RHABDOMYOLYSIS AND ACUTE KIDNEY INJURY: A REPORT OF 2 CASES

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Introduction:

Rhabdomyolysis is a clinical syndrome characterized by elevated serum creatine kinase (CK) and myoglobin levels due to muscle injury and the release of intracellular components into the plasma. Most commonly, it can occur due to trauma, drug abuse, or the side effects of drugs and infections.

We report two cases of trauma-related rhabdomyolysis complicated by myoglobinuric acute kidney injury (AKI). Two male patients, aged 66 and 60, presented to the emergency department with a history of general weakness, myalgia, hematuria, and decreased urine output. Both cases had traumatic injuries, and the first patient also had physical exertion a few days before admission to the hospital. Laboratory findings showed elevated serum CK (21583 U/L and 41660 U/L), creatinine levels (929 umol/L and 1409 umol/L), and CRP (58,3 and 72,2). Medical treatment included fluid resuscitation, antibiotics, and hemodialysis. Two days after the admission, both patients underwent the kidney biopsy due to worsening laboratory findings and had similar findings. Light microscopy demonstrated preserved kidney architecture. The tubules showed acute tubular injury with several intratubular pigmented casts (fig. 1). Electron microscopy demonstrated glomerular corrugation of basement membranes without any deposits. An abundant accumulation of electron dense material was noticed in the lumens of extended tubules that morphologically correspond to myoglobin casts. Immunofluorescence testing was nonspecific. Both patients showed improvement of clinical symptoms and were discharged after 2 weeks of care.

