

## **Answers to Medical Quiz**

**A1.** The most likely diagnosis is right side round pneumonia.

**A2.** Spherical opacity in the right posterior lower lobe of the lung.

**A3.** Round pneumonia, pleural pseudo cyst and lung mass.

### **DISCUSSION**

Spherical or round pneumonia is a solitary lesion with or without hilar lymphadenopathy and predominantly located in the posterior portions of the lung<sup>1,2</sup>.

Presentations of round pneumonia cases vary and may include fever, chest pain, apnea, cough or combination of two or more symptoms and signs<sup>1,2</sup>. The clinical history, physical examination and plain chest X-ray is the best diagnostic tool for detecting pneumonia and it is the cornerstone of diagnosis<sup>3</sup>.

Although chest radiograph is essential in confirming pneumonia and establishing its location, it cannot determine the cause. The opacity may contain air on an anterior-posterior or lateral chest X-ray<sup>3</sup>.

Round pneumonia is a disease usually seen in children but can be also seen in adults and it may be confused with neoplasm<sup>3,4</sup>.

*Streptococcus pneumoniae* has been frequently reported as the most common bacterial organism in the etiology of round pneumonia in children as well as in adults, besides *Klebsiella*, *Haemophilus pneumoniae* and *Haemophilus influenzae*. The outcome is usually excellent, but can be fatal, depending on the virulence of the infective organism and host immunity<sup>1,3,4</sup>.

The actual mechanism of spherical configuration of this type of community-acquired pneumonia is not known, but it can be explained by the high affinity of pneumococci to type II lung cells leading to inflammation in the alveolar tissue and spreading the infection centrifugally through the intra-alveolar channels<sup>1,4,5,6</sup>. Recognition of this entity of pneumonia is important in working diagnosis in order for the appropriate antibiotic to be given.

If there was no response to medical therapy, other investigations are required, such as, CT scan and tumor markers to rule out other pathologies such as atelectasis, pleural

effusion, pulmonary embolus, aspiration, pulmonary contusion, pseudocyst and mass lesions<sup>5,6</sup>.

Common laboratory abnormalities in patients with round pneumonia include leukocytosis, respiratory acidosis, hypoxia or hypercapnia in severe cases. Positive blood culture is found in approximately 30%-50% of the cases, blood culture should be obtained before starting antibiotic therapy<sup>1-3</sup>.

## CONCLUSION

**Round pneumonia should be considered in the differential diagnosis in any case especially in children with pulmonary mass on chest radiograph, has respiratory tract symptoms and also has no other findings to suggest malignancy. The diagnosis is usually made by basic investigations: chest, X-ray and careful physical examination. The outcome after medical therapy is excellent.**

## REFERENCES

1. Wan YL, Kuo HP, Tsai YH et al. Eight Cases of Severe Acute Respiratory Syndrome Presenting as Round Pneumonia. *AJR* 2004; 182: 1567-70.
2. Bradley JS. Management of Community-Acquired Pediatric Pneumonia in an Era of Increasing Antibiotic Resistance and Conjugate Vaccines. *Pediatr Infect Dis J* 2002; 21: 592-8.
3. Benjamin G. Pneumonia. *Pediatrics in Review* 2002; 23: 132-40.
4. McIntosh K. Community-Acquired Pneumonia in Children. *NEJM* 2002; 346: 429-37.
5. Juvén T, Mertsola J, Waris M, et al. Etiology of Community-Acquired Pneumonia in 254 Hospitalized Children. *Pediatr Infect Dis J* 2000; 19(4): 293-8.
6. Nelson JD. Community-Acquired Pneumonia in Children: Guidelines for Treatment. *Pediatr Infect Dis J* 2000; 19(3): 251-3.