SEVERANCE

QUIZ

Ho Jun Lee

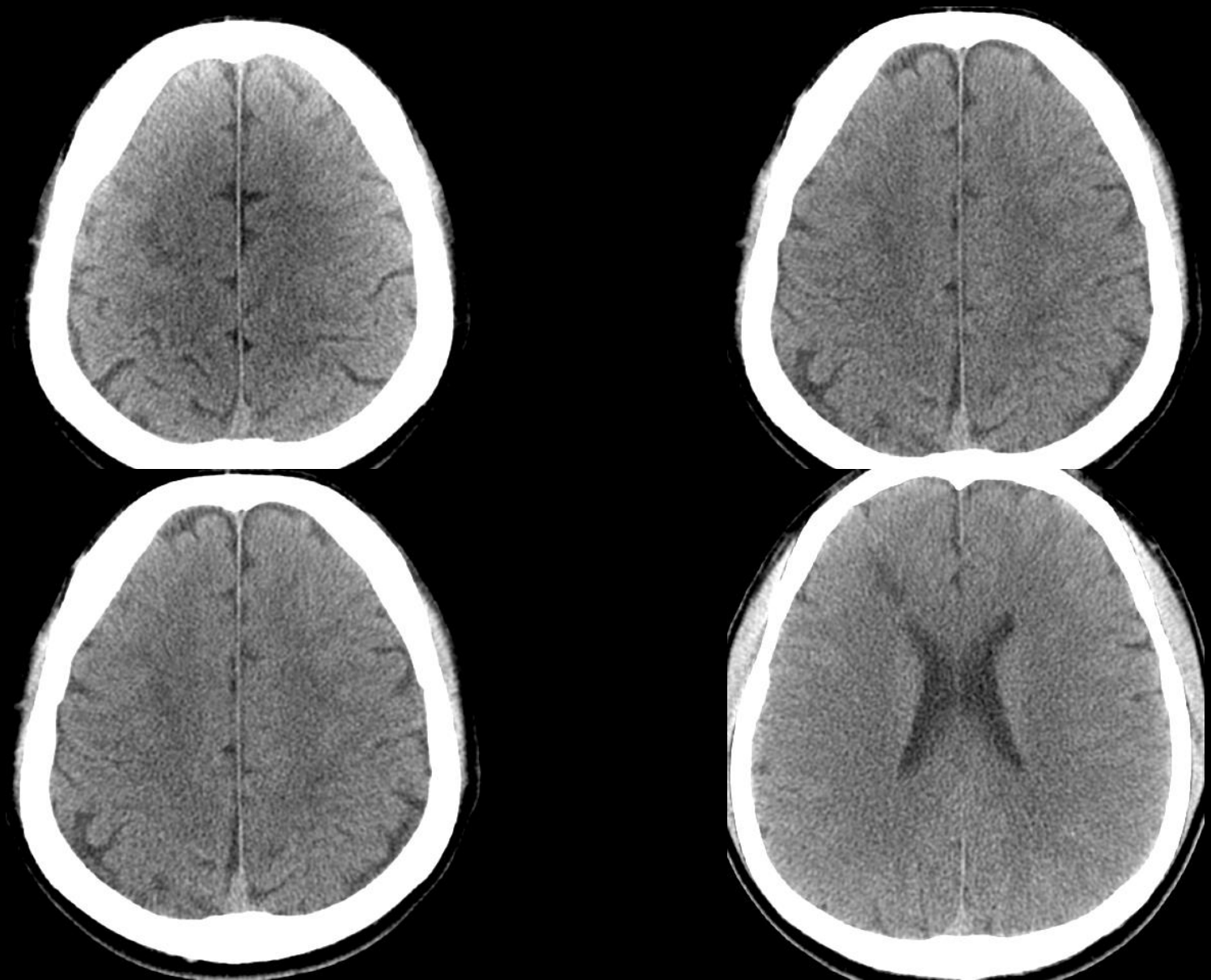
Severance Hospital

Seoul, Korea

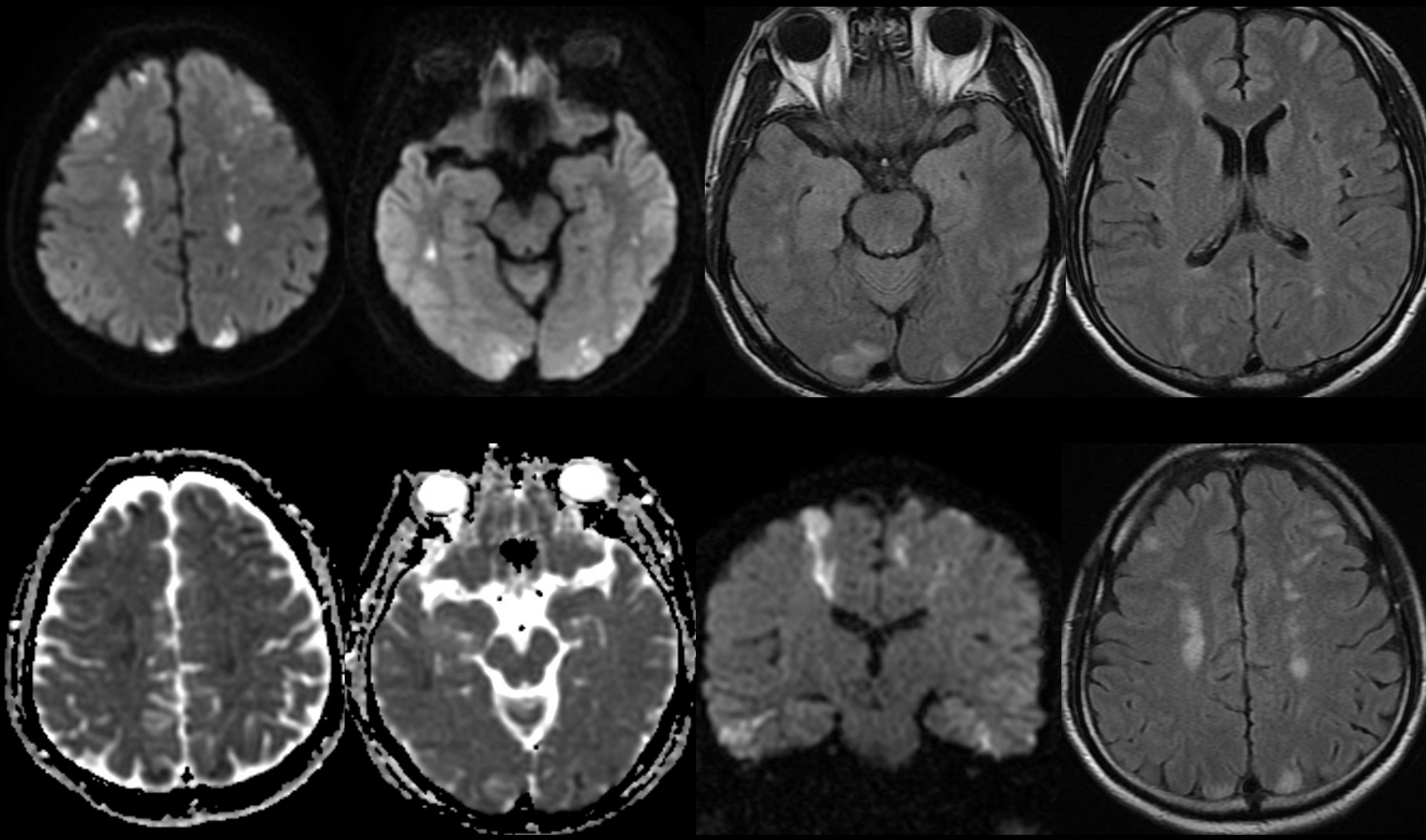
Case1. M/60 Right side weakness

- Chief Complaint: Right side weakness
  - Headache, myalgia
- Past medical history
  - HTN/DM/Hypercholesterolemia (-/-/+-)
  - Smoking (+), Alcohol (+)

