

A case report on Tuberculous pleural effusion diagnosed clinically and Cytologically

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Abstract

Background: Nearly one third of the global population i.e. two billion people are infected with mycobacteria tuberculosis and are at risk of developing the disease. Pleural effusion is one of the common complications of pulmonary tuberculosis.

Methods: This study was a hospital based descriptive cross sectional study performed at Chest Medical Ward, Yangon General Hospital, Myanmar, of study period from January 2004 through January 2005. A total of 108 patients were included. Thorough history taking and physical examinations, radiological findings, hematological and serum biochemical profiles were recorded. Pleural aspiration and biopsy were also performed. At least two pieces of pleural tissue were taken and one piece of each sample of pleural tissue was cultured for mycobacteria and the rest was sent for histological examination. Macroscopic findings, cytological, microbiological and biochemical analysis of pleural fluid were analyzed. Results: A total of 108 patients, 74 males and 34 females were included. Their mean age was 42.60 ± 16.34 (range 12-81 years). Common presentations were breathlessness (82.4%), cough (81.5%), fever (80.6%), and night sweat (78.7%), loss of appetite (74.1%), significant weight loss (72.2%) and chest pain (67.6%). Only 39.3% of TB patients produced sputum in their history. Haemoptysis was present in only 7.4% of the patients. Regarding the physical signs, 53.7% of them had fever during admission, 15.7% were cachexic, cervical lymph nodes were palpable in 14.8% and had clubbing of fingers in 5.6%. They also had respiratory physical signs other than pleural effusion which include crepitation (31.5%), collapse (15.7%), pleural rub (13.0%) and signs of consolidation (11.1%). Only one patient (0.9%) had positive AFB smear in pleural fluid. Culture of pleural effusion and pleural biopsy reports for AFB were positive in 5.6% and 1.9% respectively. 91 patients (84.3%) were diagnosed on first biopsy procedure and 15 (13.8%) and 2 (1.9%) of patients needed second and third session of procedures respectively. Only 2 patients (1.9%) had bilateral pleural involvement. Associated radiological pulmonary parenchymal lesions were noted in 28 patients (25.9%). 7 patients revealed blood stained pleural fluid

(6.48%). The rest had straw color aspirates. Mean Pleural fluid and serum protein ratio was 0.69 ± 0.17 . Pleural fluid LDH was high in most cases with a mean \pm SD was 726.24 ± 383.64 . Serum LDH also was high (507.39 ± 170.76). The mean ratio of pleural fluid and serum LDH was 1.56 ± 1.16 . The main WBC subset was lymphocytes (mean 91.96% of total WBC population) and polymorph was detected only $6.86 \pm 15.88\%$ (mean \pm SD). Total and differential white cell counts of peripheral blood film were within normal limits. Mean ESR was high 77.4 mm/1st hour.

Conclusion: Analysis of pleural fluid can have an important contribution for investigation of patients with pleural effusion. Although highly specific, percentage positivity of microbiological examinations on pleural fluid does not reach the degree required for a single diagnostic investigation for tuberculosis. The Light's criteria are fulfilled in all cases. Pleural biopsy will be useful as an ultimate procedure in cases with diagnostic problem as it is a procedure which can give a definitive tissue diagnosis.



2nd International Pediatrics, Infectious Diseases and Healthcare Conference, October 26-27, 2020 Webinar

Abstract Citation:

Zay Soe, A case report on Tuberculous pleural effusion diagnosed clinically and Cytologically, 2nd International Pediatrics, Infectious Diseases and Healthcare Conference; Webinar, October 26-27, 2020 (<https://pediatrics.infectiousconferences.com/>)