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Lung Damage without Chest Wall Injury due to Electrical Shock

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Introduction: Multiple organ injuries may develop related to current and time and independent of the burn area in injuries due to electrical shock. The following case is represented to emphasize lung damage developed due to an electrical shock but without chest wall injury.

Case Presentation: Male patient, age 31, had an electrical shock while car glass coating and was taken to the district hospital at arrest where 20 min of cardiopulmonary resuscitation was applied, sedatized and entubed, and was then sent to the emergency service of our hospital. In the physical examination conducted in our hospital, GKS 7E, pupillary anisocoria, and wounds due to current entrance at the right elbow and current exit at the right foot were present; there were no other characteristics. In the chest radiogram, bilateral consolidation and ground glass areas were observed. In the ECG, sinus tachycardia was detected. In the ECHO, EF was found to be 40% and global akinesia was present; there was no problem in the head and abdomen imaging. Laboratory analyses revealed creatinine 1.5 mg/dl, ALT 435 u/l, AST 420 u/l, CK 808 u/l, troponin 0.507 ng/ml, arterial blood gas analyses revealed pH 7.27, PaO2 64.9 mmHg, PaCO2 36.2 mmHg, HCO3 17 mmol/l, SaO2 87%, lactate 5.5 mmol/l. The patient had frequent ventricular fibrilation, thus, the cardiology department started metoprolol succinate with malign arrhythmia diagnosis. When monitored, the patient CK became 10,500 u/l, one dialysis was performed and was monitored for CK. The patient had high acute phase reactants and lung damage was considered; since the probability of infection could not be excluded, ceftriaxone was started empirically. The patient was extubed on the 5th day; monitored for oxygen demand and with CPAP for awhile, then, he was discharged without sequellae.

Conclusion: Serious internal organ injures, not proportionate with skin burns or without skin signs, may develop in electrical shocks. Systemic examinations must be conducted on electrical shock patients even if there are no clinical findings.

Keywords: Lung, electrical, trauma