Tubulo-Interstitial Nephritis and Uveitis Syndrome: A Case Report of a Rare and Often Unrecognized Clinical Entity

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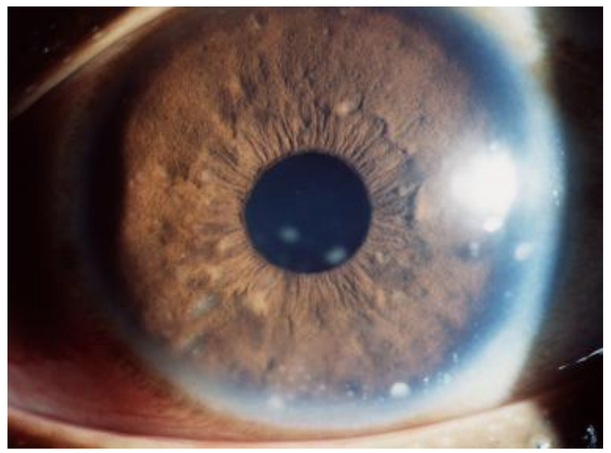
Introduction

Tubulo-interstitial nephritis and uveitis (TINU) syndrome is an exceedingly rare oculo-renal inflammatory condition that is defined by the presence of tubulointerstitial nephritis and uveitis in absence of other systemic conditions.[1] This autoimmune disease accounts for about 2% of uveitis and 5% of acute interstitial nephritis. The true prevalence is unknown, as many cases of TINU syndrome may be overlooked and misdiagnosed. For this reason, there is no established treatment protocol; however, primary treatment has often been with corticosteroids and cycloplegic agents.[2]

Case

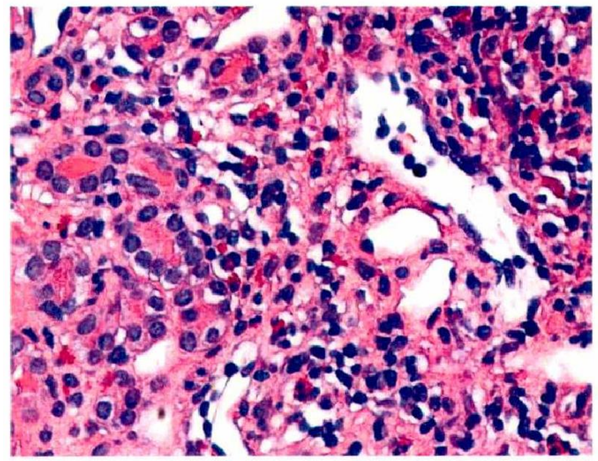
A 27-year-old African-American female with a past medical history of sickle cell trait and alcohol abuse presented with multi-organ complaints including mild, 3/10, upper abdominal pain associated with nausea and vomiting, blurry vision in the left eye for 3 months, and a significant unintentional weight loss of 40 pounds in 5 months. The patient was found to have acute kidney injury (creatinine of 4.2 mg/dL) and microcytic anemia. Urine toxicology was positive for cannabinoid. A slit lamp examination was performed and was consistent with anterior uveitis with granulomatous lesions in the left eye. Serological laboratory examination ruled-out autoimmune disorders such as sarcoidosis, systemic lupus erythematosus, Sjögren's, Behçet's, Wegener's, and rheumatoid arthritis. Positive studies included HLA-B27, EBV IgG, and β-2 microglobulin. The renal biopsy showed evidence of acute interstitial inflammation with eosinophils and lymphocytes, disintegration of eosinophils with spared glomeruli consistent with tubulo-interstitial nephritis. The patient was started on 50 mg of prednisone daily in addition to prednisolone and cyclopentolate eye drops in the left eye. On follow-up, the uveitis improved with initiation of steroid therapy with minimal improvement of kidney function.

Acute Granulomatous Uveitis



Slit lamp photograph in a typical patient with TINU Syndrome. Ocular findings includes conjunctival perilimbal flush and keratic precipitates - which are clusters of WBCs found in the endothelium. Flares and cells are also present in the anterior chamber. Inflammatory nodules (Koeppe and Busacca nodules) and posterior synechia can be present.

Kidney Biopsy



Renal biopsy with hematoxlin and eosin (H&E) staining. 16 glomeruli were seen. Mesangium shows no significant sclerosis or matrix deposition. Glomerular capillaries are normal in thickness. There is mild interstitial fibrosis associated with tubular atrophy. Moderate interstitial infiltrate was also seen with lymphocytes and eosinophils. The tubules show signs of acute tubular injury with vacuolization, bleeding, dilation, and nuclear drop-out.

Discussion

It is postulated that TINU syndrome may be an autoimmune disorder, with limited data suggesting that a shared autoantigen common to both the kidney and uvea may be involved in the pathogenesis.[3] Being autoimmune, it makes sense that TINU syndrome has been found to have a female predominance (3:1).[3] The majority of cases of TINU syndrome have reported bilateral uveitis, however, our patient presented with unilateral uveitis.

References:

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