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Case Report

Rare presentation of mycoplasma pneumonia: a case report

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ABSTRACT

Mycoplasma is a frequent cause of community acquired pneumonia in children accounting for 20 percent of the cases. Though CNS complications are the most common extra pulmonary manifestations of *M. pneumoniae* stroke is a rare entity. Here we report a case of 7 years old male child with macrolide resistant *M. pneumoniae* complicated pneumonia that developed right hemiparesis and dysphasia. Brain magnetic resonance imaging and angiography showed left fronto parietal infarct and left carotid artery stenosis. He responed to non-macrolide antimicrobial regimen. This potential yet rare complication should be considered and closely monitored for in children presenting with complicated pneumonia.

Keywords: *Mycoplasma pneumoniae*, Stroke, Complicated pneumoniae

INTRODUCTION

Mycoplasma pneumoniae infections occur worldwide and throughout the year. It accounts for 7 to 40 percent of all community acquired pneumonia in children aged 3 to 15 years. CNS complications are known to occur in 0.1 percent of all patients with *M. pneumoniae* infection and in 7 to 16 percent of all hospitalised children.[1] Though CNS complications are the most common extra pulmonary manifestations of *M. pneumoniae*, stroke is a rare entity.[2]

CASE REPORT

A seven year old boy previously well developmentally normal vaccinated till date presented with complaints of fever, cough for 8 days, fast breathing for 5 days, decreased activity and decreased oral intake for 4 days prior to admission. Child was treated with IV ceftriaxone for 2 days prior to admission. There was no other significant family history or past history. At the time of admission in the emergency department he was sick looking, febrile, irritable. Vitals at the time of admission are, heart rate: 170/minute, respiratory rate: 56/minute, blood pressure: 111/71 mmhg, SpO_2: 86 percent in room air, saturations improved with oxygen supplementation. There was decreased air entry in right hemithorax and trachea pushed to left side. Clinical diagnosis of right complicated pneumonia was made.

Chest X-ray showed right lung consolidation with pleural effusion (Figure 1), for which Intercostal drainage tube was inserted and drained around 900 ml fluid drained on day 1. Initial labs showed total leucocyte count of 9300 with neutrophils 70 percent, C reactive protein was 71.8, platelets were 3.4 lakh and sodium was 131 with normal liver function tests and renal function tests. Child was started on injection ceftriaxone, vancomycin and azithromcyin for atypical organism's coverage. In view of persisting distress child was started on High flow nasal canula oxygen. Intercostal tube drain was present for one week with 100 to 150 ml drain per day and was removed after one week as the fluid drain settled, antibiotics were continued. Repeat X-ray has shown persistent consolidation with minimal pleural effusion. CT chest showed bilateral mild pleural effusion, ICD in situ on

right side, Lobar consolidation involving entire right lower lobe, consolidation with air bronchogrmas in both upper lobes, right middle lobe, superior segment of left lower lobe. Initial blood cultures and pleural cultures showed no growth. Azithromycin was given for 5 days. Gene expert and AFB smear both gastric lavage and pleural fluid were negative.

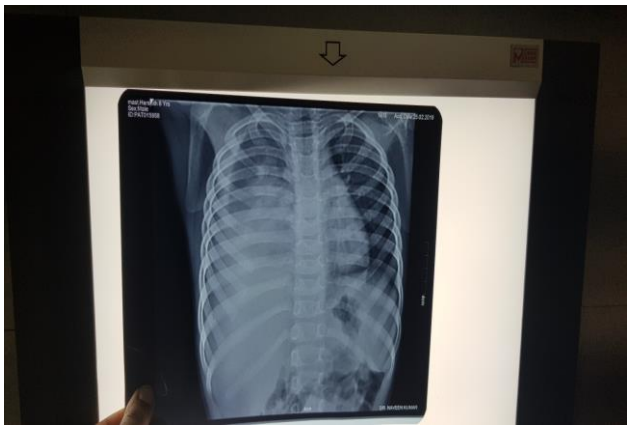

Figure 1: Chest X-ray showing homogenous opacity noted in the left hemithorax silhouetting the right heart border,right hemidiaphragm, right costophrenic angle.Mid shift of the trachea to thr right noted.Consolidation of the left lung with pleural effusion causging mass effect.

