A CASE REPORT OF SEVERE HYPONATREMIA COMPLICATING BLADDER PERFORATION IN THE SETTING OF CYSTOSCOPY

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Introduction

Hyponatremia following cystoscopy due to retained nonconductive irrigant fluid is an uncommon event. The shift in serum osmolality can result in acute neurologic injury. This case report describes a patient who presented to the SAICU from an outside hospital with seizure-like activity, altered mental status, and bladder perforation after cystoscopy and clot evacuation for gross hematuria. The patient's clinical course was notable for metabolic encephalopathy, secondary to severe, acute hyponatremia. Mechanical ventilation was required for acute mental status change due to metabolic derangements.

Methods

This patient underwent several procedures, diagnostic imaging, and lab tests to evaluate the etiology of encephalopathy. An exploratory laparotomy demonstrated bladder perforation necessitating repair, placement of a suprapubic tube and abdominal washout and closure. Embolization of right renal artery was performed to control renal bleeding. Diagnostic imaging consisted of CT Brain/Head/Thorax/Abdomen/Pelvis without contrast, CT Angiography of Neck/Brain/Head and Cerebral Perfusion CT. CBC, CMP, Coagulation studies, Lactic Acid, UA, Cultures, Ionized Calcium, CK, ESR, Fibrinogen, Magnesium, Type & Screen and COVID test were also performed.

Results

Laboratory results were remarkable for severe hyponatremia with a sodium of 120 mEq/L, an elevated anion-gap metabolic acidosis with bicarbonate of 13, and a glucose of 166 mg/dl. Acute kidney injury with a Cr of 1.44 and BUN of 29. Imaging demonstrated bilateral small lung nodules within the upper lungs suspect for pulmonary metastatic disease. Moderate ascites noted on CT of Abdomen/Pelvis. Hypertonic saline (3%) was administered, with correction of hyponatremia and resolution of neurologic findings. Patient's clinical course remained stable after administration of hypertonic saline, ruling out SIADH as a paraneoplastic cause.

Conclusion

Hyponatremia should be suspected as a cause of acute neurologic decompensation after prolonged cystoscopy and use of bladder irrigant. Regional anesthesia is an anesthetic consideration to identify early signs of hyponatremia, such as mental status changes. A regional block that covers T10 and below will allow the patient to complain of abdominal pain and discomfort in the setting of bladder perforation. General anesthesia though appropriate for some patients, masks the early manifestation of any neurologic insult associated with hyponatremia, hypoosmolality, or bladder perforation.

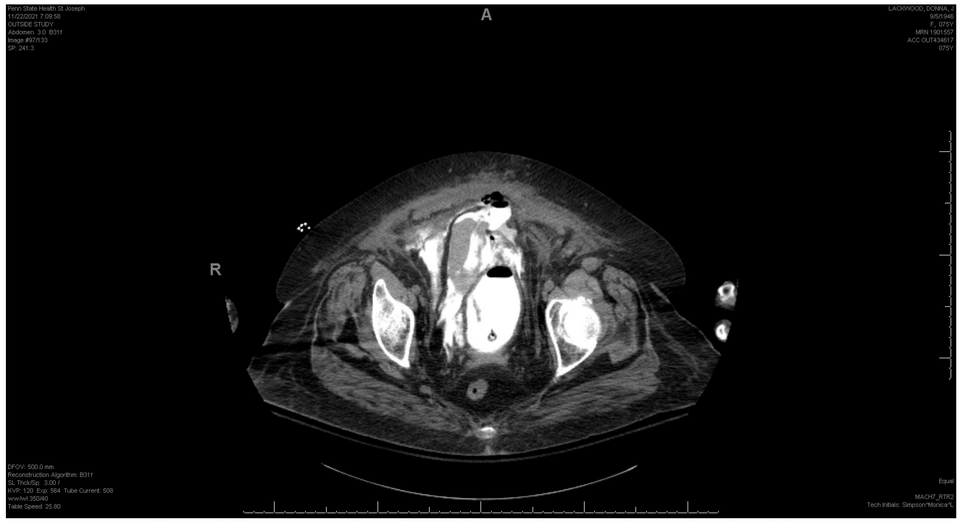

Figure 1: Transverse view of CT Abdomen demonstrating ascites in pelvis.

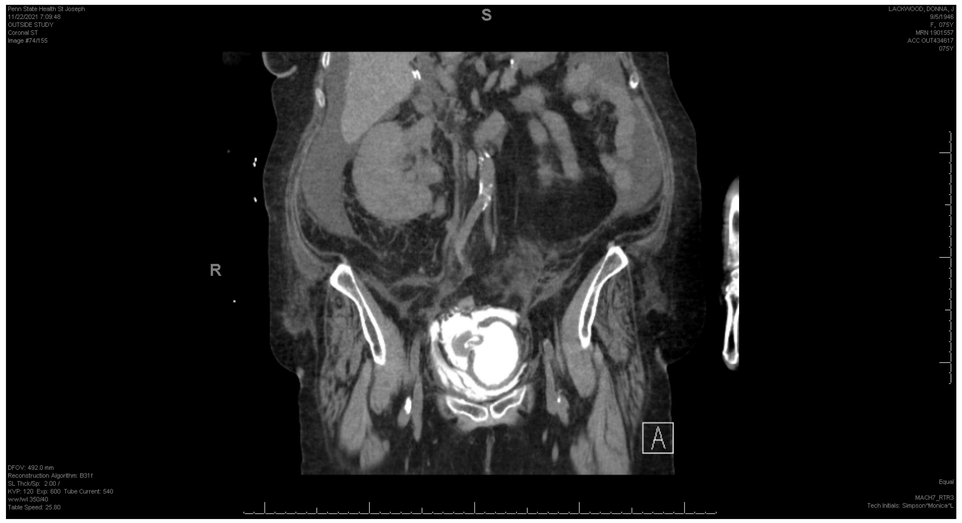

Figure 2: Coronal view of CT Abdomen demonstrating ascites in pelvis.