Pleural Effusion due to Pyelonephritis or Urinothorax?

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Dear Sir,

Recently, Berkman et al. [1] reported on a patient with a pleural effusion attributed to pyelonephritis. Although this is one possible diagnosis, we wish to propose an alternative diagnostic possibility: urinothorax.

Urinothorax is a rare cause of pleural effusion secondary to obstructive uropathy [2]. It is believed that urine moves retroperi-toneally into the pleural space [3]. The effusion is a transudate ipsilateral to the obstructed kidney. The pleural fluid smells like urine, and effusions resolved quickly with removal of the obstruction [2, 3]. The diagnosis is based on clinical and radiological findings, and as a biochemical feature, the pleural level of creatinine is higher than the serum level [4].

Could the pleural effusion reported by Berkman et al. [1] be a urinothorax? We think so. The effusion was yellow in color, ipsilateral to an obstructed kidney, with a low level of protein, a few neutrophils, and diminished after a catheter was inserted in the urinary system. All these characteristics are in agreement with the concept of urinothorax. Moreover, the pH in the reported case was 7.3 (the arterial pH was not mentioned) and the finding of low pH in the pleural fluid is also consistent with the diagnosis of urinothorax [5]. But Berkman et al. [1] considered the fluid to be an exudate because the lactate dehydrogenase level was high, and probably rejected the possibility of urinothorax for this reason. In our experience [unpubl. data] and that of others [4] the lactate dehydrogenase level is frequently high in urinothorax. Other tests (not performed in this case) can correctly classify the pleural effusion as a transudate [6].

From a clinical point of view, the exact diagnosis in this patient is not essential because the treatment does not change. But, for a better understanding of pleural effusions associated with renal diseases, we think that the possibility of a urinothorax must be considered in this patient and, in general, in patients with pleural effusion and obstructive uropathy. Thus, in these circumstances, other parameters for distinguishing between transudates and exudates, and the pleural fluid to serum creatinine ratio should be determined.

References