CASE REPORT

AN INTERESTING CASE OF NON-RESOLVING PNEUMONIA

Lakshmikanth Narasegowda¹, Harish G. M², Kamalesh T. N³

HOW TO CITE THIS ARTICLE:

Lakshmikanth Narasegowda, Harish G. M, Kamalesh T. N. "An Interesting Case of Non-Resolving Pneumonia". Journal of Evolution of Medical and Dental Sciences 2015; Vol. 4, Issue 27, April 02; Page: 4726-4730, DOI: 10.14260/jemds/2015/685

ABSTRACT: Non-resolving pneumonia is defined as pneumonia with a slow or partial resolution of symptoms or radiological abnormalities in spite of adequate antibiotic therapy. It is a common problem encountered in clinical practice estimated to be responsible for significant percentage of inpatient pulmonary consultations and bronchoscopies. Here we report an interesting case of non-resolving pneumonia anemia in a young female, who was subsequently found to have endobronchial tuberculosis on fiberoptic bronchoscopy, confirmed by biopsy.

KEYWORDS: Non-resolving pneumonia, endobronchial tuberculosis, fiberoptic bronchoscopy.

INTRODUCTION: Normal resolution of pneumonia is not easily defined and may vary depending upon the underlying cause. Patients usually should have subjective improvement within 3 to 5 days of treatment;^{1,2} more specific clinical criteria for resolution include improvement in tachycardia and hypotension, which are expected to improve in two days; fever, tachypnea, and oxygen saturation, which are expected to improve within three days; and cough and fatigue, which may take 2 weeks or more to subside.^{3,4} The 2009 British Thoracic Society guidelines for the management of community-acquired pneumonia suggest that chest x-ray and hospitalization be considered for outpatients with pneumonia who fail to improve after 48 hours of treatment.⁵ Common causes of unresolved pneumonia are aspiration of foreign bodies, space occupying lesions, bronchiectasis, sequestration lung, etc. Endobronchial tuberculosis (EBTB) may present as non-resolved pneumonia. It is a rare but important cause for non-resolving pneumonia in TB endemic countries.

The common symptoms of endobronchial TB include cough with expectoration, hemoptysis, breathlessness, and wheeze. However, this entity remains a diagnostic challenge even in countries with a high prevalence of TB. Despite widely available diagnostic testing, endobronchial TB is a major cause of morbidity as it frequently heals with concentric scarring resulting in bronchostenosis and atelectasis. The incidence of EBTB has been increasing in recent years and is often negative for sputum AFB as is in our case.

CASE REPORT: A 21 year old female, working in a software company presented to us with complaints of productive cough, fever, and weight loss of 5 weeks duration. Cough was productive with mucopurulent expectoration with no diurnal or postural variation and not associated with hemoptysis. Fever was of low grade, not associated with chills and rigors, headache or joint pains and was relieved by taking antipyretics. The patient also complained generalized weakness and significant weight loss over last 5 months. None of her family members were documented to have suffered from TB. Also patient had no history of contact with tuberculosis patient or any past history of having taken ATT. Menstrual history was normal. Before admission, she had taken several oral antibiotics.

CASE REPORT

On examination, she was thinly built and nutritional status was poor. She was pale but had no cyanosis, jaundice, clubbing or palpable lymph nodes. She was afebrile and her resting respiratory rate was 20/min. On examination of respiratory system, signs of consolidation of left lower lobe were elicited. Examination of other systems were unremarkable.

Investigations showed hemoglobin of 10.1gm/dl, total leucocyte count of 11900/cu mm, with 71% neutrophils, and erythrocyte sedimentation rate (ESR) was 38 mm at the end of one hour. The chest x-ray (CXR) showed left lower zone consolidation. [Figure 1]. Her sputum smear failed to show any AFB on two occasions. Culture of sputum did not yield any growth. Patient was treated with intravenous broad spectrum antibiotics and there was subjective improvement of symptoms. CXR was repeated after 1 week, which showed partial resolution of consolidation and patient was discharged with a course of antibiotics. [Figure 2]

