

MRI : 1

■ ■ ■ ■ ■

가 , 가 MRI 가
MRI T2 가
가
가 (Fig. 1A).
fibrillation) , 가 (ventricular T2 가 (Fig. 1B).
가 100 - 230 volt , (Fig. 1C).
가 MRI 가 T2 (Fig. 1D).
(cranioplasty),
(tissue expander) ,
(2).
1 MRI 106 MRI T2 (Fig.
1E).
MRI 가
3800 volt 3 ,
가 가 2
CT (parieto - occipital)
14 MRI (1). 가
. T1 가

(hemiplegia), (paresthesia), 가
(aphasia), (ataxia),
(3). 가
25 - 67% (4), 가
(5). Levine (6)
가
가
106 92 14
가 death)
(demyelination),
(reactive gliosis), (neuronal

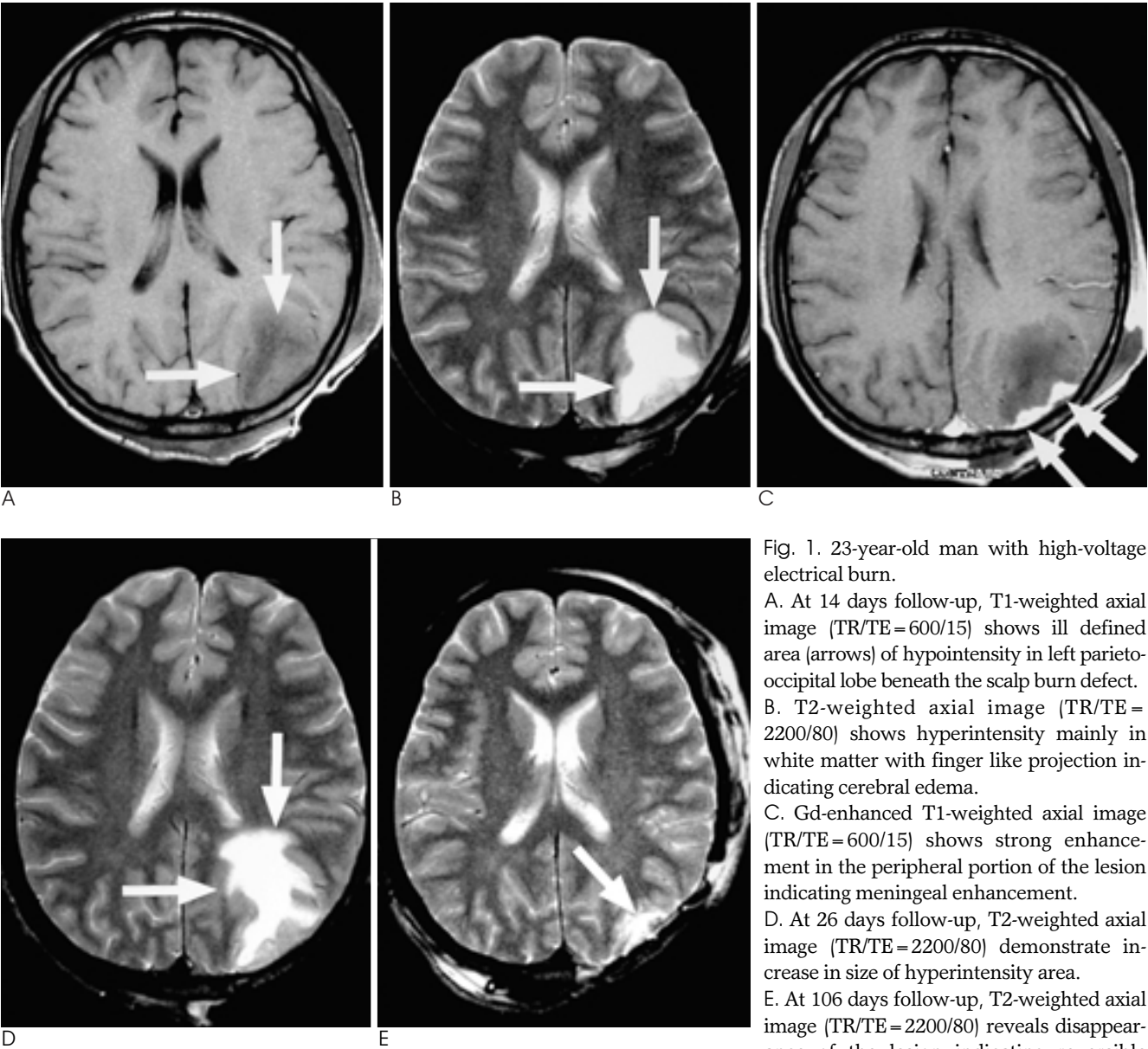


Fig. 1. 23-year-old man with high-voltage electrical burn.
A. At 14 days follow-up, T1-weighted axial image (TR/TE=600/15) shows ill defined area (arrows) of hypointensity in left parieto-occipital lobe beneath the scalp burn defect.
B. T2-weighted axial image (TR/TE=2200/80) shows hyperintensity mainly in white matter with finger like projection indicating cerebral edema.
C. Gd-enhanced T1-weighted axial image (TR/TE=600/15) shows strong enhancement in the peripheral portion of the lesion indicating meningeal enhancement.
D. At 26 days follow-up, T2-weighted axial image (TR/TE=2200/80) demonstrate increase in size of hyperintensity area.
E. At 106 days follow-up, T2-weighted axial image (TR/TE=2200/80) reveals disappearance of the lesion indicating reversible cerebral edema. Focal high signal intensity (arrow) in the cortical area is previous biopsy site.

가 . 가 MRI T1 가
가 , T2 ,
(endothelial proliferation)
가
가
(tunica media) , (tunica elastica)
가 (smooth
muscle) 가 (1).
MRI
(electroconvulsive therapy)
MRI (5).
stem herniation) (7) (brain
(5).
(calvarium)
(8),
MRI
23
MRI 가

1. Petty PK, Parkin G. Electrical injury to central nervous system. *Neurosurgery* 1986;19:282-284
2. Deveci M, Bozkurt M, Arslan N, Sengezer M. Nuclear imaging of the brain in electrical burn patients. *Burn* 2002;28:591-594
