

Case Report (PROVISIONAL PDF)

Recurrent spontaneous pneumothorax in a child

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Abstract

A 3 year old female child presented with three episodes of left sided pneumothorax in last four months. Patient has minimal respiratory distress in each admission with low grade fever in first two admissions. Intercostal drain was put in first two episodes and VATS with thoracoscopic lung biopsy was done in third episode from left upper lobe with no further episodes of pneumothorax.

Introduction

Primary spontaneous recurrent pneumothorax is rare in children, with male & left sided preponderance. Operative management by bullectomy with or without plurodesis carries little morbidity, has a high success rate and is recommended after first recurrence.

Case Report

A 3-year-old female child was admitted with respiratory distress and fever, and history of recurrent cough. She was born full term, normal delivery of non-consanguineous parents, and had been fully immunized. Chest radiograph showed left-sided large pneumothorax with mediastinal shift to right side. An intercostals drain was inserted; she patient had an uneventful recovery and was discharged after seven days.

Seven weeks later, the patient again developed respiratory distress of lower severity, and low grade fever. Chest radiograph showed left sided pneumothorax. An intercostal drain was inserted once more. Routine investigations have shown elevated total leukocyte count. Investigations for tuberculosis were negative. CT thorax was performed, and confirmed a large pneumothorax on the left side with collapse of lung. Patient was discharged after complete resolution of pneumothorax. The clinical diagnosis at this point was staphylococcal pneumonia with bleb formation.

One month later, at a follow up visit, the patient's chest radiograph, at routine follow up, showed left large pneumothorax. At this

point she had no respiratory distress and was otherwise asymptomatic. In view of this, intercostal drainage was not performed. CT thorax showed pneumothorax and collapse of the left lung, with multiple thin strands in the upper lobe with a few cystic areas suggestive of multiple blebs/bullae, with a few sub-centimeter lymph nodes. Bronchoscopy was performed and was normal.

With a differential diagnosis of Staphylococcal pneumonia and histiocytosis in mind, video assisted thoracic surgery (VATS) and lung and pleural biopsy was undertaken. There was evidence of a few blebs in left upper lung fields but no grossly enlarged bullae. The rest of the thoracic cavity on the left side was grossly normal. Lung biopsy taken from an area having blebs showed changes consistent with recurrent pneumothoraces. Pleural biopsy histology showed Langerhans giant cells with histiocytes on pleural biopsy.

Immunohistochemistry excluded langerhan's cell histiocytosis & other neoplastic conditions [immunonegative for s100, CD1a and desmin].

The patient was started put on intravenous antibiotics for seven days and then discharged on oral medications. There have been no recurrences for six months after this episode.

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Figure 1



Figure 2:

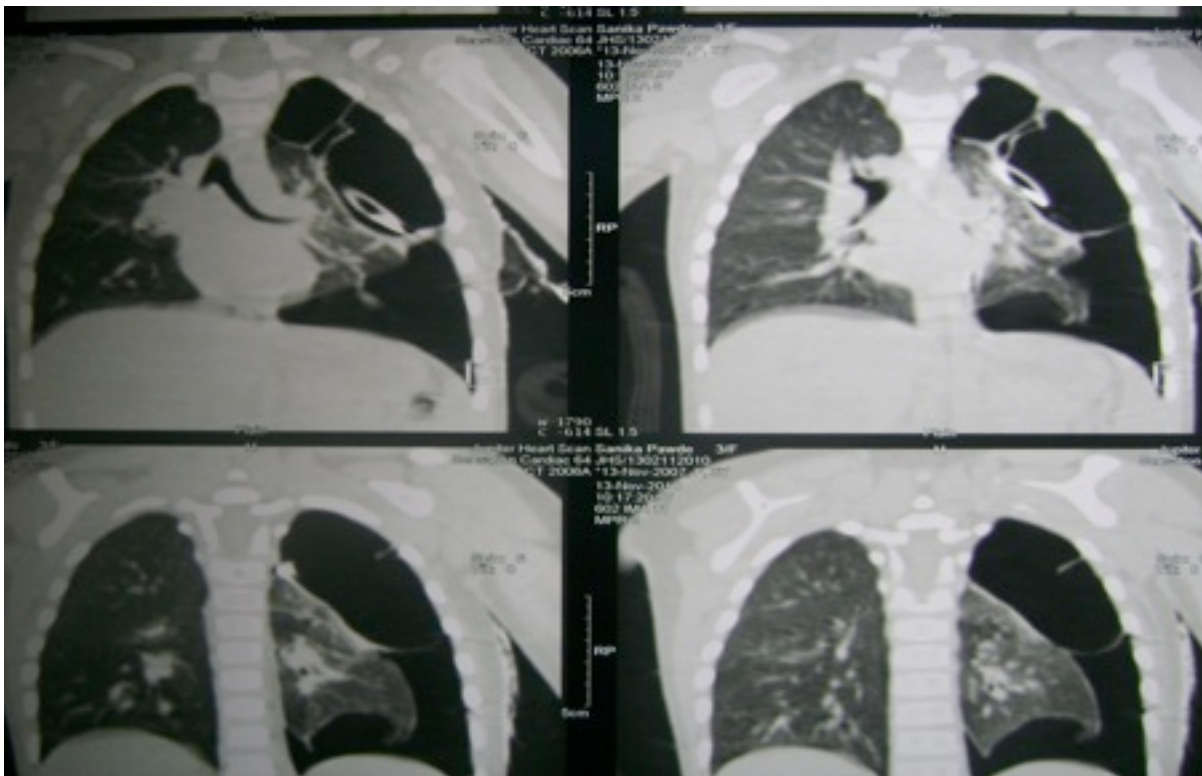


Figure 3

Discussion

Prompt diagnosis and timely intervention is very necessary in patients with pneumothorax. The most common mode of presentation is with respiratory distress associated with fever and cough. These patients need urgent admission and management in the form of broad spectrum antibiotics, anti-tuberculosis treatment if indicated, and intercostal drain insertion.

It is uncommon for recurrent pneumothorax to occur in children. Accurate diagnosis and management of recurrent pneumothorax is challenging. The largest case series of recurrent pneumothorax reported so far is of 57 cases. Recurrent pneumothorax in children has a male predominance [1.9:1] with left sided involvement slightly more common (63%) than on the right side.

Risk of recurrence is 51% after one episode & 56% after second episode. Risk of

recurrence is greater in children than in adults. In children bacterial infections most commonly staphylococcal, associated with formation of large bullae with rupture in the pleural space is the most common cause for recurrent pneumothorax. Patients generally present with respiratory distress, with fever and cough.

Treatment modalities are in the form of

1. Non operative –oxygen supplementation, HPD & observation
2. Tube drainage
3. Pleurodesis
4. Heimlich valves

5. Bullectomy with or without pleurodesis

Conclusion

Recurrent primary spontaneous pneumothorax is rare in children, with male and left sided preponderance. Operative management by bullectomy with or without plurodesis carries little morbidity, has a high success rate and is recommended after first recurrence

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