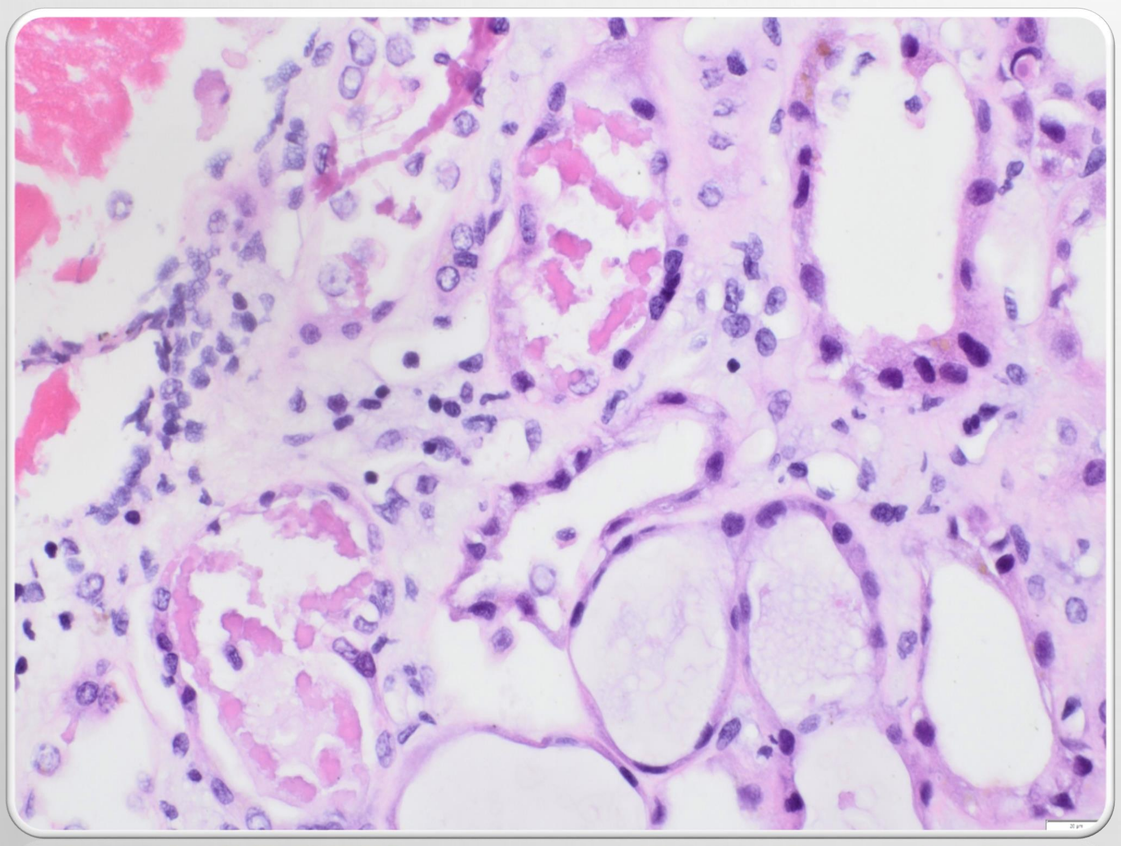

Figure 1. Intratubular pigmented casts, H&E 40x.

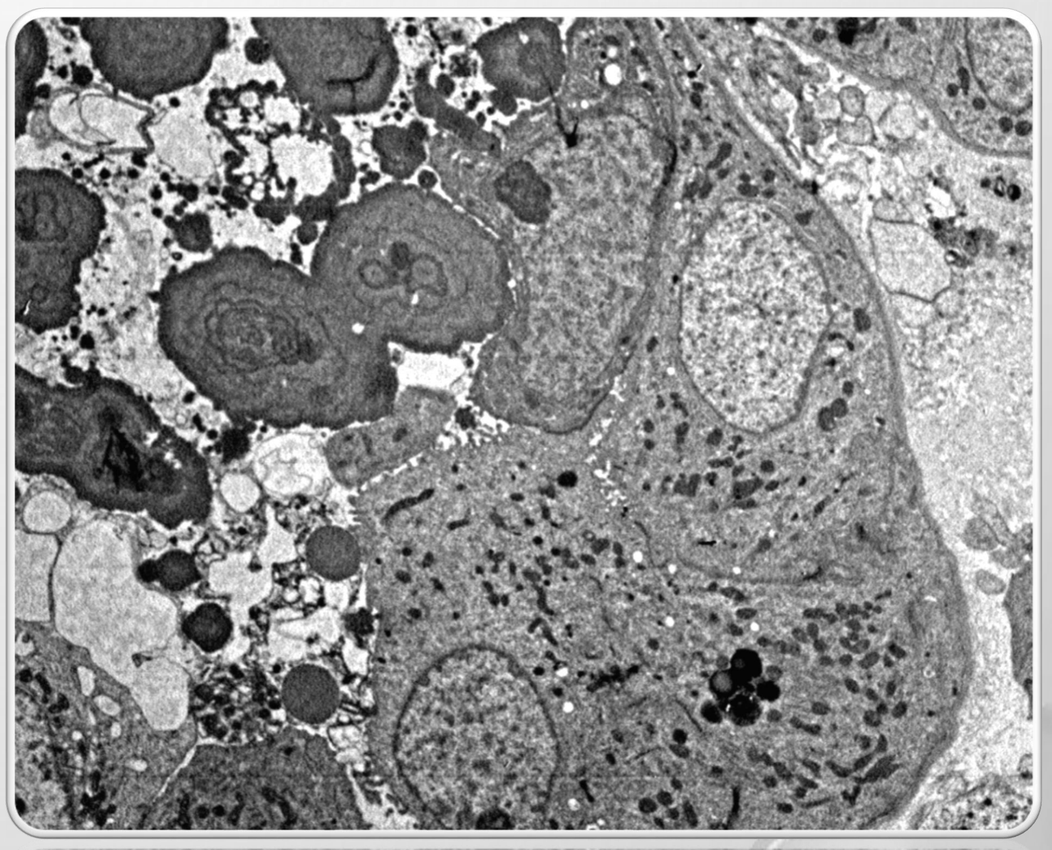

Figure 2. Electron dense material in the lumens of tubules, EM.

Conclusion:

These cases emphasize the importance of bearing in mind the possibility of rhabdomyolysis in a patient with acute kidney injury following a trauma. Rhabdomyolysis can lead to life-threatening multiorgan failure, so it is very important to timely recognize and treat such conditions.

References:

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