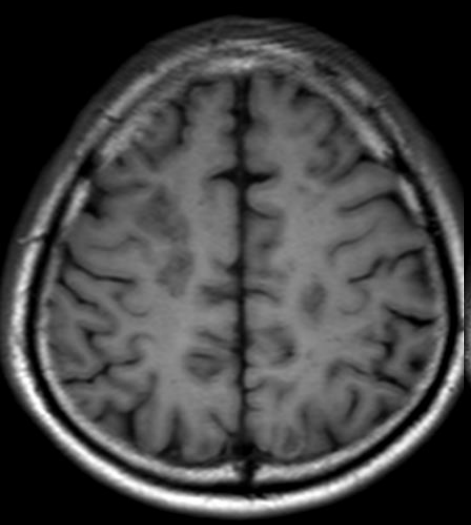
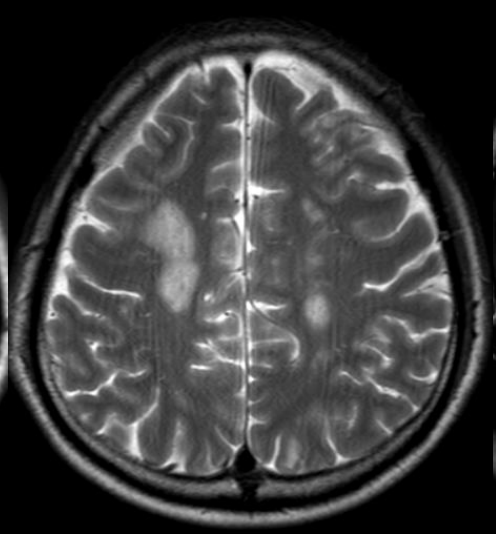
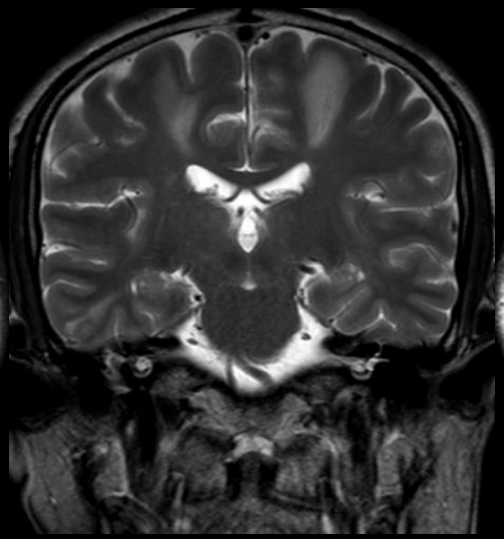
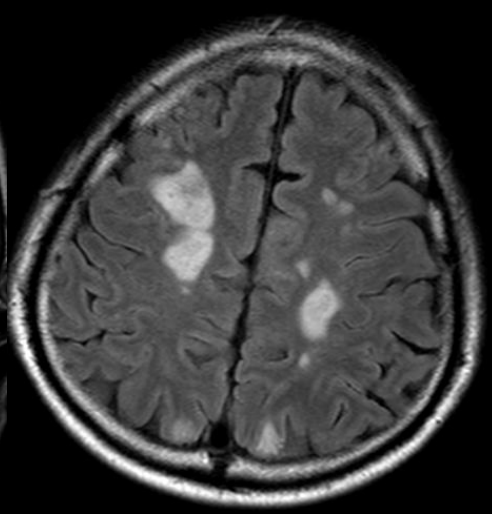
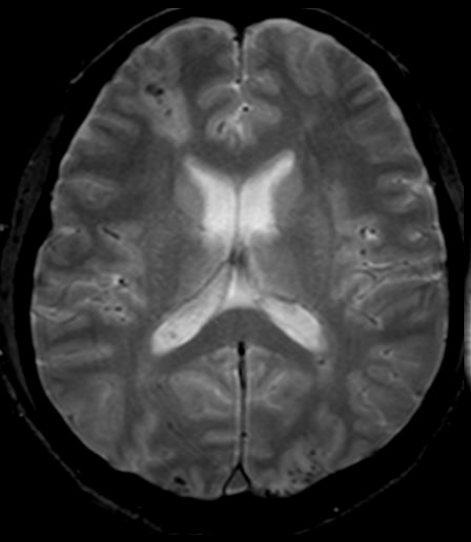
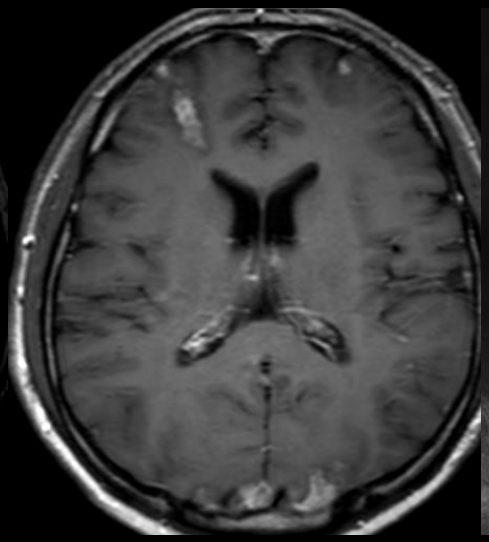
Brain CT scan
2014-01-25

