International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2022): 7.942

An Interesting Case of Aplastic Anemia and Acute Kidney Injury

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Abstract: ***Renal hemosiderosis is deposition of hemosiderin pigment in the renal tubular cells [1]. Renal hemosiderosis as a cause of renal failure is rare and usually occurs in conditions where there is chronic intra vascular hemolysis or chronic iron overload as a result of repeated blood transfusions [2-4]. In most of the cases it is only an incidental finding during post mortem examination of patients with hemolytic anemia with intra vascular hemolysis[5]. During episodes of intra vascular hemolysis AKI can occur as a result of acute tubular necrosis.***

Keywords: Acute kidney injury, intra vascular hemolysis, renal hemosiderosis

1. Case Report

We report a case of renal hemosiderosis in a patient diagnosed as aplastic anemia and was on cyclosporine 150 mg BD since 3 years who recently got admitted at our hospital with anuria , breathlessness. On evaluation patient was found to have renal failure with serum creatinine of 7.3 mg/ dl, hyperkalemia , anemia and elevated LDH (2000) U/L and biliurubin 4.3 mg/ dL with predominant conjugated Bilirubin (3 mg/dL) and raised reticulocyte count (3.1%) suggestive of hemolysis. He was anuric hence urine analysis could not be done . Patient was diagnosed as Aplastic anemia AKI AKIN stage 3 with suspected intra vascular hemolysis . Hemodialysis was initiated through right IJV hemodialysis catheter and after 3 session of HD Renal biopsy was performed. biopsy showed renal hemosiderosis with acute tubular injury fig [1].

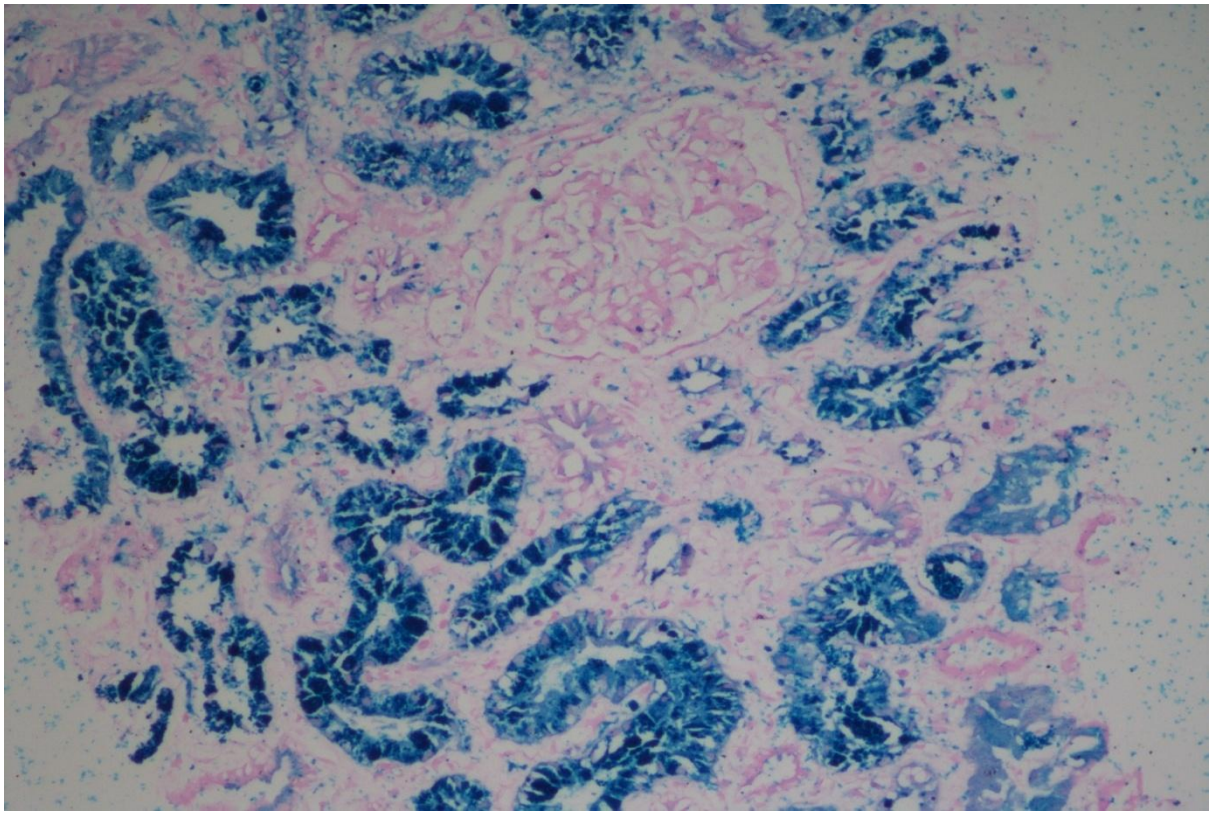

Figure 1: Renal biopsy Light microscopy picture: Brownish pigment granules seen in cytoplasm of epithelial cells – they are prussian blue positive

Patient was worked up for intravascular hemolysis causes. Flowcytometry analysis done as part of work up revealed more than 90 percent of RBC clones were negative for CD55 and CD 59 which is highly suggestive of PNH. we made a final diagnosis of PNH (paroxysmal nocturnal hemoglobinuria) with Bone marrow failure AKI renal hemosiderosis and acute tubular injury.

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Patient received 7 sessions of hemodialysis. His renal function improved and was discharged with serum creatinine 1.7 mg dl.

2. Discussion

Renal hemosiderosis as a cause of renal failure is rare and usually occurs in conditions where there is chronic intra vascular hemolysis or chronic iron overload as a result of repeated blood transfusions. Renal hemosiderosis can be diagnosed by presence of hemosidernuria, and confirmed by CT scan MRI imaging and renal biopsy. Among hemolytic anemias renal hemosiderosis has been demonstrated in, Paroxysmal cold hemoglobinuria, severe thalasemia and, Sickle cell anemia, Post mitral and aortic valve repair, G6PD defeciency.

Intravascular hemolysis in PNH can lead to two forms of renal disease. severe hemolysis producing massive hemoglobinuria causing AKI secondary to acute tubular necrosis and chronic hemolysis causing iron pigmentation and interstitial fibrosis leading to chronic kidney disease

In a study done by ram et 14 patients with PNH were studied and among them 6 patients presented with AKI and none of them had renal hemosiderosis and in the other study done by puri et al in 3 patients with PNH all three had renal hemosiderosis [6]. In most of the case reports on renal hemosiderosis presenting as AKI in literature, there had been an underlying precipitating event for renal failure either infection or hemolysis [6]. Hence an underlying acute component for worsening of renal function should be searched for in any patients with renal hemosidrosis. In our patient the renal failure could be precipitated by intra vascular hemolysis. The reason for presenting this case is because its rarity and our patient who initially diagnosed as aplastic anemia at hematology department a diagnosis of PNH was made after renal biopsy revealed renal hemosiderosis prompting to work up for PNH as an underlying cause.

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