Reviewer's report

Title: Bladder irrigation and urothelium disruption: a reminder apropos of a case of fatal fluid absorption.

Version: 3 Date: 8 July 2014

Reviewer: Richard W Norman

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This is a case report of an 85 yo male who underwent continuous bladder irrigation (CBI) for gross hematuria. His catheter blocked and he developed acute congestive heart failure and was managed with hemodialysis to remove excess fluid. Unfortunately the patient died. Autopsy assessment of the bladder wall was consistent with diffuse urothelial damage and the authors hypothesize that these changes occurred during the bladder irrigation and led to massive fluid absorption and pulmonary edema.

There are several problems and alternative explanations for this scenario. Key points are missing.

Major Compulsory Revisions

1. An important part of managing patients with gross hematuria is evacuation of clots from the bladder prior to initiating CBI because the irrigation does not run well and the catheter blocks from the clots. This evacuation is done manually thru a large bore urethral catheter or cystoscope. Both options cause significant bladder mucosal injury. Was manual evacuation used on this man prior to starting his CBI or at any other time prior to his death?

2. Gross hematuria can lead to significant anemia in some patients and could be an explanation for his heart failure. What was his hemoglobin throughout his treatment and did he require blood transfusions at any point?

3. It is assumed that he got sick at the point he was noted to have a least 5 litres of fluid in his bladder. When was his nursing evaluation done just prior to the one when it was noted that there was no return of fluid? Was his difficulty breathing caused by such massive bladder distention that it was pushing up on his diaphragms and impeding lung expansion?

4. Did the CT scan of the abdomen show any clot within the bladder lumen? Was the bladder irrigated prior to the CT scan to relieve the massive bladder distension?

5. Why did the catheter block? Was it kinked? Was it blocked by a clot and if so how was that managed?

6. Bladder distension such as described here with at least 5 litres of fluid could be another cause for the described urothelial damage. This is well known during bladder dilatation during cystoscopy.

7. This man was undergoing regular dialysis. Much is made in the report
regarding the 5 kg weight loss due to fluid removal during his urgent dialysis. How much weight and fluid were usually removed during his regular dialysis treatments?

There are too many key facts missing and too many other plausible explanations for the clinical and pathological findings to support publication of this case report.

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

No to all