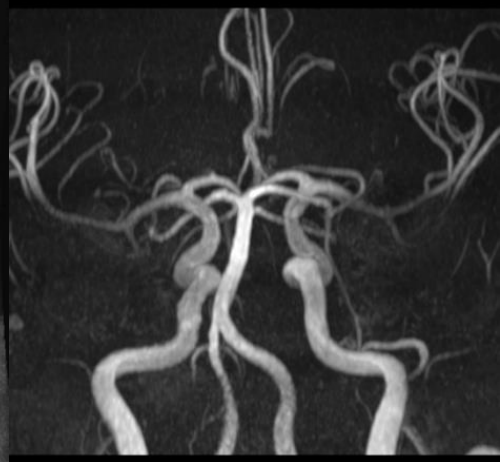


Brain MRI
2014-01-27



f/u Brain MRI & MRA
2014-02-06



Thromboembolic infarction?
Borderzone infarction?

- TEE (2014-02-06) : Normal
- 24hr holter monitoring: Normal

- CBC- Mild leukocytosis (13080/ul, reference: 4000-10800)
  - **Eosinophil: 35.9 % (reference: 0~7%)**

- BM biopsy
  - R/O reactive eosinophilia
- Tumor marker: all negative
  - AFP, CEA, PSA, and CA 19-9
- Parasitic Ab: all negative
  - Cysticercosis Ab IgG, Sparganum Ab IgG, Paragonimus wetermani Ab IgG, Clnorchis sinesis Ab IgG
- No documented history of asthma, allergic rhinitis

Cerebral infarction from hypereosinophilic syndrome

Hypereosinophilic syndrome

- **Subcategory of idiopathic eosinophilia**
  - Presence of > 1,500/ul eosinophils in peripheral blood for at least 6m
  - Evidence of organ involvement
  - Lack of evidence of parasitic, allergic, or other cause of eosinophilia
- Rare, unknown prevalence, male
- Non-specific symptoms
  - Cough, fatigue, fever and weight loss

- All organs can be affected
  - Dermatologic, pulmonary and cardiac manifestation
  - **Neurologic complication**
    - **Thromboembolic infarction**, encephalopathy, and peripheral neuropathy

