

Pleural Empyema in Children: Diagnosis and Management in a Pediatric Department in Development Country

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Dear Editor-in-Chief,

Pleural empyema is a serious complication of pneumonia, its morbidity and mortality is important in developing country where hospital resources are limited (1). While pediatric empyema is less serious compared to adults where mortality can approach 20%, it still poses a considerable burden on hospitals and families (2). Different treatment strategies continue to generate controversy (2). We reported our experience in diagnosis and management of pleural empyema in children in a pediatric department in a development country. This study retrospectively evaluated patients who had been diagnosed with pleural empyema in the department of pediatric emergency and reanimation y in Hedi Chaker hospital in Sfax, Tunisia between 2010 and 2016. Over 7- year period, we diagnosed and managed 28 children with pleural empyema. The mean age was 3 years 10 months (3months to 13 years 6 months); ten were female and 18 were male. In first, the most frequent symptoms were fever (82%) cough (53%) and dyspnea (50%). Sixty one percent of children were using antibiotics before admission. Chest X-ray was made for all patients; ultrasonography was performed in 75% of cases. Most pleural fluid samples did not culture any organisms (75%), but most positive cultures grew *Streptococcus pneumoniae*. Twenty five percent of patients need only antibiotics and surveillance. Treatment with chest tube drainage was successful in 41.5% of patients. Surgical intervention was necessary in only 3.5% of patients. Pleural empyema was treated successfully in all our patients. The hospital stay was 11 ± 2 days (range: 7-16 days). Five children maintained postoperative respiratory symptoms with a mean follow-up of 3 years. Pleural empyema is a life-threatening emergency (3). The incidence of pleural empyema is still remains a significant health problem in developing countries due to low socioeconomic status, malnutrition, and delay in diagnosis of pneumonia, delayed referral to higher center (3). Chest radiography is usually the first imaging modality in the work up of pleural empyema, but it cannot confirm the diagnosis (4). Ultrasonography is a safe and inexpensive mode of imaging and can be used to confirm the presence of pleural empyema it can be used to guide catheter insertion and percutaneous drainage (4). A CT-scan is not indicated for the initial diagnosis (4). In all our patients the chest X-ray was made and the confirmation of diagnosis was made with ultrasonography in the majority of our patients. In early stage of pleural empyema antibiotic with or without chest tube drainage remains main choice of treatment in children (3). The insertion of a chest tube should also be considered if a patient fails to respond despite 48 to 72 hours of antibiotic therapy, hypoxia, hypercapnia, large amounts of free-flowing pleural fluid and if there is evidence of fibrinopurulent effusions (pH <7.0, glucose <40 mg/dL (2.22 mmol/L), lactate dehydrogenase >1000 IU (16.67 kat/L) (5). In our study, chest tube drainage was successful in majority of our patients. The early adequate surgical treatment in children with pleural empyema results in low morbidity, shorter hospital stay and good long-term outcome.

Key Words: Children, Empyema, Pleural.

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