Multiple Bee Sting-Induced Life-Threatening Takotsubo Cardiomyopathy

Jun Aono, MD, PhD; Makoto Saito, MD, PhD; Shinji Inaba, MD, PhD; Akira Kurata, MD, PhD; Teruyoshi Uetani, MD, PhD; Suguru Annen, MD; Haruhiko Higashi, MD, PhD; Jitsuo Higaki, MD, PhD; Shuntaro Ikeda, MD, PhD

An 87-year-old woman was transferred to the emergency department with multi-organ failure following more than 100 bee stings (Figure A). On admission, blood pressure was 91/68 mmHg, pulse rate was 104 beats/min, and body temperature was normal. On laboratory data, white blood cell count was increased (30,800/μL), along with elevated lactate dehydrogenase (6,423 U/L; normal range, 85–253 U/L), aspartate aminotransferase (8,505 U/L; normal range, 9–37 U/L), alanine aminotransferase (2,977 U/L; normal range, 3–49 U/L); serum creatinine (1.51 mg/dL; normal range, 0.5–1.2 mg/dL); blood urea nitrogen (40 mg/dL; normal range, 7–21 mg/dL); and creatine kinase (7,975 pg/mL; normal range, 31,990.8 pg/mL; respectively), indicating severe cardiac overload and myocardial damage. Electrocardiography (ECG) showed extremely marked ST segment elevation in leads I, II, aVL, aVF, and V2–V6 (Figure B) compared with that performed at the previous hospital (Figure B). Echocardiography showed classic left ventricular (LV) apical ballooning, suggesting acute coronary syndrome or takotsubo cardiomyopathy (TCM; Figure C, Movie S1). Emergency coronary angiography showed no significant coronary artery stenosis (Figure D); the patient was diagnosed with TCM. She underwent intensive care, including capillary hydrodynamic flow fractionation for rhabdomyolysis accompanying multi-organ failure possibly due to toxic effects of injected bee venom. Twenty-six hours after admission, sudden death occurred. Post-mortem computed tomography (CT) showed low-CT-value area of blood in the LV chamber, indicating severe myocardial damage. Electrocardiography showing marked ST segment elevation in leads I, II, aVL, aVF, and V2–V6 (Figure B). CT showed pericardial effusion that was not seen on CT at admission (Figure E). Echocardiography showing left ventricular apical ballooning (Figure B). CT showed pericardial effusion that was not seen on CT at admission. (F) Suspected cardiac rupture site detected by postmortem CT.