Recurrent pneumothorax at an infant with miliary tuberculosis

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ÖZET

Miliyer tüberkülozu bir süt çocuğunda tekrarlayan pnömotoraks


Anahtar Kelimeler: Miliyer tüberküloz, pnömotoraks, süt çocuğu.

SUMMARY

Recurrent pneumothorax at an infant with miliary tuberculosis

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A seven-month-old girl with miliary tuberculosis (Tbc) admitted to hospital due to development of acute dyspnoea and cyanosis at the end of third month of anti-Tbc therapy. Pneumothorax was evident at right lung with the chest radiography. A chest tube placed under water seal was applied. The patient healed up and then discharged. One week later, the patient admitted to hospital again, with same complaints due to pneumothorax at the same hemithorax. Same treatment was applied to the patient. Anti-Tbc therapy was stopped at the end of 12th month. Although, pneumothorax is a rare life-threatening complication of miliary Tbc, it’s not seen only on admission or soon after beginning of the therapy, but it can be seen several months later during treatment. We want to report this case. That is the first case in which pneumothorax developed during therapy of an infant with miliary Tbc.

Key Words: Miliary tuberculosis, pneumothorax, infant.

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Tuberculosis (Tbc) is still an important health problem in developing countries covering Turkey. Pneumothorax, which is a clinical complication of Tbc, is more common among adolescents and adults, not in infants (1,2). Therefore, we reported this seven-month-old girl with miliary Tbc, who has developed spontaneous pneumothorax two times with in a week interval, while being treated with a four-drug regimen for three months.

CASE REPORT

A four-month-old girl admitted to hospital with productive cough, fever and vomiting lasting for a week. She had no pneumonia history and there was no Tbc in her family history. One dose of Bacille Calmette-Guérin (BCG) vaccine was administered.

Physical examination: Her body weight was 4150 g (3 p), height 60 cm (50 p), head circumference 36 cm (< 3 p), pulse rate 160/min, respiratory rate 60/min. Both hemithorax were participating respiration equally. There were crepitations at lung basal. Liver and spleen were palpable 5 cm at midclavicular line.

Laboratory evaluation showed haemoglobin 9.2 g/dL, total leukocyte count 28.000/mm³, platelet 454.000/mm³. In blood smear, there were 68% polymorphonuclear leukocyte, 18% lymphocyte, band forms 14%, toxic granulations was positive. Mantoux test was negative. Acidoresistant bacille in fasting gastric fluid were (+++) positive. At posteroanterior chest film, miliary infiltrations were observed bilaterally (Figure 1). In thorax computerized tomography, there were multiple lymphadenopathies in the anterior mediastenum perivascularly and right paratracheal region (the largest one was 2 cm in diameter); and there were micronodular densities all over the pulmonary area (Figure 2). These findings were consisting with miliary Tbc. Liver was detected as 106 mm and grade II parenchyma echogenity in abdominal ultrasonography. Lumbar puncture findings were as follows. Leucocytes 29/mm³, chloride 118 mmol/L, protein 296 mg/L, glucose 53 mg/mL at the same time serum glucose was 82 mg/mL. Microorganism was not detected in native material and cerebrospinal fluid culture was negative for bacterial pathogens.

With these findings the patient was diagnosed as miliary Tbc and she was treated with a four-drug regimen including streptomycin, morphozynamide, rifampicin and isoniazid. Ethambutol was substituted morphozynamide due to elevated serum liver enzyme levels on the 10th day. Family history was negative for Tbc, but Tbc screening revealed that her father was acidoresistant bacille positive and had cavitary Tbc lesion, so that isoniazid prophylaxis was given to his five children. Although, appropriate therapy has been given and controls were had been properly, after three months the case had admitted with acute dyspnea and cyanosis. On physical examination general condition was bad, and she had peroral cyanosis. On thorax examination respiratory sounds were not heard by auscultation. Chest film showed pneumothorax on right lung. A chest tube was applied. On the seventh day of treatment, pneumothorax was cured and patient was discharged. After one week she again admitted hospital with acute dyspnea and her chest film revealed pneumothorax at the same hemithorax. Same therapy was given to patient and according to clinical and radiographical findings, the patient discharged in seventh day of her hospitalisation and her treatment had continued for 12 months.

DISCUSSION

Pneumothorax is a well-known complication of cavitary Tbc and it is rare but a recognizable complication of miliary Tbc in adults (1-4). Miliary Tbc is a common form of Tbc among infants and children, but it is not seen commonly together with pneumothorax (4-7). Up to now, 18 cases miliary Tbc complicated with pneumothorax...
were reported in English literature. Only six of them were younger than 17 years old and only two infant cases were reported (4-7). The youngest one was 21 days old who died 6 hours later on admission (5). Four cases were unilateral and the others were bilateral. All bilateral cases had recurred. In our case pneumothorax occurred two times at the same hemithorax.

A miliary Tbc series including 22 cases was reported from Turkey and there were no pneumothorax complicating acute miliary Tbc (8).

Mechanism of pneumothorax in miliary Tbc is not clear. In the cases, at which initially developed pneumomediastenun, air leakage through mediastinal pleura is thought to be the cause of pneumothorax (1). But this explanation does not cover the cases that have only pneumothorax as our case. The considered mechanism is rupture of subpleural miliary nodules into pleural space secondary to necrosis or caseification, or rupture of bullous lesion developed near miliary tubercules (5-7).

In any Tbc suspicion, familial Tbc screening must be done. Infectivity of infants is very low and infection spreads via close contact with adults. In this case, family screening reveals that her father is the origin.

All cases reported in literature have miliary Tbc together with pneumothorax on admission. In our case, pneumothorax developed at the third month of treatment. Although pneumothorax is a rare complication, it should be remembered in patients with miliary Tbc. It can be seen both in early and late periods of treatment. So in any acute dyspnea episode during treatment period we have to suspect of pneumothorax and family members and caregivers should be warned about this complication.

REFERENCES