

Uremic Frost



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A 58-year-old man presented to the emergency department with acute urinary retention and abdominal pain. Laboratory tests revealed a serum creatinine level of 20 mg/dL and blood urea nitrogen of 263 mg/dL. A urinary catheter was placed and drained 2 L of urine. On examination, his skin was covered diffusely with a fine white powder known as “uremic frost” (Figure). These skin findings rapidly resolved over the next 48 hours with improvement of his severe uremia.

Uremic frost is a manifestation of severe azotemia where tiny, yellow-white urea crystals deposit on the skin, resulting in a frosted appearance as sweat evaporates.¹ It is most frequently observed on areas of skin with eccrine glands and hair such as the scalp, neck, face, forearms, and chest and can be easily wiped away.²

Uremic frost was first described by Hirschsprung in 1865³ but is now a rarely observed physical examination finding in settings in which hemodialysis is readily available. Among 9 cases of uremic frost published in the literature, the mean blood urea nitrogen was 199 mg/dL and the mean serum creatinine level was 17.5 mg/dL.² Although a rare finding, uremic frost remains an important sign of severe renal failure, particularly in clinical settings with limited resources.

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FIGURE. “Uremic frost,” pictured here on the forearm, is a manifestation of severe azotemia where tiny, yellow-white urea crystals deposit on the skin, resulting in a frosted appearance as sweat evaporates.

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