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Title: Dyspnea Revealing an Uncommon Complication of Kidney Obstruction: Urinothorax

Running Head: Dyspnea Revealing Urinothorax

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A 59-year-old patient with no particular medical history presented to the emergency department for worsening of left lower back pain with recent onset of fever and dyspnea.

Her physical examination revealed high fever (39.3°), tachypnea with markedly decreased breath sounds on the left side of chest, and tenderness of the left lumbar fossa.

Her chest x-ray revealed left pleural effusion (Figure 1). Thoracic and abdominal computed tomography (CT) showed nephropleural communication with a large obstructive pelvic stone (Figure 2, 3).

Left percutaneous nephrostomy tube placement and thoracentesis were performed.

Pleural fluid analysis was consistent with an acidic, transudative effusion with a pleural fluid/serum creatinine ratio of 1.3. Bacterial analysis revealed *Proteus mirabilis* in pleural fluid and urine.

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The patient became afebrile two days after bi-antibiotic therapy. Urinothorax resolved after pleural drainage and relief of the urinary tract obstruction (Figure 4).

Urinothorax is an uncommon thoracic complication of the urinary tract; it corresponds to accumulation of urine in the pleural cavity, which in particular, occurs secondary to urinary trauma, obstructive uropathy, and abdominal surgery [1].

Translocation of urine from the urinary tract into the pleural cavity can occur either by lymphatic drainage of the retroperitoneal extravasated urine following pressure gradient or by directly rupturing into the pleural cavity through a fistula or an anatomical defect of the diaphragm.

Diagnosis of urinothorax requires high degree of clinical suspicion and can be established by biochemical analysis of pleural fluid, which is mostly consistent with a transudate, low pH (<7.40), and creatinine concentrations higher than those found in simultaneously obtained serum samples (pleural fluid/serum creatinine ratio >1.0) [1,2].

Once the urinary tract obstruction is relieved, it often leads to rapid resolution of the pleural effusion.

References:

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Figure Legends

Figure 1. Chest x-ray of the patient at admission showing an important pleural effusion

Figure 2. Coronal computed tomography showing nephropleural fistula

Figure 3. Transversal computed tomography scan showing pleural effusion and kidney enlargement upon a pelvic obstructive stone

Figure 4. Chest X-ray showing complete resolution of the urinothorax after relief of obstruction using a percutaneous nephrostomy tube

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