Pleural Effusion due to Pyelonephritis or Urinothorax?

E.		Garcia-Pachon ^a
I.		Padilla-Navas ^b

^aHospital Vega Baja, Orihuela, and ^bHospital General Universitari d'Elx, Alicante, Spain

Dr. E. Garcia-Pachon, Pl. del Pont, 1-4-2, E-03201 Elche, Alicante (Spain), Fax (Hospital Vega Baja) 34 6 677 60 60

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 retroperitoneally 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

Berkman N, Liss H, Kramer MR: Pyelonephritis as a cause of pleural effusion. *Respiration* 1996;63:384-386.

Shan SA: The pleura. *Am Rev Respir Dis* 1988; 138:184-234.

Light RW: Pleural Diseases, ed 3. Baltimore, Williams & Wilkins, 1995, pp 90-91. Stark DD, Sahnes JG, Baron RL, Koch DD: Biochemical features of urinothorax. Arch Intern Med 1982;142:1509-1511. Miller KS, Wooten S, Shan SA: Urinothorax: A cause of low pH transudative pleural effusion. Am J Med 1988;85:448-449. Garcia-Pachon E, Padilla-Navas I, Sanchez FJ, Jimenez B, Custardoy J: Pleural fluid to serum cholinesterase ratio for the separation of transudates and exudates. Chest 1996;110:97-101.

KAIUEH

E-Mail karger@karger.ch Fax + 41 61 306 12 34 <http://www.karger.ch>

© 1997 S. Karger AG, Basel 0025-7931/97/0645-0392\$ 12.00/0

This article is also accessible online at: <http://BioMedNet.com/karger>