

Images in surgery

URINOTHORAX: AN UNUSUAL CAUSE OF MASSIVE PLEURAL EFFUSION

URINOTÓRAX: CAUSA INUSUAL DE DERRAME PLEURAL MASIVO

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A 74 year-old male with a history of high blood pressure and hyperuricemia was admitted to the hospital with asthenia, unquantified weight loss, dyspnea on moderate exertion for 2 weeks, and diffuse abdominal pain. No previous abdominal surgeries or traumas were recorded. Blood leukocyte count was 12400/uL, creatinine 0.98 mg/dL, CRP 19 mg/dL, and LDH 318 U/L. The chest X-ray (Fig. 1-A) showed a right pleural effusion and the pleural fluid was suggestive of an exudate.

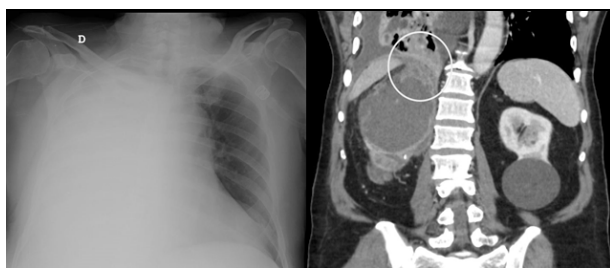


Figure 1A-B. the thoracic X-ray showed a right pleural effusion as an unspecific initial finding. The CT scan showed a hydronephrotic and non-functional right kidney, also suggesting the presence of a nephropleural fistula.

Thorax and abdominal CT scan revealed a polycystic right kidney with grade IV hydronephrosis and suggested the presence of a nephropleural fistula (Fig.1-B). The thoracocentesis was repeated and the pleural fluid / serum ratio of creatinine obtained was higher than 1 (1.35 mg/dL), which is a diagnostic criterion for urinothorax (1). Finally, a retrograde pyelography was carried out, and confirmed the passage of urinary tract fluid into the pleural cavity (Fig. 2), also suggesting an ureteropelvic junction obstruction as underlying cause of the urinary tract obstruction.

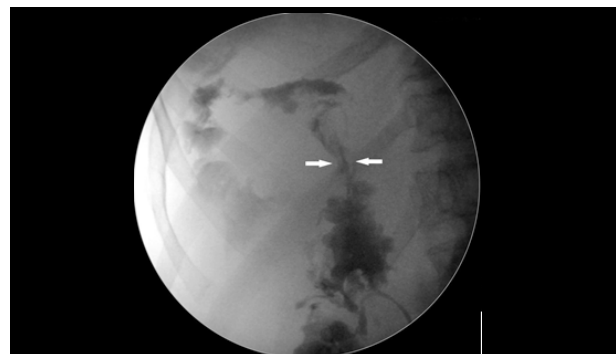


Figure 2: the retrograde pyelography demonstrated the communication between the urinary tract and the thoracic cavity.

A retrograde double J stent could not be placed, thus a thoracic drainage tube and a nephrostomy through the superior calyx were placed, both draining purulent material. One month later, the control CT shows a right atrophic and non-functional kidney, with significant reduction of the fistulous path's size. The patient refused to be treated by a radical nephrectomy, thus an antegrade double J stent was placed. He remains stable with periodic stent replacements.

Urinothorax is an infrequent and underdiagnosed pathology, with few cases reported. It is usually presented as a transudative pleural effusion. Currently, no test is available to confirm the diagnosis (2), although the ratio of serum creatinine/pleural creatinine could suggest the presence of urinothorax. Radiographic imaging is useful to support the diagnosis. Management of a urinothorax requires a multidisciplinary approach with an emphasis on the correction of the underlying urinary tract pathology.

References

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