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혈액투석으로 치료한 부신피질기능저하에서 발생한 심한 치명적인 고칼륨혈증 1예

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Life Threatening Hyperkalemia in Adrenal Insufficiency Successfully Treated with Acute Hemodialysis

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Introduction: Hyperkalemia is a potentially serious complication following adrenalectomy, and severe hyperkalemia, with potassium (K+) levels ≥6.5 mEq/L, is a potentially life-threatening electrolyte imbalance. In case of adrenal insufficiency, hyperkalemia is not a rare complication and usually controlled by oral potassium binding resins in outpatient clinic. Severe hyperkalemia can be treated with hemodialysis, it it rare that severe hyperkalemia (K+ of 10.0 mEq/L) due to mineralocorticoid deficiency which needed acute hemodialysis. We report a case of extremely life threatening hyperkalemia in a patient with adrenal insufficiency who underwent bilateral adrenalectomy that is successfully treated by urgent hemodialysis treatment.

Case: A 45-year-old woman visited emergency room because of general weakness and chest discomfort after common cold since 4 days before. She had suffered Cushing disease and treated with transsphenoidal pituitary gland tumor removal and subsequent bilateral adrenalectomy in 15 years ago. On arrival, she was normotensive, but complained chest discomfort and lower extremity weakness. Initial laboratory values showed a potassium level of 10.0 mEq/L, and a sodium level of 129 mEq/L. Blood urea nitrogen and creatinine were 33/1.22 mg/dL. The initial ECG showed a regular idioventricular rhythm with peaked T waves, loss of P wave, wide QRS complexes, and a frequency of 78 beats per minute. Prompt hemodialysis via femoral dual lumen catheter was performed after intravenous calcium and insulin infusion. After 2 hour of urgent hemodialysis, on correction of the hyperkalemia, she converted to sinus rhythm. After correction of hyperkalemia and mineralocorticoid deficiency, she is still stable in outpatient department without hyperkalemic event.

Conclusion: Life threatening hyperkalemia is rare but can be developed in the patients with adrenal insufficiency. We concluded that this case showed volume depletion and infectious condition could aggravate mineralocorticoid deficiency which appreciate extreme hyperkalemia. Regular monitoring and evaluation should be essential.

Key Words: 고칼륨혈증, 혈액투석, 부신피질기능저하
Hyperkalemia, Hemodialysis, Adrenal insufficiency