evaluation of patients via clinical auditing and supervision of cases was found to be effective tools for this. We hereby recommended their application in clinical practices.

Competing interests

No potential conflict of interest relevant to this paper was reported.

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