CASE REPORT

Abstract: Forensic autopsy cases detecting methamphetamine (MA) are usually diagnosed according to its toxicological concentration. It has been reported that the lethal blood concentration of MA is 4.48 µg/ml (3.0 µmol/dl). We autopsied two MA-detected cadavers, and immunohistochemical staining was performed on the skeletal muscle with an anti-myoglobin antibody, and on the kidney with an anti-the 70 kDa heat shock protein (HSP70) antibody. One case showed a high rectal temperature (40°C). The toxicological examination revealed 0.75 µg/ml of MA in the blood, and 16.8 µg/ml in the urine. Myoglobin was negative and HSP70 was positive in the kidney immunohistochemically. From the toxicological and immunohistochemical findings, it was considered that the subject died of hyperthermia and acidosis caused by muscular hyperactivity. In another case, the autopsy revealed highly congested lungs, with dark-red bloody fluid and foam in the trachea and bronchus. MA (17.0 µg/ml) was detected in the blood. HSP70 was negative and myoglobin was positive immunohistochemically. It was thought that the subject died of acute MA intoxication based on the high MA concentration, although rhabdomyolysis was suspected. It is suggested that myoglobin and HSP70 immunostaining are useful to diagnose MA poisoning. J. Med. Invest. 50: 112-116, 2003

Keywords: methamphetamine, kidney, myoglobin, the 70 kDa heat shock protein, immunohistochemistry
Autopsy findings

Histological findings

Toxicological examination

Immunohistochemical findings
Autopsy findings

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