Unusual complication of Mycoplasma pneumonia in a five-year-old child
Pratap Kumar Patra and Thirunavukkarasu Arun Babu
Department of Pediatrics, Indira Gandhi Medical College and Research Institute (IGMC&RI), Pondicherry, India

CASE REPORT

Please cite this paper as: Patra PK, Arun Babu T. Unusual complication of Mycoplasma pneumonia in a five-year-old child. AMJ 2013, 6, 2, 73-74. http://doi.org/10.21767/AMJ.2013.1543

Corresponding Author:
Thirunavukkarasu Arun Babu
Department of Pediatrics, Indira Gandhi Medical College & Research Institute (IGMC&RI), Pondicherry, India
Email: babuarun@yahoo.com

Background

*Mycoplasma pneumoniae* (Mp) is a significant cause of pneumonia in children above five years of age. It commonly causes tracheobronchitis and bronchopneumonia. The pulmonary complications of mycoplasma infection include severe and rapidly progressive pneumonia in the immunocompromised followed by acute respiratory distress syndrome, however empyema is extremely rare. We report a rare case of empyema secondary to *Mycoplasma pneumoniae* infection in a five-year-old child.

Case details

This child presented with complaints of cough, congestion and fever over the preceding seven days. On examination the child had a fever of 39.3°C with a congested throat but no evidence of rhinitis or lower respiratory involvement was present. The child was started on oral amoxicillin for acute pharyngitis and discharged. However, the child was brought to the hospital again after two days due to increasing fever and cough. Respiratory system examination revealed reduced air entry on right side but with no other adventitious sounds. Chest X-ray revealed opacification over the right mid zone area. His initial investigations revealed Haemoglobin - 11.3gm%, Total Leucocyte Count - 6450 cells/cu mm, Differential Count - N 72, L 18, M 03, E 07 and significantly elevated C-reactive protein (70mg/dl). He was hospitalised and given intravenous cefotaxime and clarithromycin. There was no clinical improvement after three days of therapy and the child continued to remain febrile. His blood culture did not reveal any growth. IgM antibodies for Mp by enzyme linked immunoassay (EIA) were positive with titres of 1: 5120. Liver function test on day four of admission revealed SGPT 265 U/L, SGOT 226 U/L, and total serum bilirubin 0.22mg/dl for which clarithromycin was withdrawn from the antibiotic regimen and oral doxycycline was added. Liver function tests improved following the withdrawal of clarithromycin. There was no clinical improvement after three days of therapy and the child continued to remain febrile. His blood culture did not reveal any growth. IgM antibodies for Mp by enzyme linked immunoassay (EIA) were positive with titres of 1: 5120. Liver function test on day four of admission revealed SGPT 265 U/L, SGOT 226 U/L, and total serum bilirubin 0.22mg/dl for which clarithromycin was withdrawn from the antibiotic regimen and oral doxycycline was added. Liver function tests improved following the withdrawal of clarithromycin. Repeat chest X-ray revealed extension of consolidation up to right mid zone and right lower zone with ipsilateral massive pleural effusion (Figure 1). A CT scan of the chest revealed consolidation of the right mid and lower zone along with pleural effusion for which thoracocentesis was performed.

Implications for Practice

- Mycoplasma pneumonia causes primary atypical pneumonia in older children.
- Mycoplasma pneumonia usually runs an uncomplicated course in most patients.
- Massive pleural effusion and empyema can complicate Mycoplasma infection in children.
- Mycoplasma should be considered in differential diagnosis while encountering syn-pneumonic effusions and empyema.

Abstract

*Mycoplasma pneumoniae* is common agent causing community acquired pneumonia in children. However, the course of illness is usually benign and is rarely associated with pulmonary complications. We report a five-year-old child with massive pleural effusion and empyema secondary to Mycoplasma pneumonia infection. This potential yet rare source of infection should be considered in young patients where resolution of symptoms from pneumonia is delayed.