On day 8 of admission we noticed that the child had gradual onset deviation of angle of mouth to left side, right hemiparesis with right upper and lower limbs proximal power of 4/5, distal power of 3/5 and dysphasia. Brain magnetic resonance imaging with magnetic resonance angiography was done which showed left frontoparietal infarct and left carotid artery stenosis. 2D echo done to rule out septic focus was normal. Plasma fibrinogen was 335 mg/dl and D-Dimer was 4490 ng/ml FEU. USG doppler carotid was showed high resistance flow in the left internal carotid artery suggestive of distal occlusion. Child was started on heparin and oral anticoagulants. With the differential diagnosis of mycoplasma pneumonia/Tuberculosis in view of CNS involvement and only marginal improvement in respiratory distress mycoplasma IgM, gastric lavage for AFB smear, gene expert and 16 S RNA were sent.

We went ahead and did a bronchoscopy and broncho alveolar lavage was sent for AFB smear, gene expert, BAL culture and mycoplasma PCR. Child was started on levofloxacin emperically suspecting macrolide resistant *M. pneumoniae*. Child showed clinical improvement respiratory distress settling down, oxygen requirement better and general well being improved. mycoplasma IgM and PCR were positive, 16 RNA negative, tuberculosis work up negative and BAL culture showed no growth. There is some neurological improvement in the form improvement of power in right upper limb and lower limb but facial palsy and speech difficulty persisting.

Repeat carotid doppler done in which visualised part of the left Internal carotid artery appears asymmetrically small in size with preserved low resistance luminal flow was noted. Child was discharged on oral levofloxacin for a total of 14 days and oral aspirin. At the time of discharge he was noted to have residual weakness right upperlimb and lowerlimb weakness and residual speech deficit, advised to continue home physiotherapy. Child was reviewed after 2 weeks of discharge, has only occasional cough, near normal power of right upper and lowerlimbs.

DISCUSSION

Mycoplasma pneumonia is a common pediatric infection seen in children between 5 to 15 years. *M. pneumoniae* was identified in 16% and 23% of children 5 to 9 years and 10 to 17 years, respectively.[2] Lower respiratory tract infection due to *M. pneumoniae* is usually mild and self limting explaining why the term Walking pneumonia is often used to describe pneumonia caused by *M. pneumoniae*.[2] In this case child had a complicated pneumonia with effusion. CNS complications are the most common extra pulmonary manifestations of *M. pneumoniae* which include encephalitis, transverse myelitis, aseptic meningitis, gullian barre syndrome, bells palsy, peripheral neuropathy.[1,3] The pathogenesis of the CNS disease is uncertain. Possibilities include direct infection and an immune-mediated reaction.[3] Stroke as a complication of *M. pneumoniae* infection is rare and very few case reports are present in literature.[4,5,6]

According to a systemic review done by mele et al. in which he reviewed all the case reports of Stroke associated with recent *M. pneumoniae* infection it is found that 39 patients had a large vessel occlusion (internal carotid artery, proximal MCA or basilar artery occlusion). Prognosis of stroke related to recent MP infection was good in a majority of patients. However, this condition can lead to death related to respiratory failure at the early phase, irrespective of stroke severity. Once passed the early stage, the prognosis was good, even in case of large cerebral infarction.[7]

Treatment of *M. pneumoniae* pneumonia complicated with stroke or cerebral infarction requires aggressive antibiotic therapy, anticoagulation therapy. Symptomatic management like controlling elevated intracranial pressure and rehabilitation training is also important to recovery. *M. pneumoniae* resistant to macrolides has been reported in Asia, France, Italy, Israel, and the United States. In the United States, studies published in 2015 report macrolide resistance in 3.5 to 13.2 percent of *M. pneumoniae*. The main mechanism of resistance has been shown to be due to mutations in the domain of 23S rRNA of *M. pneumoniae*.[7,8] According to a study done by Y. Zhou it is found that the clinical presentation , incidence of complications are more severe in macrolide resistant pneumonia compared to mycoplasma sensitive pneumonia.[9,10] To summarize our child had macrolide

resistant *M. pneumoniae* complicated pneumonia with a rare CNS complication i.e stroke.

CONCLUSION

Though rare in cases of complicated pneumonia presenting with stroke or other CNS complications *Mycoplasma pneumonia* should be considered and the possibility of macroilde resistance should also be kept in mind as early diagnosis and adequate antibiotic therapy results in good prognosis with no long term sequalea.

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