However, after 2 weeks, patient had recurrence of cough and fever and after taking detailed history, thorough physical examination was done and all other reports reviewed. We found monophonic rhonchi in left infra-scapular region, and no other added sounds were heard in other regions. CXR showed increased infiltrates in the left lower zone [Figure 3]. Patient was subjected for fiberoptic bronchoscopy which showed endobronchial multiple white patches all over the left main bronchus with luminal narrowing [Figure 4]. Biopsy was taken and sent for histopathological examination. BAL fluid was sent for Gram stain, AFB stain and culture & sensitivity. BAL fluid showed AFB in smear and biopsy showed typical caseating epithelioid granuloma which confirmed tuberculosis. Patient was started on category one ATT and she showed marked improvement both clinically and radiologically following treatment with anti-tubercular drugs. Patient tolerated ATT well and completed the full course.

DISCUSSION: Endobronchial tuberculosis (EBTB) is defined as tuberculous infection of the tracheobronchial tree with microbial and histopathological evidence.⁶ Endobronchial tuberculosis (EBTB) is a relatively uncommon detected manifestation of a disease like tuberculosis. EBTB is generally found in the younger age group with significant proportion of cases seen in patients of less than 35 years of age.⁷

The common symptoms of endobronchial TB are productive cough, hemoptysis, breathlessness, and wheeze. Sputum production may be variable the barking cough that does not respond to antitussives but responds to ATT along with steroids may be a feature of EBTB.⁸ Hemoptysis may occur, rarely massive in quantity. Lymph node rupture may cause chest pain in sternal or parasternal region. Physical examination may reveal diminished breath sounds and localized low-pitched wheeze or rhonchi. Classical monophonic wheeze may be heard in about 15% of the patients.^{9,10} It is known that the key to the diagnosis of endobronchial TB is a high index of suspicion and prompt performance of diagnostic bronchoscopy. Apart from visualization of bronchial tree abnormalities suggestive of endobronchial TB, fiberoptic bronchoscopy (FOB) can also provide good material for confirming suspected cases of pulmonary TB particularly when sputum smears are negative for AFB.¹¹ EBTB on FOB can present as these types of lesions: (i) actively caseating, (ii) edematous-hyperemic, (iii) fibrostenotic, (iv) tumorous, (v) granular, (vi) ulcerative, and (vii) nonspecific bronchitis.¹² The prominent lymph nodes are seen as greyish-yellow masses through the bronchial mucosa. Hemorrhage and granulation tissue may also be seen. Fistula formation and caseous material draining into bronchus may also be observed. Common and delayed complications

CASE REPORT

of EBTB are bronchial stenosis and strictures which may be irreversible. The prognosis of fibrostenotic endobronchial TB is poor. In a case series by Bachh et al.,¹¹ all cases described remained in a fibrostenotic state during treatment and almost half of these cases showed complete bronchial obstruction even after 2 to 3 months of treatment. Tracheobronchial stenosis can cause intractable tuberculosis and make patients chronic infection sources of tuberculosis, cause bronchiectasis and other grave pulmonary complications. There, it is recommended to follow up patients with unilateral alveolonodular or miliary infiltrates to rule out and minimize stenotic outcomes due to coexistent endobronchial TB. Administration of corticosteroids may be helpful to prevent bronchial stenosis which is an irreversible delayed complication of endobronchial TB. Balloon dilatation, endobronchial stenting and surgical interventions should be considered as an add-on to standard antituberculosis therapy.^{13,14}

CONCLUSION: Non-resolving pneumonia is a common problem encountered in clinical practice. Endobronchial tuberculosis (EBTB) is an important cause for non-resolving pneumonia in tuberculosis endemic countries. Patients with unresolved infiltrates and sputum negative for AFB with suggestive symptoms must be evaluated bronchoscopically, and a microbiological confirmation has to be sought; so that bronchial stenosis, strictures and other grave complications of EBTB be avoided and hence need for surgical intervention averted.