3. Farrell DF, Starr A. Delayed neurologic sequelae of electrical injuries. *Neurology* 1968;18:601-606
4. Chen CT, Yang JY. Electrical burns associated with head injuries. *J Trauma* 1994;37:195-199
5. Milton WJ, Hal O, Dell R, Warner EG. MRI of the lightning injury: early white matter changes associated with cerebral dysfunction. *J Okla State Med Assoc* 1996;89:93-94
6. Levine NS, Atkins A, McKeel DW Jr, Peck SD, Pruitt BA Jr. Spinal cord injury following electrical accidents: case reports. *J Trauma* 1975; 15:459-463
7. Netteblad H, Thuomas KA, Sjoberg F. Magnetic resonance imaging: a new diagnostic aid in the care of high-voltage electrical burns. *Burns* 1996;22:117-119
8. Norkus T, Klebanovas J, Viksraitis S, et al. Deep electrical burns of the calvarium: early or delayed reconstruction? *Burns* 1998; 24:569-572

MRI Findings of the Brain in High-Voltage Electrical Burn Patient: Case Report¹

Cheung Sook Kim, M.D., Sung Hwan Hong, M.D., Myung Joon Lee, M.D.,
Seong Whi Cho, M.D., Eil Seong Lee, M.D., Ik Won Kang, M.D.

¹Department of Radiology, Hallym University College of Medicine

We report the delayed sequelae arising in a case of electrical injury, reviewing the literature on the subject and focusing on the MRI findings of the brain. A 23-year-old male suffered burns to the left parietal scalp, both feet, and the anterior chest wall. Neurological symptoms and MRI abnormalities appeared 14 days after the insult and continued for about three months. T1-weighted MR images demonstrated homogeneous hypointensity, while T2-weighted images depicted hyperintense finger-like projections. Contrast-enhanced T1-weighted images demonstrated strong band-like enhancement, indicating meningeal hyperemia. Follow-up MR imaging showed that the lesion had disappeared, indicating that the cerebral edema and meningeal hyperemia were reversible.

Index words : Brain, MR
Brain, burn
Electrical burn