

Does Absence of Hydronephrosis Rules out Obstruction as an Etiology of ARF?

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Abstract

We present here a case of acute renal failure (baseline creatinine of 1.2-1.4) with a creatinine of 12 without hydronephrosis on imaging. This case is a good example acute renal failure caused by an obstruction and should never be missed.

Keywords: Acute renal failure, hydronephrosis, hypertension

INTRODUCTION

Acute renal failure (ARF) is a can be defined as decline in renal function within hours to days.¹ It can be classified mostly as prerenal, renal and postrenal based on etiology. Prerenal, renal, and postrenal causes are responsible for 50-70%, 20-40%, 5% of ARF, respectively.²

Case Presentation

A 93 year old male with past medical history of hypertension, type 2 DM and history of prostate cancer treated with radiation 5 years ago presented with weakness, fatigue and decrease oral intake. He had an elevated baseline creatinine ranging from 1.4 to 1.6.

Initial labs showed AKI (BUN ~204 and Creatinine ~12.43) with hyperkalemia (7.5) and metabolic acidosis (CO₂ 11). Renal ultrasound showed normal size kidneys with normal echogenicity and no hydronephrosis bilaterally. A Foley was placed with 500 cc of urine output immediately upon placement. Has had a total of 1250 cc of urine output over next 2 h.

Patient was aggressively treated with intravenous sodium bicarbonate infusion, fluids and hyperkalemia cocktail.

His creatinine normalized within next 12-24 h with hydration and Foley placement and intravenous fluid resuscitation.

Discussion

Mostly, clinicians don't suspect from post renal ARF unless hydronephrosis is present. But post renal ARF may be without hydronephrosis in 3 circumstances.³ Firstly, in the early stage of obstruction, hydronephrosis cannot be determined; because it takes a certain time such as 1-3 days. Secondly, in retroperitoneal fibrosis, post renal ARF can be seen without hydronephrosis. Lastly, if there is mild obstruction, hydronephrosis may not be seen. Post obstructive outlet obstruction should always be in differentials in cases presenting with acute renal failure. In our case there was an element of pre renal etiology but a lot of physicians will rule out post obstructive etiology as a cause with absence of

hydronephrosis, though the problem can be easily resolved and resulted in a quick resolution of problem. Complete and partial obstruction for prolong period can lead to irreversible damage and can be life threatening.

References

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