REFERENCES:

1. El Solh AA, Aquilina AT, Gunen H, Ramadan F. Radiographic resolution of community-acquired bacterial pneumonia in the elderly.. J Am Geriatr Soc. 2004 Feb; 52(2): 224-9.
2. Marrie TJ. Mycoplasma pneumoniae pneumonia requiring hospitalization, with emphasis on infection in the elderly. Arch Intern Med. 1993; 153(4): 488.
3. Causes and factors associated with early failure in hospitalized patients with community-acquired pneumonia. Rosón B, Carratalà J, Fernández-Sabé N, Tubau F, Manresa F, Gudiol F. Arch Intern Med. 2004; 164(5): 502.
4. Marrie TJ, Beecroft MD, Herman-Gnjidic Z. Resolution of symptoms in patients with community-acquired pneumonia treated on an ambulatory basis. J Infect. 2004; 49(4): 302.
5. Lim WS, Baudouin SV, George RC, Hill AT, Jamieson C, Le Jeune I, Macfarlane JT, Read RC, Roberts HJ, Levy ML, Wani M, Woodhead MA. BTS guidelines for the management of community acquired pneumonia in adults: update 2009. Pneumonia Guidelines Committee of the BTS Standards of Care Committee. Thorax. 2009; 64 Suppl 3:iii1.
6. Hoheisel G, Chan BK, Chan CH, et al. Endobronchial tuberculosis: Diagnostic features and therapeutic outcome. Respir Med 1994; 88: 593-97.
7. Ip MS, So SY, Lam WK, Mok CK. Endobronchial tuberculosis revisited. Chest; 1986; 89: 727-30
8. Myerson MC. Tuberculosis of the Trachea and Bronchus. Springfield: Charles C. Thomas; 1944: 250-75.
9. Lee JH, Park SS, Lee DH, Yang SC, Yoo BM. Endobronchial tuberculosis: Clinical and bronchoscopic features in 121 cases. Chest 1992; 102: 990-94.
10. Williams DJ, York EL, Nobert EJ, Sproule BJ. Endobronchial tuberculosis presenting as asthma. Chest 1988; 93: 836-38.

CASE REPORT

11. A. A. Bachh, R. Gupta, I. Haq, and G. H. Varudkar, "Diagnosing sputum/smear-negative pulmonary tuberculosis: does fibre-optic bronchoscopy play a significant role," Lung India, vol. 27, no. 2, pp. 58-62, 2010.
12. Chung HS, Lee JH. Bronchoscopic assessment of the evolution of endobronchial tuberculosis. Chest 2000; 117: 385-92.
13. N. Takahashi and T. Horie, "Medical treatment for bronchial stenosis due to endobronchial tuberculosis," Kekkaku, vol. 74, pp. 885-889, 1999.
14. J. K. Han, J. G. Im, J. H. Park, et al., "Bronchial stenosis due to endobronchial tuberculosis: successful treatment with self-expanding metallic stent," American Journal of Roentgenology, vol. 159, no. 5, pp. 971-972, 1992.

Figure 1: Chest X Ray PA view showing left lower zone consolidation on initial presentation of illness

Figure 2: Chest x ray PA view showing partial resolution of left lower zone consolidation following a course of antibiotics

CASE REPORT

Figure 3: Chest x ray PA view showing increase in the left lower zone infiltrates after 2 weeks

Figure 4: Multiple white patchy lesions over the endobronchial surface of left main bronchus with luminal narrowing

AUTHORS:

1. Lakshmikanth Narasegowda
2. Harish G. M.
3. Kamalesh T. N.

PARTICULARS OF CONTRIBUTORS:

1. Post Graduate, Department of General Medicine, Kempegowda Institute of Medical Sciences.
2. Senior Resident, Department of Pulmonary Medicine, Kempegowda Institute of Medical Sciences.

FINANCIAL OR OTHER

COMPETING INTERESTS: None

3. Post Graduate, Department of General Medicine, Kempegowda Institute of Medical Sciences.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Lakshmikanth Narasegowda,
80, 2nd Cross, Laggere Main Road,
Parvati Nagar, Bangalore-560058.
E-mail: dr.lakshmikanth@gmail.com

Date of Submission: 03/02/2015.
Date of Peer Review: 04/02/2015.
Date of Acceptance: 20/03/2015.
Date of Publishing: 02/04/2015.