CJASN
Clinical Journal of the American Society of Nephrology

November 2011 • Vol. 6 • No. 11

Editorials

Original Articles

Acute Kidney Injury/Acute Renal Failure

Clinical Immunology and Pathology

Clinical Pharmacology

Chronic Kidney Disease

Original Articles (Continued)

Original Articles (Continued)

Special Feature

On the Cover

What's the diagnosis? This image depicts a single red blood cell cast contained in a urinary sediment examined at 40X under phase contrast microscopy. Individual red blood cells are clearly seen within the cast, which is held together by Tamm Horsfall Protein (THP). Copious amounts of THP are produced in the thick ascending limb, with 40–80 mg/day appearing in the final urine of normal individuals. This highly glycosylated protein tends to form a gel in concentrated urine, and in the process trap any elements that are present within the tubule at that time into the resulting cast. Presence of a red blood cell cast in the urinary sediment suggests a renal as opposed to lower urinary tract source of hematuria, and therefore that glomerular damage has occurred. Causes include glomerulonephritis, vasculitis with renal involvement, and renal infarction. Since red blood cell casts can disintegrate over time, examining a fresh urine sediment can increase the odds of spotting one. (Image and text supplied by Rachel Miller and John Lieske MD, Mayo Clinic Renal Testing Laboratory, Rochester, MN).