Rhabdomyolysis presenting as third-degree atrioventricular (AV) block: Differential diagnosis.

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Background:

Rhabdomyolysis is a rare but severe complication of urological surgery. We present a case with a patient who developed rhabdomyolysis after surgery. Diagnostic suspicion arose after the ECG exhibited a third-degree heart block caused by significant hyperkalaemia.

reddish-brown urine

Case Report:

A 75 years old male with history of chronic kidney disease Stage 3a, and VVI Pacemaker with currently-appropriate native rhythm was scheduled for a left laparoscopic nephroureterectomy. The surgery lasted 300 minutes. Postoperatively, the patient developed acute kidney failure with moderate hyperkalaemia, and he was found to have a complete AV block because a pacemaker started triggered. Rhabdomyolysis was suspected, and definitive diagnosis was made by serum creatine kinase (CK) levels. Vigorous fluid resuscitation was required as well as treatment for hyperkalaemia, diuretics and urine alkalization¹. After stabilization of hyperkaalemia he had his own rhythm back. His CK levels gradually dropped over the next hours, but creatinine peaked in a few days.

	16:20	18:30	22:00	1:51	7:00
K mmol/L (3.5 - 5.3),	5,4		6,7	5	4,8
Cr mg/dl (0.7 - 1.3)	1,69		2,28		3,82
CK U/L (39.0 - 308.0)			41.138		35.022
Lactate mmol/L (0.0 - 1.8)		1,98	2,28	2,4

Discussion:

Rhabdomyolysis is a well-known complication in urologic procedures², with an incidence of 0.67-1%. A high index of suspicion is critical for diagnosing it and must be considered as the presence of renal failure and reddish-brown urine. The final pathogenetic pathway promotes muscle cell damage and release of myoglobin, creatine phosphokinase, potassium and other enzyme and electrolytes into systemic circulation. Postoperative renal failure was expected in this case; it was hyperkalaemia and complete AV block which brought us on track to request further test and made the diagnosis. Rhabdomyolysis presenting as complete AV block it is uncommon³. We believe hyperkalaemia made our patient suffered from cardiac dysfunction due to exacerbated chronic renal failure and rhabdomyolysis. Patient had his own heart rate back as soon as potassium levels tapered to a normal level.

Learning points:

Third-degree heart block is an uncommon presentation of postoperative Rhabdomyolysis. It should be suspected following prolonged surgical procedures and acute kidney failure with hyperkalaemia.

References:

1. The syndrome of rhabdomyolysis: complications and treatment. Chatzizisis YS, et al. Eur J Intern Med. 2008; 19(8):568-74.
2. Rhabdomyolysis following laparoscopic radical nephrectomy: a case to heighten awareness. Irvine J et al Nephrology 2006; 11:282-4.
3. Rhabdomyolysis causing AV blockade due to possible atorvastatin, esomeprazole, and clarithromycin interaction. Brooke E Sipe, et al. The Annals of Pharmacotherapy 2003; 37(6):808-11.