

# Reddish-orange discoloration of urine due to uric acid crystalluria after recurrent seizures

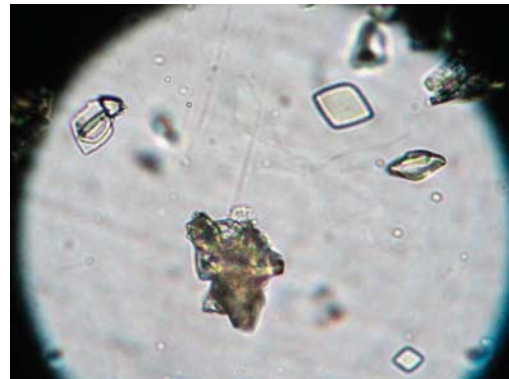
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**Figure 1 | Reddish-orange discoloration of urine.** Note the sedimented uric acid crystals in the urinary catheter.



**Figure 2 | Urine microscopy showing rosettes and rhomboid-shaped crystals of uric acid.**

A 44-year-old male presented to the emergency ward with chief complaints of recurrent episodes of generalized tonic-clonic seizures for the past 5 h. He had a history of right-sided focal seizures 3 years ago, and on evaluation was found to have multiple infarcts in his brain. The patient had been taking the tablet sodium valproate 200 mg twice daily, with good compliance. On admission, he was drowsy and disoriented. Central nervous system examination did not reveal any focal neurological deficits. Other systemic examinations were unremarkable. His bladder was catheterized and his urine showed reddish-orange discoloration (Figure 1). The urinary catheter and the urine bag showed bright orange-colored deposits. Serum uric acid level was found to be 9.4 mg/dl on admission (normal cutoff being 3.5–7.2 mg/dl). His 24-h urine uric acid level was 1362 mg/day (normal cutoff being 250–750 mg/day). The urine pH was 5.5 and specific gravity was 1.030. Microscopic examination of urine revealed rosettes and rhomboid-shaped crystals of uric acid (Figure 2). His renal functions remained normal. The patient was adequately

hydrated and was treated with urinary alkalinizing agents and anti-epileptics. The patient remained seizure-free during the hospital stay, and his serum and urine uric acid levels normalized over 4 days and the urine color returned to normal. This patient illustrates a rare case of reddish-orange discoloration of urine due to uric acid crystalluria. Although recurrent seizures can be associated with hyperuricemia and renal failure, the occurrence of such urine discoloration in the post-ictal state has not been reported previously. Persistent or repetitive contraction of the muscle such as that occurring during epileptic convulsion results in excessive breakdown of ATP. Uric acid is a breakdown product of purine nucleotides and therefore increases during recurrent seizures. The probable reasons that resulted in uric acid crystallization are the acidic urine pH, highly concentrated urine, and high uric acid concentrations. We would like to stress that uric acid crystalluria should be considered in the differential diagnosis of any patient with reddish-orange discoloration of urine, especially in the presence of macroscopic reddish-orange crystals.