Key Words

*Mycoplasma pneumoniae*, Pleural Effusion, Empyema

Mycoplasma pneumoniae: An overview

Mycoplasma pneumonia is a common cause of pneumonia in older children. It is often associated with a benign course and is rarely associated with severe or life-threatening complications. However, it is important to consider Mycoplasma pneumonia in the differential diagnosis of community-acquired pneumonia, especially in patients with atypical presentations or atypical radiographic findings. Mycoplasma pneumonia is caused by *Mycoplasma pneumoniae*, a gram-negative, pleomorphic, nonmotile bacterium that is transmitted through respiratory droplets.

Diagnosis

The diagnosis of Mycoplasma pneumonia is typically made through a combination of laboratory and imaging studies. Serological testing, such as enzyme-linked immunosorbent assay (ELISA) or immunofluorescent antibody test (IFAT), can be used to detect specific antibodies to *M. pneumoniae*. In addition, Epstein-Barr virus (EBV) IgM antibody testing can be helpful in distinguishing EBV-associated pneumonia from Mycoplasma pneumonia.

Immunocompromised patients are at increased risk of severe or life-threatening complications from Mycoplasma pneumonia, including empyema and pneumatoceles. Therefore, it is important to consider the possibility of Mycoplasma pneumonia in patients with these presentations, even if the initial clinical presentation is relatively benign.

Treatment

The treatment of Mycoplasma pneumonia typically involves antibiotic therapy. Clarithromycin is the first-line treatment, followed by erythromycin or doxycycline. In cases of severe or life-threatening complications, such as empyema, surgical intervention may be necessary. Additionally, it is important to monitor and manage potential complications, such as pneumatoceles and pleural effusions.

Conclusion

Mycoplasma pneumonia is a significant cause of pneumonia in children above five years of age. Although the course of illness is usually benign, it is important to consider Mycoplasma pneumonia in the differential diagnosis of community-acquired pneumonia, especially in patients with atypical presentations or atypical radiographic findings. Early recognition and appropriate treatment are key to successful management of this condition.
performed and 110 ml of pleural fluid was drained which was exudative in nature. Pleural fluid gram staining and culture did not reveal any organisms. The intercostal tube continued to drain for next seven days and was then removed. He received oral doxycycline and was discharged subsequently after 16 days of hospitalisation. The child was asymptomatic and had a normal chest X-ray on follow-up after three months.

Figure 1: Chest X-ray of five-year-old boy showing massive pleural effusion on the right side as a result of infection arising from *Mycoplasma pneumoniae*

Discussion

Pneumonia arising from *Mycoplasma pneumoniae* usually runs a benign course but respiratory and extra-pulmonary complications can occur. Pleural effusion, if it occurs, is usually a small amount of effusion which is self-limiting. Our patient had a large pleural effusion with empyema requiring chest tube drainage for more than a week.

The demonstration of elevated IgM antibodies by either indirect immunofluoresence or EIA is required for the diagnosis. Alternatively, a fourfold increase in IgG antibodies by Complement Fixation Test or EIA can also provide the diagnosis. PCR of nasopharyngeal or throat swab has high specificity (97%) and moderate sensitivity (50 - 70%) in diagnosing mycoplasma infections. The recommended therapy for mycoplasma infection is a 10 day course of clarithromycin or five day course of Azithromycin. Other drugs which are effective include erythromycin and tetracyclines. Our patient had an icteric hepatitis which we attributed to clarithromycin, however it should be remembered that mild hepatitis can be seen with mycoplasma infection itself. Our patient responded well to oral Doxycycline which can be tried when macrolides cannot be given.

In our patient the symptoms did not resolve despite initial intervention, leading to further examination and differential diagnosis which indicated Mp as the cause of the patient’s symptoms. Clinicians should be aware of this potential complication of mycoplasma while treating older children with para-pneumonic effusions so that early diagnosis and appropriate therapy can be instituted.

References


FOR REVIEW

Not commissioned. Externally peer reviewed.

CONFLICTS OF INTEREST

The authors declare that they have no competing interests

PATIENT CONSENT

The authors, Patra PK, Arun Babu T, declare that:

1. They have obtained written, informed consent for the publication of the details relating to the patient(s) in this report.
2. All possible steps have been taken to safeguard the identity of the patient(s).
3. This submission is compliant with the requirements of local research ethics committees.