



Bilateral Bronchiectasis Presenting as Persistent Pneumonia in a 12 year Old Child

Authors

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Abstract

Bronchiectasis in children presents as a wide spectrum of disease severity. Some children have intermittent symptoms of cough and occasional lower respiratory tract infection. Others experience daily cough and produce purulent fetid sputum, requiring frequent hospitalizations for respiratory exacerbations. The diagnosis should be considered in children with a daily productive cough (chronic cough) for longer than 4 weeks. An 12 year old child was admitted to department of paediatrics as a case of non-resolving pneumonia of 2 months duration. Which on investigation and examination was confirmed to be due to bronchiectasis

Keywords: Bronchiectasis, recurrent pneumonia, non resolving pneumonia

Introduction

Persistent pneumonia is characterized by persistence of symptoms and roentgenographic abnormalities of more than three months. Recurrent pneumonia on the other hand is defined as two episodes of pneumonia in one year, or more than three episodes at any time with radiographic clearance between episodes. It is often difficult to determine whether pneumonia is persistent or recurrent, unless there has been a symptom free interval during which chest radiographs have documented clearing of the pneumonia infiltrations. Bronchiectasis in children presents as a wide spectrum of disease severity. Some children have intermittent symptoms of cough and occasional lower respiratory tract infections. Others experience daily cough and produce purulent fetid sputum, requiring frequent hospitalizations for respiratory exacerbations. The diagnosis should be considered in children with a

daily productive cough (chronic cough) for longer than 4 weeks. The cough is frequently described as productive in older children or loose in toddlers and infants. Because small children rarely expectorate, the clinician may observe the child with a loose- sounding cough who swallows after coughing. Bronchiectasis should also be considered in children with chronic or persistent cough not responding to therapy. If children with cough responsive to antibiotics on a recurrent basis, bronchiectasis should be considered.^[1]

Case Report

A 12 year female child was admitted to the department of paediatrics with complaints of continuous cough having purulent fetid sputum for more than 2 months. On examination the child was thin built. The child was undernourished, stunted and wasted. There was clubbing (Fig 1). The child was in respiratory distress. There were

bilateral diffuse, coarse crepitations. The child was admitted with the provisional diagnosis of B/L pneumonia with distress. There was history of recurrent pneumonia since 5 years of age. She had already taken Anti tubercular therapy for 6 months when she was 6 years of age. There is a family history of a sibling death at 5 years of age due to some respiratory illness. Three samples of gastric aspirate for tuberculosis was negative. Mantoux test was negative. Sputum for AFB and CBNAAT were negative. Chest radiography was suggestive of bilateral bronchiectasis (Fig 2). HIV test was negative. The patient could not afford for Cystic fibrosis, Alfa 1 AT deficiency and study for primary immuno deficiency. With the diagnosis of bronchiectasis with secondary infection, she was treated with parental antibiotics, oral multi-vitamins and iron. Chest physiotherapy was done regularly. The child was discharged on multi-vitamins, iron, cotrimoxazole and azithromycin prophylaxis after counselling about the poor prognosis.



Fig 1 showing clubbing

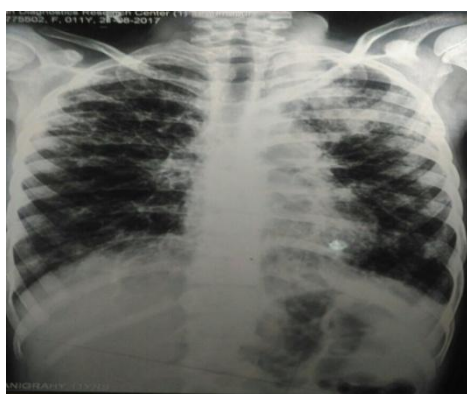


Fig 2 chest radiography showing cystic and reticular appearance in all zones and air space consolidation in upper zone

Discussion

Bronchiectasis should be suspected in children who present with history of persistent or intermittent cough with or without purulent sputum and inspiratory crackles. Bronchiectasis includes features like halitosis and clubbing. Our case presented with persistent cough with sputum and positive family confirmed the diagnosis as familial bronchiectasis.

Chest radiography might be inconclusive as in early stages it might be normal or non-specific. In later stages chest radiography may be more specific for bronchiectasis with findings like specifically dilated and thickened airways that appear as ring-like shadows (of airways that are seen on end) or tram lines (in the case of airways that are perpendicular to the x-ray beam). In our case bronchiectasis was diagnosed by chest radiography. Smyrniotis and colleagues concluded that cough is much more common in patients with asthma (24%), gastroesophageal reflux (15%), and viral bronchitis (11%) than in patients with bronchiectasis (4%). However, if children with gastroesophageal reflux disease or asthma do not respond to therapy, bronchiectasis should be considered. Furthermore, recurrent aspiration can lead to bronchiectasis^[2]. Lai and colleagues reported crackles and wheezing as the most frequent findings of the physical examination^[3]. Digital clubbing is reported in 37-51% of patients with bronchiectasis. Edwards and associates found that children with digital clubbing and chest deformity showed significantly higher scores for extent of bronchiectasis, bronchial wall dilatation and thickness, and overall changes based on CT score^[4]. Complications from bronchiectasis range from mild such as focal atelectasis to severely life threatening such as massive hemoptysis. Other complications consist of heart related morbidity (chronic cor pulmonale) and respiratory failure. In those with more diffuse involvement, significant impairment in lung function may affect physical activity and quality of life. Additional morbidity occurs from side effects of medications used in the management of bronchiectasis, predominantly due to side effects of antibiotics^[5]. In paediatric

age group conditions like cystic fibrosis, Alfa 1 AT deficiency, ciliary dyskinesia, nail patella syndrome, Kartagener syndrome, ataxia telengectasia and few other conditions like TB and HIV predispose towards bronchiectasis.

Conclusion

Although the incidence of bronchiectasis is on a decline due to improved usage of antibiotics but it should be kept as a differential diagnosis in any case of persistent or recurrent cough with or without hemoptysis especially when there is family history and clubbing present, with a background of growth failure.

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Dr Nasreen Ali-conception and design and drafting

Conflict of Interest There was no conflict of interest and no funds received.

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Reference

1. Shrestha L. Bronchiectasis in a positive HIV child: a case report. Journal of Institute of Medicine. 2013 Aug 5;35(2)
2. Smyrnios NA, Irwin RS, Curley FJ. Chronic cough with a history of excessive sputum production. The spectrum and frequency of causes, key components of the diagnostic evaluation, and outcome of specific therapy. Chest. 1995 Oct. 108 (4):991 -7. [Medline].
3. Davies G, Wilson R. Prophylactic antibiotic treatment of bronchiectasis with azithromycin. Thorax. 2004 Jun. 59(6):540- 1. [Medline] .
4. Anwar GA, Bourke SC, Afolabi G, et al. Effects of long-term low-dose azithromycin in patients with non-CF

bronchiectasis. Respir Med. 2008 Oct. 102(10):1494-6. [Medline]

5. Khairkar PS, Pandey M, Balasubramanian M, Pandey A. Cystic Lung Diseases in Pediatric Age Group with Clinicopathological and Radiological Correlation.