Neurology 2008;70(1):80–82

Mayo Clin Proc 2010;85:158-64

Hypereosinophilic syndrome

- **Imaging findings**
  - **Borderzone infarction**
  - **Hemorrhage (rare)**
- **Cause of predilection at watershed areas (Controversial)**
  - **Cardioembolism**
    - Endomyocardial fibrosis → Thrombus formation
    - Small particles embolize to watershed area
  - **"Washout" theory**
    - Low wash out of emboli due to hyperviscosity in microvasculature
      → **accumulation of embolic particles in distal arteries**
  - **In situ thrombosis**
    - Direct cytotoxic effect of protein from circulating eosinophils → **endothelial damage** → **Thrombosis**

J Neurol Sci. 2013 Feb 15;325(1-2):162-4.
Korean J Radiol. 2009 Sep-Oct; 10(5): 511–514
Acta Neurlo Taiwan (2008); 17:184-9

From: **Cerebral Arteriolar Thromboembolism in Idiopathic Hypereosinophilic Syndrome**

Arch Neurol. 2009;66(4):528-531. doi:10.1001/archneurol.2009.36

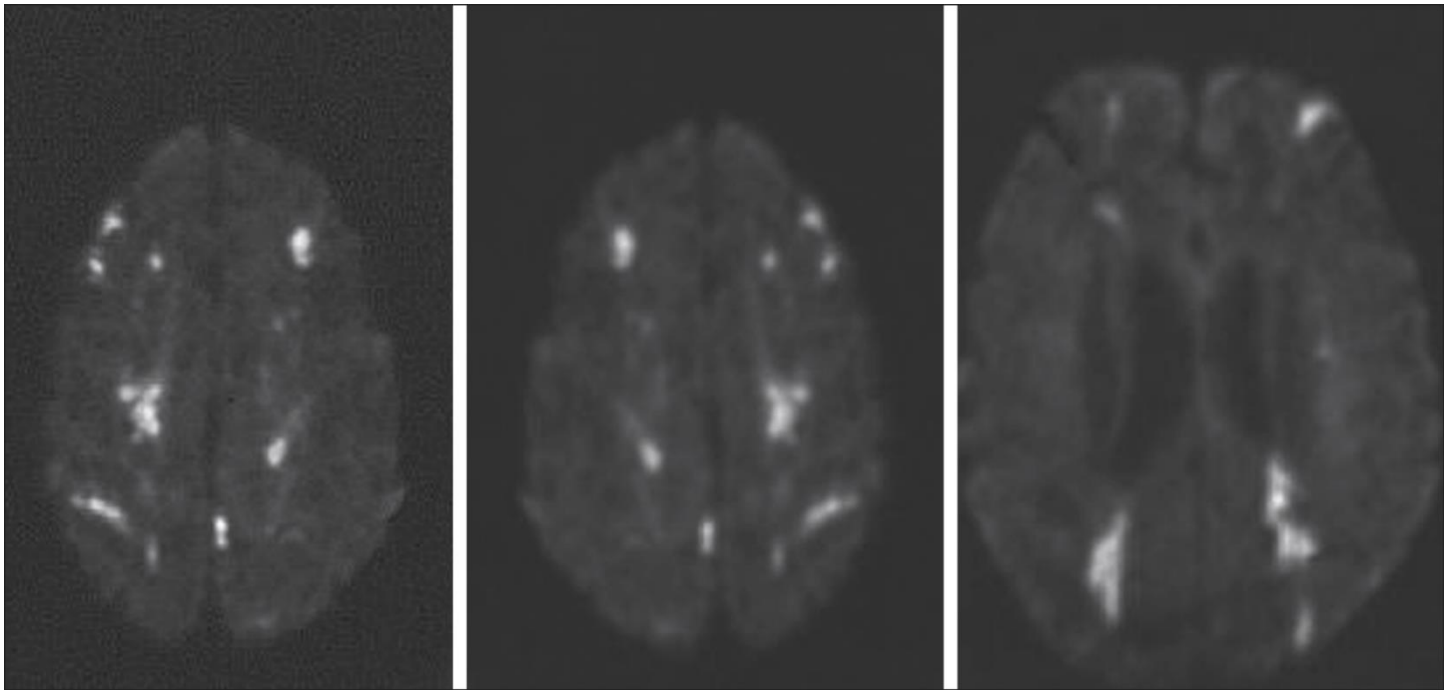
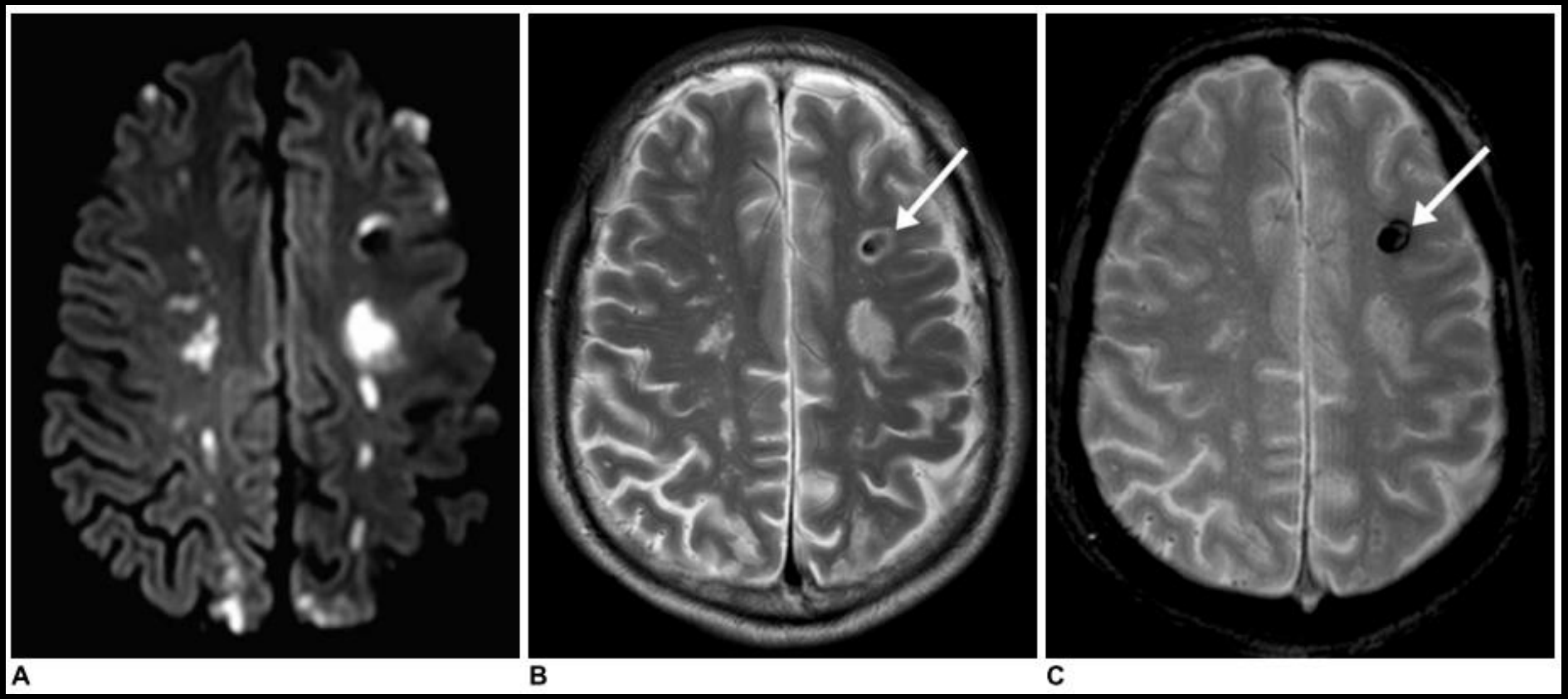


Figure Legend:

Diffusion-weighted magnetic resonance imaging showing multiple bilateral ischemic lesions both in and beyond the watershed zones.



Korean J Radiol. 2009 Sep-Oct; 10(5): 511–514.

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ありがとうございます